Introduction

New models and a wider range provide an array of solutions, meeting the needs of today's high performance applications.

Our new range of MOSFET relays, Type G3VM, set the benchmark in Solid State Relays (SSRs). Products are manufactured using the latest advances in automated production and include a variety of improved construction technologies within the areas of the input LED, PDA (Photo Diode Array used as a photocoupler) and MOSFET chips used in the load switching circuit. As a result, further reductions in package size and power requirements have been achieved.

Combining the advantages of mechanical and solid state technology, the new G3VM range gives you unprecedented capability to design. All models featured include a double MOSFET load circuit, enabling the designer complete versatility since it makes no difference whether an AC or DC load in either direction is connected (Connection A). Thus, the MOSFET relay is a fully functional alternative to an electromechanical relay with minimal additional drive circuitry.

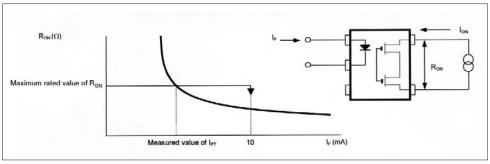
The built-in Current Limit Function (CLR models) has many uses. Traditionally used to clamp excessive over current fault conditions in telecom equipment, this feature can also be used to good effect to resist transient and short circuit conditions.

MOSFET relays are the ideal data and telecommunication solution for line seizing, line switching, hook switching, Data Access Arrangement (DAA) function, line transformer circuit control and other feature phone functions. Central office applications require high reliability and long life. Here G3VM is ideal for use in the areas of Subscriber Line Interfaces (SLICs) Multiplexers and Routers. In addition, Local Area Networks (LANs) and Network Termination Units (NTUs) including Set-Top Boxes (STBs) and Remote Metering Systems (RMS) can take advantage of the G3VMs' small size and low ON resistance.

Advances in performance and cost reduction enable MOSFET relays to be considered as good alternatives to Reed Relays in application areas such as security motion detectors (standard and anti-mask PIRs), other surveillance alarm equipment and associated systems.

■ Glossary

Term	Symbol	Description
LED forward current	I _F	Rated current that can flow continuously in the forward direction of the LED
Repetitive peak LED forward current	I _{FP}	Rated current that can flow momentarily in the forward direction of the LED
LED forward current reduction rate	<i<sub>ON/°C</i<sub>	Rated change of forward current flowing through the LED relative to ambient temperature above 25 $^{\circ}\mathrm{C}$
LED reverse voltage	V _R	Rated reverse voltage that can be applied between the anode and the cathode
Connection temperature	TJ	Rated temperature that can be allowed in the junction of the LED, Photodetector or MOSFET(s)
Output dielectric strength	V _{OFF}	Rated voltage that can be applied between the MOSFET's output terminals in the OFF state
Continuous load current	lo	Rated current that can flow between the MOSFET's output terminals in the ON state
ON current reduction rate	<i<sub>ON/°C</i<sub>	Rated change of load current flowing between MOSFET(s) output terminals relative to ambient temperature above 25 $^\circ\text{C}$
Dielectric strength between input and output	V _{I-O}	Isolation voltage between input and output terminals for a specified time
Operating temperature	Ta	Ambient temperature range in which the relay may be operated without impairment
Storage temperature	T _{stg}	Ambient temperature range in which the relay may be stored while not operating
LED forward voltage	V _F	Voltage drop between the LED's anode and cathode at a certain forward current
LED reverse current	I _R	Leakage current flowing in the LED's reverse direction (between cathode and anode)
Capacity between LED terminals	C _T	Electrostatic capacitance between the anode and the cathode terminals of the LED
Trigger LED forward current	I _{FT}	Minimum value of input current necessary to put the output MOSFET(s) in to the ON state
Maximum resistance with output ON	R _{ON}	Resistance between the MOSFET's output terminals specified with reference to ON state current
Current leakage when the relay is open	I _{LEAK}	Leakage current flowing between the MOSFET's output terminals in the OFF state
Capacity between I/O terminals	C _{I-O}	Electrostatic capacitance between the input and output terminals of the relay
Insulation resistance	R _{I-O}	Resistance between the input and output terminals at the specified voltage value
Turn-ON time	tON	Time required for the output waveform to change from 0(100%) to 90(10%) after input goes from OFF to ON state
Turn-OFF time	tOFF	Time required for the output waveform to change from 0(100%) to 90(10%) after input goes from ON to OFF state
Output dielectric strength	V _{DD}	Rated load voltage that can be applied between the MOSFET's output terminals



Relationship between Ron and IFT

PRECAUTIONS WHEN MOUNTING DEVICES ON PCBS

Soldering

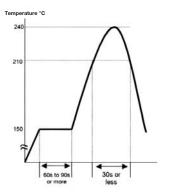
As far as it is possible, avoid raising the temperature of the device by observing the following restrictions.

Soldering leads directly

260°C max, 10 seconds max

Reflow soldering

- a) Lead temperature: 210°C max, 30 seconds max Atmospheric temperature close of mold body surface: 240°C max, 10 seconds max
- b) Recommended temperature profile



c) Precautions when heating

The soldering time (as shown above) must be kept as short as possible.

When using a halogen lamp of infrared heater, please do not irradiate the mold body surface directly.

Dip soldering (flow soldering)

Reflow soldering is recommended because the thermal stress involved is much less than that inherent in other soldering methods.

If you plan to use dip soldering, please contact OMRON first.

Cleaning

When ions in the flux enter into the product during soldering, fluctuation in device performance or corrosion may occur. Be sure to wash away any flux residue which contains C or Na ions.

The following types of solvents are recommended for cleaning the flux $% \left(1\right) =\left(1\right) \left(1\right)$

Asahi Clean AK-225AES

Kao Cleanthru 750H

Pine-Alpha ST-100S

Cleaning Conditions

Cleaning conditions and precautions may vary according to product specifications.

a) General precautions for dip cleaning

Dipping time varies according to the solvent used.

However, as a general guideline, it is recommended that the dip time be limited to three minutes.

b) General precautions for ultrasoni cleaning

When ultrasonic cleaning is conducted for an excessively long time, contact between the product resin and the metal leads may lessen. Also, excessive ultrasonic stress may cause cracks in the pellet.

It is recommended that the applied stress be minimized.

Recommended conditions for standard ultrasonic cleaning

Frequency: 27kHz to 29kHz
Output: 0.25 W/cm² or less
Time: 30 seconds or less

Temperature: 50°C (may vary according to the type of solvent

used)

Cleaning must be conducted with the printed circuit board or device floating on the solvent, so as to avoid direct contact between the PCB or device and the ultrasonic vibrator.

Handling Precautions

Do not touch the device's mark-bearing surface with your hand or with a brush while cleaning or applying cleaning liquid to the device. This may erase device markings. It is important to confirm that neither the solvent used for cleaning nor the cleaning conditions will damage the device package.

Precautions

Be sure to turn OFF the power when wiring the relay, otherwise an electric shock may be received.

WARNING



Do not touch the charged terminals of the SSR, otherwise an electric shock may be received.

CAUTION

Do not apply overvoltage or overcurrent to the I/O circuits of the SSR, otherwise the SSR may malfunction or burn.

CAUTION

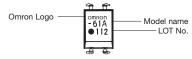
Be sure to wire and solder the Relay under the proper soldering conditions, otherwise the Relay in operation may generate excessive heat and the Relay may burn.

CAUTION

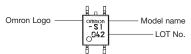
Electrostatic sensitive devices. Keep in original packaging until required to use. Avoid touching device terminals. Take static handling precaustions during processing.

Appearence Examples





SOP (Small Outline Package)



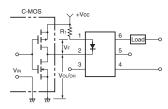
SSOP (Shrink Small Outline Package)



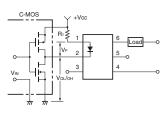
Note 'G3VM' is not printed on the actual product

Typical Relay Driving Circuit Examples

C-MOS



Transistor



Use the following formula to obtain the LED current limiting resistance value to assure that the relay operates accurately.

$$R_1 = \frac{V_{CC} - V_{OL} - V_F (ON)}{5 \text{ to 20 mA}}$$

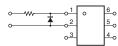
Use the following formula to obtain the LED forward voltage value to assure that the relay releases accurately.

$$V_{F (OFF)} = V_{CC} - V_{OH} < 0.8 \text{ V}$$

PROTECTION FROM SURGE VOLTAGE ON THE INPUT TERMINALS

If any reversed surge voltage is imposed on the input terminals, insert a diode in parallel to the input terminals as shown in the following circuit diagram and do not impose a reversed voltage value of 3 V or more.

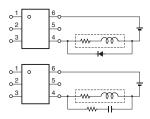
Surge Voltage Protection Circuit Example



PROTECTION FROM SPIKE VOLTAGE ON THE OUTPUT TERMINALS

If a spike voltage exceeding the absolute maximum rated value is generated between the output terminals, insert a C-R snubber or clamping diode in parallel to the load as shown in the following circuit diagram to limit the spike voltage.

Spike Voltage Protection Circuit Example



UNUSED TERMINALS (6-PIN MODELS ONLY)

Terminal 3 is connected to thr internal circuit. Do not connect anything to terminal 3 externally.

PIN STRENGTH FOR AUTOMATIC MOUNTING

In order to maintain the characteristics of the relay, the force imposed on any pin of a relay for automatic mounting must not exceed the following.

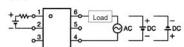


In direction A: 1.96 N In direction B: 1.96 N

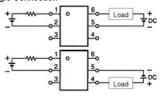
LOAD CONNECTION

Do not short-circuit the input and output terminals while the relay is operating or the relay may malfunction.

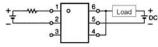
AC Connection



DC Single Connection



DC Parallel Connection



SOLDER MOUNTING

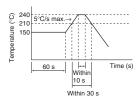
Maintain the following conditions during manual or reflow soldering of the relays in order to prevent the temperature of the relays from rising.

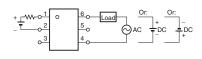
1. Pin Soldering

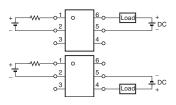
Solder each pin at a maximum temperature of 260°C within 10 s.

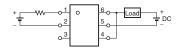
2. Reflow Soldering

- a. Solder each pin at a maximum temperature of 260 $^{\circ}\text{C}$ within 10 s.
- b. Make sure that the ambient temperature on the surface of the resin casing is 240C max. for 10 s maximum.
- c. The following temperature changes are recommendable for soldering.









Part Number (G3VM-)		-61A1	-351A	-353A	-353A1	-401A	-61D1	-351D	-353D	-353D1	-401D	
Style			Through-	hole Devic	e – 4 pin			Surface I	Mount Dev	ice – 4 pin			
				9		7			3		0		
Dimensions (L	. x W x H mm)		4.58 x 6.4	x 3.65				4.58 x 6.4	x 3.65				
Туре			General F	urpose				General P	urpose				
Output	Load Voltage		60V	350V	350V	350V	400V	60V	350V	350V	350V	400V	
	Function		1a	1a	1b	1b	1a	1a	1a	1b	1b	1a	
	Cont. load curre (connection A)	ent	500mA	120mA	150mA	100mA	120mA	500mA	120mA	150mA	100mA	120mA	
	ON resistance	Typical	1 Ω	35 Ω	15 Ω	30 Ω	18 Ω	1 Ω 35 Ω 15 Ω 30 Ω 1				18 Ω	
		Max.	2 Ω	50 Ω	25 Ω	50 Ω	35 Ω					35 Ω	
Input	LED forward cu	irrent (max)			50 mA					50 mA			
	LED reverse vo	Itage (max)			5V					5V			
	Trigger LED current	Typical	1.6mA	1mA	1mA	1mA	1mA	1.6mA	1mA	1mA	1mA	1mA	
	current	Max.	3mA	3mA	3mA	3mA	3mA	3mA	3mA	3mA	3mA	3mA	
Switching	Turn on Typical		0.8ms	0.3ms	0.1ms	0.25ms	-	0.8ms	0.3ms	0.1ms	0.25ms	-	
	Time	Max.		1ms	1ms	0.5ms	1ms	2ms	1ms	1ms	0.5ms	1ms	
	Turn off Time			0.1ms	1ms	0.5ms	-	0.1ms	0.1ms	1ms	0.5ms	-	
	Time	Max.	0.5ms	1ms	3ms	1ms	1ms	0.5ms	1ms	3ms	1ms	1ms	
Dielectric Stre	ength between I/C) terminals			2,500 VAC					2,500 VAC			
Temperature	Operating			-4	40°C to 85°	С		-40°C to 85°C					
	Storage			-5	5°C to 125°	°C		-55°C to 125°C					
Floating capac	city between I/O	terminals			0.8 pF					0.8 pF			
Insulation resi	stance				1,000 MΩ		_			1,000 MΩ			
Stick Quantity	'		100	100	100	100	100	100	100	100	100	100	
Reel Quantity	(Tape & Reel)		-	-	-	-	-	1,500	1,500	1,500	1,500	1,500	
Terminal arran	удетен		4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3					3					
Mounting Hole	4-9 0. 8 MOLES				2,54								
Page			328	330	332	332	334	328	330	332	332	334	

Part Number (G3VM-)		-61G1	-81G1	-201G	-351G	-351GL	-353G	-353G1	-401G	-21GR	-21GR1	-41GR5	-41GR6	-61GR1
Style			Small	Outline I	Package	– 4 pin									
							4	6	OMA SIG	20					
Dimensions (L	x W x H mm)		30.4 x	4.4 x 2.1											
Туре			Genera	l Purpos	е						Special	l Purpose	9		
Output	Load Voltage		60V	80V	200V	350V	350V	350V	350V	400V	20 V	20 V	40 V	40 V	60 V
	Function		1a	1a	1a	1a	1a	1b	1b	1a	1a	1a	1a	1a	1a
	Cont. load curre (connection A)	ent	400 mA	350 mA	50 mA	110 mA	120 mA	120 mA	90 mA	120 mA	160 mA	300 mA	300 mA	120 mA	1,000 mA
	ON resistance	Typical	1 Ω	1 Ω	40 Ω	35 Ω	15 Ω	15 Ω	30 Ω	17 Ω	5 Ω	1 Ω	1 Ω	10 Ω	0.32 Ω
		Max.	2 Ω	1.2 Ω	50 Ω	50 Ω	35 Ω	25 Ω	50 Ω	35 Ω	8 Ω	1.5 Ω	1.5 Ω	15 Ω	0.7 Ω
Input	LED forward cu			50 mA											
	LED reverse vo		10.1	5V											
	Trigger LED current	Typical	1.6mA 3mA								- 4 A	4 4	4 4	4 4	- 0 A
Switching	Max.				3mA	3mA 0.3ms	3mA 0.3ms	3mA	3mA 0.25ms	3mA 0.3ms	4mA	4mA	4mA	4mA	3mA 1.4ms
Switching	itching Turn on Typical Time Max.			0.3ms	1ms	1ms	1ms	1ms	1ms	1ms	0.5ms	0.5ms	0.5ms	0.5ms	3ms
	Max. Turn off Typical			0.1ms	-	1ms	0.1ms	-	0.5ms	0.1ms	-	0.51115	-	-	0.6ms
	Time	Max.	0.1ms 0.5ms	1ms	1ms	3ms	1ms	1ms	1ms	1ms	0.5ms	0.5ms	0.5ms	0.5ms	1ms
Dielectric Stre	ngth between I/C		-			-			1,500 VA						
Temperature	Operating			-40°C to 85°C -20°C to 85°C											
	Storage					-55°C	to 125°C				-40°C to 125°C				
Floating capac	city between I/O	terminals							0.8 pF						
Insulation resi	stance								1,000 Mg	2					
Stick Quantity			100	100	100	100	100	100	100	100	100	100	100	100	100
Reel Quantity	(Tape & Reel)		2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Terminal arran	gement			2,500 2,500 2,500 2,500 2,500 2,500 2,500 2,500 2,500 2,500 2,500 2,500											
Mounting Hole	Mounting Holes Page			338	340	342	344	2.5	0.8	£9 - 9	350	352	354	356	358
rage			336	ತಿತಿಕ	340	342	344	346	346	348	350	352	354	330	აეგ

Part Number (G3VM-)		-21LR	-21LR1	-41LR5	-41LR6	-61B1	-61BR	-351B	-353B	-353B1	-401B	-401BY	-601BY
Style	dovin ,		-		ine Packa			1 Hole De			00001	4015	40101	00101
Dimensions (L	. x W x H mm)		1.7 x 4	.2 x 1.8			7.12 x 6.4 x 3.65							
Туре			Specia	l Purpose)		General	Purpose					Telecom	ı
Output	Load Voltage		20 V	20 V	40 V	40 V	60 V	60 V	350 V	350 V	350 V	400 V	400 V	600 V
	Function		1a	1a	1a	1a	1a	1a	1a	1b	1b	1a	1a hi isol	1a hi isol
	Cont. load curre (connection A)	ent	160 mA	450 mA	300 mA	120 mA	500 mA	2,500 mA	120 mA	150 mA	100 mA	120 mA	120 mA	100 mA
	ON resistance	Typical	5 Ω	0.8 Ω	1 Ω	10 Ω	1 Ω	0.065 Ω	25 Ω	15 Ω	27 Ω	17 Ω	17 Ω	25 Ω
		Max.	8 Ω	1.2 Ω	1.5 Ω	15 Ω	2 Ω	0.1 Ω	35 Ω	25 Ω	50 Ω	35 Ω	35 Ω	35 Ω
Input	LED forward cu	irrent (max))mA		50mA	30mA				lmA		
	LED reverse vo			5	5 V						V			
	Trigger LED current	Typical	-	-	-	-	1.6mA	1mA	1mA	1mA	1mA	1mA	-	1.6mA
		Max.	4mA	4mA	4mA	4mA	3mA	3mA	3mA	3mA	3mA	3mA	3mA	5mA
Switching	Turn on Typical Time Max.			-	-	-	0.8ms	1ms	0.3ms	0.1ms	0.25ms	0.3ms	0.3ms	0.2ms
		0.5ms	0.5ms	0.5ms	0.5ms	2ms	1.5ms	1ms	1ms	0.5ms	1ms	1ms	1.5ms	
	Turn off Time	Typical	-	-	-	-	0.1ms	0.2ms	0.1ms	1ms	0.5ms	0.1ms	0.1ms	0.2ms
D: 1 . : 0:		Max.	0.5ms	0.5ms	0.5ms	0.5ms	0.5ms	0.4ms	1ms	3ms	1ms	1ms	1ms	1ms
	ength between I/C	terminals	_		0 VAC		2,500 VAC				4000	5,000 VAC		
Temperature	Operating				to 85°C		to 85°C to 85°C							
	Storage				to 125°C		-55°C -40°C -55°C to 125°C to 125°C							
	city between I/O	terminals			B pF						B pF			
Insulation resi				1,00	0 MΩ		50	50	50		ΩΜ 0	50	50	50
Stick Quantity			1,500	1,500	1,500	1 500	_	50			50			-
Reel Quantity Terminal arrar			1,500	4		3	- 50 50 50 50 50 50 50 50 50 1,500							
Mounting Holes			- 360	362	0.95 3 - 0.8 1.27	360	368 370 372 374 374 376 378 3					380		
			500	302	1004	1000	300	1310	312	514	1014	1010	010	300

Part Number (G3VM-)		-61E1	-61ER	-351E	-353E	-353E1	-401E	-401EY	-601EY		
Style			Surface Mo	unt Device - 6	pin							
					(onge						
Dimensions (L	x W x H mm)		7.12 x 6.4 x	3.65								
Туре			General Purp	oose					Telecom			
Output	Load Voltage		60 V	60 V	350 V	350 V	350 V	400 V	400 V	600 V		
	Function		1a	1a	1a	1b	1b	1a	1a hi isol	1a hi isol		
	Cont. load curre (connection A)	ent	500 mA	2,500 mA	120 mA	150 mA	100 mA	120 mA	120 mA	100 mA		
	ON resistance	Typical	1 Ω	0.065 Ω	25 Ω	15 Ω	27 Ω	17 Ω	17 Ω	25 Ω		
		Max.	2 Ω	0.1 Ω	35 Ω	25 Ω	50 Ω	35 Ω	35 Ω	35 Ω		
Input	LED forward cu	irrent (max)	50mA	30mA			50	mA				
	LED reverse vo	Itage (max)	5 V									
	Trigger LED current	Typical	1.6mA	1mA	1mA	1mA	1mA	1mA	-	1.6mA		
		Max.	3mA	3mA	3mA	3mA	3mA	3mA	3mA	5mA		
Switching	Turn on Time	Typical	0.8ms	1ms	0.3ms	0.1ms	0.25ms	0.3ms	0.3ms	0.2ms		
		Max.	2ms	1.5ms	1ms	1ms	0.5ms	1ms	1ms	1.5ms		
	Turn off Time	Typical	0.1ms	0.2ms	0.1ms	1ms	0.5ms	0.1ms	0.1ms	0.2ms		
		Max.	0.5ms	0.4ms	1ms	3ms	1ms	1ms	1ms	1ms		
	ngth between I/C) terminals	2,500 VAC 5,000 VAC 5,000 VAC -40°C to 85°C									
Temperature	Operating Storage		85°C -55°C to	to 85°C -40°C				o 125°C				
Floating capac	city between I/O	terminals	125°C	to 125°C		3.0	B pF					
Insulation resi	-						0 MΩ					
Stick Quantity	,		50	50	50	50	50	50	50	50		
Reel Quantity	(Tape & Reel)		1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500		
Terminal arran	gement											
Mounting Hole	es		368 370 372 374 376 378 381						201			
Page			368	370	372	374	374	376	378	381		

Part Number (G3VM-)		-61H1	-81HR	-201H1	-351H	-353H	-353H1	-401H		
Style	-		Small Outline	Package – 6 pi	n						
					e on	ROT I					
Dimensions (L	x W x H mm)		6.3 x 4.4 x 2.1								
Туре			General Purpose	Special Purpose	General Purpose						
Output	Load Voltage		60 V	80V	200 V	350 V	350 V	350 V	400 V		
	Function		1a	1a	1a	1a	1b	2b	1a		
	Cont. load curre (connection A)	ent	400 mA	1,250 mA	200 mA	110 mA	120 mA	90 mA	120 mA		
	ON resistance	Typical	1 Ω	2 Ω	5 Ω	25 Ω	15 Ω	27 Ω	17 Ω		
		Max.	2 Ω	4 Ω	8 Ω	35 Ω	25 Ω	50 Ω	35 Ω		
Input	LED forward cu					50 mA					
	LED reverse vo					5 V					
	Trigger LED current	Typical	1.6mA	2mA	1mA	1mA	1mA	1mA	1mA		
Ouritable o	Turn on	Max.	3mA	5mA	3mA	3mA	3mA	3mA	3mA		
Switching	Time	Typical	0.8ms 2ms	2ms 3ms	0.6ms 1.5ms	0.3ms 1ms		0.25ms	0.3ms 1ms		
	Turn off	Max. Typical	0.1ms	0.7ms	0.1ms	0.1ms	1ms	0.5ms 0.5ms	0.1ms		
	Time	Max.	0.5ms	1ms	1ms	1ms	3ms	1ms	1ms		
Dielectric Stre	ngth between I/C	<u> </u>		1,500 VAC		1	1	1	1		
Temperature	Operating		-40°C to 85°C	-20°C to 85°C	-40°C to 85°C						
	Storage		-55°C to 125°C	-40°C to 125°C			-55°C to 125°C	;			
Floating capac	city between I/O	terminals				0.8 pF					
Insulation resi	stance					1,000 ΜΩ					
Stick Quantity			75	75	75	75	75	75	75		
Reel Quantity	(Tape & Reel)		2,500	2,500	2,500	2,500	2,500	2,500	2,500		
Terminal arran	gement (6	2	3				
Mounting Hole	es					0.8	6 ~ 6.3				
Page			382	384	386	388	390	390	392		

Part Number (G3VM-)		-22CO	-61CR	-62C1	-352C	-354C	-354C1	-355C	-355CR	-402C		
Style			Through-h	ole Device -	· 8 pin								
								1					
Dimensions (L	x W x H mm)		9.66 x 6.4 >	3.65									
Туре			Special Purpose	General Pu	rpose								
Output	Load Voltage		20 V	60 V	60 V	350 V	350 V	350 V	350 V	350 V	400 V		
	Function		2a	1a	2a	2a	2b	2b	1c	1c	2a		
	Cont. load curre (connection A)	ent	150 mA	500 mA	500 mA	120 mA	150 mA	100 mA	100 mA	120 mA	120 mA		
	ON resistance	Typical	2 Ω	-	1 Ω	25 Ω	15 Ω	30 Ω	40 Ω	15 Ω	18 Ω		
		Max.	4 Ω	0.12 Ω	2 Ω	50 Ω	25 Ω	50 Ω	50 Ω	25 Ω	35 Ω		
Input	LED forward cu		ļ.,				50 mA						
	LED reverse vo			V	10.1			5 V	1	1	T		
	Trigger LED current	Typical Max.	1.15mA 5mA	- 5mA	1.6mA 3mA	1mA	1mA	1mA 3mA	1mA 3mA	1mA 3mA	1mA 3mA		
Switching	Turn on	Typical	-	- AMC	0.8ms	3mA 0.3ms	3mA 0.1ms	0.25ms	0.3ms	- SMA	- SMA		
Owitching	Time	1ms	5ms	2ms	1ms	1ms	0.25ms	1ms	1ms	1ms			
	Turn off	Max. Typical	-	-	0.1ms	0.1ms	1ms	0.5ms	0.15ms	-	-		
	Time	Max.	1ms	5ms	0.5ms	1ms	3ms	1ms	1ms	1ms	1ms		
Dielectric Stre	ngth between I/C) terminals	2,500 VAC	1,500 VAC		I	<u> </u>	2,500 VAC					
Temperature	Operating		-40°C to 85°C	-20°C to 85°C	20°C -40°C to 85°C								
	Storage		-55°C to 125°C										
Floating capac	city between I/O	terminals					0.8 pF						
Insulation resi	stance						1,000 MΩ						
Stick Quantity			50	50	50	50	50	50	50	50	50		
Reel Quantity	(Tape & Reel)		-	-	-	-	-	-	-	-	-		
Terminal arran	gement (8 7 6 5										
Mounting Hole	es		394 396 398 400 402 402 404 404 406						406				

OMRON

Part Number (G3VM-)		-22FO	-61FR	-62F1	-352F	-354F	-354F1	-355F	-355FR	-402F		
Style			Surface M	ount Device	– 8 pin								
							A CO	A.					
Dimensions (L	. x W x H mm)		9.66 x 6.4 >	3.65									
Туре			Special Purpose		General Pu	ırpose							
Output	Load Voltage		20 V	60 V	60 V	350 V	350 V	350 V	350 V	350 V	400 V		
	Function		2a	1a	2a	2a	2b	2b	1c	1c	2a		
	Cont. load curre (connection A)	ent	150 mA	500 mA	500 mA	120 mA	150 mA	100 mA	100 mA	120 mA	120 mA		
	ON resistance	Typical	2 Ω	-	1 Ω	25 Ω	15 Ω	30 Ω	40 Ω	15 Ω	18 Ω		
		Max.	4 Ω	0.12 Ω	2 Ω	50 Ω	25 Ω	50 Ω	50 Ω	25 Ω	35 Ω		
Input	LED forward cu	irrent (max)					50 mA						
	LED reverse vo	Itage (max)	6	V				5 V					
	Trigger LED	Typical	1.15mA	-	1.6mA	1mA	1mA	1mA	1mA	1mA	1mA		
	current	Max.	5mA	5mA	3mA	3mA	3mA	3mA	3mA	3mA	3mA		
Switching	Turn on	Typical	-	-	0.8ms	0.3ms	0.1ms	0.25ms	0.3ms	-	-		
	Time	Max.	1ms	5ms	2ms	1ms	1ms	0.5ms	1ms	1ms	1ms		
	Turn off	Typical	-	-	0.1ms	0.1ms	1ms	0.5ms	0.15ms	-	-		
	Time	Max.	1ms	5ms	0.5ms	1ms	3ms	1ms	1ms	1ms	1ms		
Dielectric Stre	ngth between I/C) terminals	2,500 VAC										
Temperature	Operating		-40°C										
	Storage		-55°C to 125°C										
Floating capac	city between I/O	terminals					0.8 pF						
Insulation resi	stance						1,000 M Ω	?					
Stick Quantity	1		50	50	50	50	50	50	50	50	50		
Reel Quantity	(Tape & Reel)		1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500		
Terminal arran	ngement		1,500 1,500										
Mounting Hole	es						2.54	13					
Page			394	396	398	400	402	402	404	404	406		

Part Number (G3VM-)		-62J1	-202J1	-352J	-354J	-354J1	-355J	-355JR	-402J			
Style			Small Outlin	ne Package -	8 pin								
					0		Pis						
Dimensions (L	x W x H mm)		9.4 x 4.4 x 2	.1									
Туре			General Pur	oose									
Output	Load Voltage		60 V	200 V	350 V	350 V	350 V	350 V	350 V	400 V			
	Function		2a	2a	2a	2b	2b	1c	1c	2a			
	Cont. load curre (connection A)	ent	400 mA	200 mA	110 mA	120 mA	90 mA	90 mA	90 mA	120 mA			
	ON resistance	Typical	1 Ω	5 Ω	35 Ω	15 Ω	30 Ω	40 Ω	15 Ω	17 Ω			
		Max.	2 Ω	8 Ω	50 Ω	25 Ω	50 Ω	50 Ω	25 Ω	35 Ω			
Input	LED forward cu	rrent (max)		1	'	50	mA	1	'				
	LED reverse vo	Itage (max)				5	V						
	Trigger LED	Typical	1.6mA	1mA	1mA	1mA	1mA	1mA	1mA	1mA			
	current	Max.	3mA	3mA	3mA	3mA	3mA	3mA	3mA	3mA			
Switching	Turn on	Typical	0.8ms	0.6ms	0.3ms	-	0.25ms	0.3ms	-	0.3ms			
	Time	Max.	2ms	1.5ms	1ms	1ms	0.5ms	1ms	1ms	1ms			
	Turn off Time	Typical	0.1ms	0.1ms	0.1ms	-	0.5ms	0.15ms	-	0.1ms			
	Time	Max.	0.5ms	1ms	1ms	3ms	1ms	1ms	3ms	1ms			
Dielectric Stre	ngth between I/C) terminals				1,50	VAC						
Temperature	Operating Storage		-40°C to 85°C -55°C to 125°C										
	city between I/O	terminals					s pF						
Insulation resi			50	Iso	150		0 MΩ	150	50	150			
Stick Quantity			50	50	50	2 500	50	2 500	50	3 500			
Reel Quantity Terminal arran			2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500			
					8		3						
Mounting Hole	es				_	2.54	7 0.8	6 ~ 6.3					
Page			408	410	412	414	414	416	416	418			

MOSFET Relay - G3VM-61A1/D1

Compact, General-purpose, Analog switching MOSFET Relay, with Dielectric Strength of 2.5 kVAC between I/O Using Optical Isolation

- Upgraded G3VM-61 A/D Series.
- Switches minute analog signals.
- Leakage current of 1 A max. when output relay is open.



The actual product is marked differently from the image

NEW 91

■Application Examples

- · Measurement devices
- · Security systems
- · Amusement machines

■ List of Models

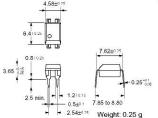
Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	60 VAC	G3VM-61A1	100	200
	Surface-mounting		G3VM-61D1		
	terminals		G3VM-61D1(TR)		1,500

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



Note: The actual product is marked differently from the image shown here.



G3VM-61D1



shown here.

Note: The actual product is marked differently from the image shown here.







■Terminal Arrangement/Internal Connections (Top View)

G3VM-61A1

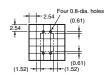


G3VM-61D1



■PCB Dimensions (Bottom View)

G3VM-61A1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-61D1



MOSFET Relay - G3VM-61A1/D1

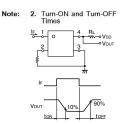
■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	Ir	50	mA	
	Repetitive peak LED forward current	I _{IP}	1	A	100 μs pulses, 100 pps
	LED forward current reduc- tion rate	VIN.C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Тј	125	°C	
Output	Output dielectric strength	Vorr	60	V	
	Continuous load current	I _O	500	mA .	
	ON current reduction rate	∆ l _{ON} /°C	-5.0	mA/°C	Ta≥25°C
	Connection temperature	T ₁	125	°C	
	c strength between input and See note 1.)	V _{I-O}	2,500	Vrms	AC for 1 min
Operatir	ng temperature	Ta	-40 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Solderin	g temperature (10 s)	-	260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _Γ = 10 mA
	Reverse current	I _R	-		10	μА	V _R = 5 V
	Capacity between terminals	C ₁	-	30	3775	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFI	-	1.6	3	mA	I _O = 500 mA
Output	Maximum resistance with output ON	R _{ON}	-	1	2	Ω	I _F = 5 mA, I _C = 500 mA
	Current leakage when the relay is open	I FAK	-		1.0	μΑ	V _{OH} = 60 V
Capacit	y between I/O terminals	CIO		0.8	200	pF	f = 1 MHz, Vs = 0 V
Insulatio	nsulation resistance		1,000		-12	МΩ	V _{I O} = 500 VDC, RoH ≤ 60%
10-muT	Furn-ON time		555.5	0.8	2.0	ms	I _F = 5 mA, R _I = 200 Ω,
Turn-OF	urn-OFF time			0.1	0.5	ms	V ₍₃₎₃ = 20 V (See note 2.



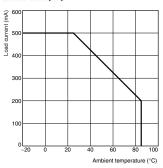
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		=	48	V
Operating LED forward current	I _F	5	7.5	25	mA
Continuous load current	I _O	5550	-	500	mA
Operating temperature	Ta	20	-	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-61A1(D1)



MOSFET Relay - G3VM-351A/D

New Standard Series with 350-V Load

- Upgraded G3VM-2 Series.
- Continuous load current of 120 mA.
- Dielectric strength of 2,500 Vrms between I/O.
- Operating time of 0.3 ms (typical)



■Application Examples

- · Measurement devices
 - · Security systems
- · Amusement machines

The actual product is marked differently from the image

■List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	350 VAC	G3VM-351A	100	200
	Surface-mounting		G3VM-351D]	
	terminals		G3VM-351D(TR)		1,500

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-351A



Note: The actual product is marked differently from the image shown here.



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G3VM-351D



Note: The actual product is marked different ly from the image shown here.





■ Terminal Arrangement/Internal Connections (Top View)

G3VM-351A



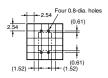
G3VM-351D



2.54 10.25

■PCB Dimensions (Bottom View)

G3VM-351A



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-351D



MOSFET Relay - G3VM-351A/D

■ Absolute Maximum Ratings (Ta = 25°C)

	item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	l _F	50	mA	
	Repetitive peak LED forward current	Ire	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	Λ I _L P°C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	VOFF	350	V	
	Continuous load current	Io .	120	mA	
	ON current reduction rate	Δ I _{ON} /°C	-1.2	mA/°C	Ta ≥ 25°C
	Connection temperature	T,	125	°C	
	ic strength between input and See note 1.)	V _{I-O}	2,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Solderii	ng temperature (10 s)		260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	Vr	1.0	1.15	1.3	V	I _C = 10 mA
	Reverse current	I _R			10	μА	V _R = 5 V
	Capacity between terminals	Cı	277	30	227	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFI	-	1	3	mA	I _O = 120 mA
Output	Maximum resistance with output ON	R _{ON}	-	25	35	Ω	I _F = 5 mA, I _O = 120 mA, t < 1 s
			-	35	50	Ω	I _F = 5 mA, I _C = 120 mA
	Current leakage when the relay is open	I _{I FAK}			1.0	μА	V _{OFF} = 350 V
Capacity	between I/O terminals	CIO	-	0.8	-	pF	f = 1 MHz, Vs = 0 V
Insulatio	n resistance	Rio	1,000			МΩ	V _{I O} = 500 VDC, RoH < 60%
Turn-ON time		tON	222	0.3	1.0	ms	I _F = 5 mA, R _I = 200 Ω,
Turn-OF	Turn-OFF time		***	0.1	1.0	ms	V ₍₎₍₎ = 20 V (See note 2.)

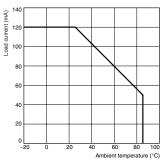
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	1000	120	280	V
Operating LED forward current	I _F	5	7.5	25	mA
Continuous load current	I _O		-	100	mA
Operating temperature	Ta	20		65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-351A(D)



MOSFET Relay - G3VM-353A/A1/D/D1

Analog-switching MOSFET Relay with SPST-NC (Single-pole, Singlethrow, Normally Closed) Contacts. General-purpose Series Added.

- Switches minute analog signals.
- Switching AC and DC.
- General-purpose series (high ON-resistance)

■ Application Examples

- · Electronic automatic exchange systems
- · Security systems
- · Datacom (modem) systems
- FA systems
- · Measurement devices



Note: The actual product is marked differently from the image shown here.

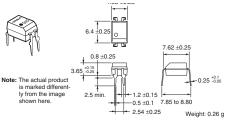
■ List of Models

Contact form	Terminals	Load Voltage	Model	Minimum packaging unit		
		(peak value)		Number per stick	Taping quantity	
SPST-NC	PCB terminals	350 VAC	G3VM-353A	100	-	
			G3VM-353A1			
	Surface-mounting	1	G3VM-353D			
	terminals		G3VM-353D1			
			G3VM-353D(TR)	_	1,500	
			G3VM-353D1(TR)			

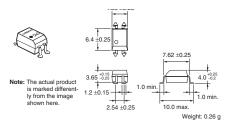
■ Dimensions

Note: All units are in millimetres unless otherwise indicated.

G3VM-353A/A1



G3VM-353D/D1



■ Terminal Arrangement/Internal Connections (Top View)

G3VM-353A/A1

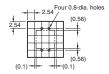


G3VM-353D/D1



■ PCB Dimensions (Bottom View)

G3VM-353A/A1



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-353D/D1



MOSFET Relay - G3VM-353A/A1/D/D1

■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I _F	50	mA	
	Repetitive peak LED forward cur- rent	Ipp	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	Δl _F /°C	-0.5	mA/°C	Ta≥25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	TJ	125	°C	
Output	Output dielectric strength	V _{OFF}	350	V	
	Continuous load current	I _O	150 (100)	mA	
	ON current reduction rate	ΔI _{ON} /°C	-1.5 (-1)	mA/°C	Ta≥25°C
	Connection temperature	TJ	125	°C	
Dielectric (See note	strength between input and output	V _{I-O}	2,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to 85	°C	With no icing or condensation
Storage t	emperature	T _{stg}	-55 to 125	°C	With no icing or condensation
Soldering	Soldering temperature (10 s)		260	°C	10 s

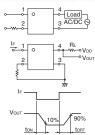
Note 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

Values inside parentheses () are for G3VM-353A1/D1

■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions	
Input	LED forward voltage	V _F	1.0	1.15	1.3	V	$I_F = 10 \text{ mA}$	
	Reverse current	I _A	1-1	000	10	μА	V _R = 5 V	
	Capacity between terminals	CT	(emp)	30		pF	V = 0, f = 1 MHz	
	Trigger LED forward current	I _{FT}	(24)	1	3	mA	I _{OFF} = 10 μA	
Output	Maximum resistance with output ON	R _{ON}		15 (30)	25 (50)	Ω	I _O = 150 mA	
	Current leakage when the relay is open	LEAK		-	1.0	μА	I _F = 5 mA, V _{OFF} = 350 V	
Capacit	y between I/O terminals	C _{I-O}		0.8	***	pF	1 = 1 MHz, V _s = 0 V	
Insulation resistance		R _{i-♦}	1,000			МΩ	V _{I-Q} = 500 V DC, R _{OH} ≤ 60%	
Turn-ON time		ION	++4	0.1 (0.25)	1.0 (0.5)	ms	$I_F = 5 \text{ mA}, R_L = 200 \Omega,$	
Turn-Of	Turn-OFF time		OFF time 10FF		1.0 (0.5)	3.0 (1)	ms	V _{DD} = 20 V (See note 2.)

Note 2. Turn-ON and Turn-OFF Times



Values inside parentheses () are for G3VM-353A1/D1.

■ Recommended Operating Conditions

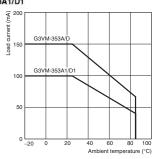
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}			280	V
Operating LED forward current	I _F	5		25	mA
Continuous load current	I _O	***		150 (100)	mA
Operating temperature	Ta	-20		65	°C

Values inside parentheses () are for G3VM-353A1/D1.

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-353A/D G3VM-353A1/D1



CAT. No. J912-E2-01

MOSFET Relay - G3VM-401A/D

Expanded Range of Analogswitching MOSFET Relays with 400-V Load Voltage

- A 4-pin Relay now available in the 400-V load voltage series.
- Continuous load current of 120 mA.
- Dielectric strength of 2,500 Vrms between I/O.





The actual product is marked differently from the image

■ Application Examples

- · Measurement devices
- · Security systems
- · Amusement machines

■List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape	
SPST-NO PCB terminals 400 VAC		400 VAC	G3VM-401A	100		
	Surface-mounting	1	G3VM-401D	1		
	terminals		G3VM-401D(TR)	1111 8	1,500	

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.





Note: The actual product is marked differently from the image shown here.







G3VM-401D

Note:

shown here











■ Terminal Arrangement/Internal Connections (Top View)

G3VM-401A

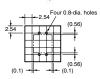


G3VM-401D



■PCB Dimensions (Bottom View)

G3VM-401A



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-401D



MOSFET Relay - G3VM-401A/D

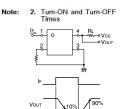
■ Absolute Maximum Ratings (Ta = 25°C)

					FI		
	Item	Symbol	Rating	Unit	Measurement Conditions		
Input	LED forward current	I _E	50	mA			
	Repetitive peak LED forward current	ILb	1	А	100 μs pulses, 100 pps		
	LED forward current reduction rate	A IµFC	-0.5	mA/°C	Ta > 25°C		
	LED reverse voltage	VR	5	V			
	Connection temperature	Tj	125	°C			
Output	Output dielectric strength	Vorr	400	V			
	Continuous load current	I _O	120	mA			
	ON current reduction rate	ΔI _{ON} /°C	-1.2	mA/°C	Ta ≥ 25°C		
	Connection temperature	T _I	125	°C			
	ic strength between input and See note 1.)	V _{I-O}	2,500	Vrms	AC for 1 min		
Operating temperature		Ta	-40 to +85	°C	With no icing or condensation		
Storage temperature		T _{stg}	-55 to +125	°C	With no icing or condensation		
Solderir	ng temperature (10 s)	220	260	°C	10 s		

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	٧r	1.0	1.15	1.3	V	I _C = 10 mA
	Reverse current	I _R			10	μА	V _R = 5 V
	Capacity between terminals	C ₁		30	-	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFF		1	3	mA	I _O = 120 mA
Output	Maximum resistance with output ON	R _{ON}		18	35	Ω	I _F = 5 mA, I _C = 120 mA
	Current leakage when the relay is open	I _{I FAK}		-	1.0	μА	V _{OFF} = 400 V
Capacity	between I/O terminals	CIO	3556	0.8		pF	f = 1 MHz, Vs = 0 V
Insulation resistance		Rio	1,000		5550	МΩ	V _{I O} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON			1.0	ms	$I_{F} = 5 \text{ mA}, R_{I} = 200 \Omega,$
Turn-OFF time		tOFF		-	1.0	ms	V _{[3])} = 20 V (See note 2.)



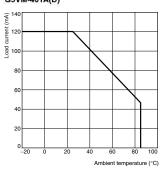
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}			320	V
Operating LED forward current	I _F	5	7.5	25	mA
Continuous load current	l _O			100	mA.
Operating temperature	Ta	20		65	"C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-401A(D)



MOSFET Relay - G3VM-61G1

New MOSFET Relay Designed for Switching Minute Signals and Analog Signals

- Upgraded G3VM-S1 Series.
- Continuous load current of 400 mA.
- Dielectric strength of 1,500 Vrms between I/O.





Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Broadband systems
- · Data loggers
- · Measurement devices
- · Amusement machines

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	60 VAC	G3VM-61G1	100	
Contract of the Contract of th	terminals	3	G3VM-61G1(TR)		2,500

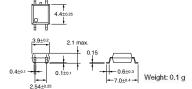
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-61G1



Note: The actual product is marked differently from the image shown here.



■ Terminal Arrangement/Internal Connections (Top View)

G3VM-61G1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-61G1



MOSFET Relay - G3VM-61G1

■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	J _F	50	mA	
	Repetitive peak LED forward current	IFP	1	Α	100 μs pulses, 100 pps
	LED forward current reduction rate	Λ I _L P°C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	60	V	
	Continuous load current	lo .	400	mA	
	ON current reduction rate	Δ I _{ON} /°C	-4.0	mA/°C	Ta ≥ 25°C
	Connection temperature	T	125	°C	
	ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Solderii	ng temperature (10 s)		260	°C	10 s

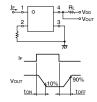
Note:

 The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

ltem		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	٧r	1.0	1.15	1.3	V	I _C = 10 mA
	Reverse current	I _R		-	10	μА	V _R = 5 V
	Capacity between terminals	Cı		30		pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFI		1.6	3	mA	I _O = 400 mA
Output	Maximum resistance with output ON	R _{ON}	-	1	2	Ω	I _F = 5 mA, I _C = 400 mA
	Current leakage when the relay is open	I _{I FAK}	-	=	1.0	μА	V _{OFF} = 60 V
Capacity	y between I/O terminals	CIO		0.8	-	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		Rio	1,000		_	МΩ	V _{I O} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON		0.8	2.0	ms	I _F = 5 mA, R _I = 200 Ω,
Turn-OF	Turn-OFF time			0.1	0.5	ms	V _{I)I)} = 20 V (See note 2.

Note: 2. Turn-ON and Turn-OFF Times



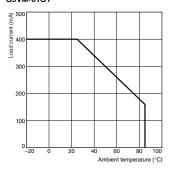
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		_	48	V
Operating LED forward current	I _E .	5	7.5	25	mA
Continuous load current	J _O	1	-	400	mA
Operating temperature	T _a	20		65	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-61G1



MOSFET Relay - G3VM-81G1

New Relay Incorporating a MOSFET Optically Coupled with an Infrared LED

Has a 4-pin SOP Package and 80-V Load Voltage

- Continuous load current of 350 mA.
- Dielectric strength of 1,500 Vrms between I/O.





Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Broadband systems
- · Measurement devices
- Data loggers
- · Amusement machines

■List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	80 VAC	G3VM-81G1	100	
	terminals		G3VM-81G1(TR)		2,500

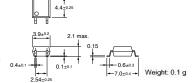
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-81G1



Note: The actual product is marked differently from the image shown here.



■Terminal Arrangement/Internal Connections (Top View)

G3VM-81G1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-81G1



MOSFET Relay - G3VM-81G1

■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I _F	50	mA.	
	Repetitive peak LED forward current	IFP	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	A I _F /°C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	80	V	
	Continuous load current	lo .	350	mA	
	ON current reduction rate	∆ l _{ON} /°C	-3.5	mA/°C	Ta ≥ 25°C
	Connection temperature	T _i	125	°C	
	ric strength between input and (See note 1.)	V _{I-()}	1,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to +85	°C	With no icing or condensation
Storage	e temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Solderii	ng temperature (10 s)		260	°C	10 s

Note:

 The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	٧r	1.0	1.15	1.3	V.	I _Γ = 10 mA
	Reverse current	I _R			10	μА	V _R = 5 V
	Capacity between terminals	Cı		15	-	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{F1}		1.0	4.0	mA	I _O = 350 mA
Output	Maximum resistance with output ON	R _{ON}	5574	1.0	1.2	Ω	I _F = 5 mA, I _O = 350 mA
	Current leakage when the relay is open	I _{I FAK}	-	0.2	1.0	пA	V _{OH} = 30 V, Ta = 50°C
Capacity	between I/O terminals	C _{I O}	220	0.8	_	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		Rio	1,000	-	-	МΩ	V _{I O} = 500 VDC. RoH ≤ 60%
Turn-ON time		tON	1.000	0.3	0.5	ms	$I_{F} = 5 \text{ mA}, R_{I} = 200 \Omega,$
Turn-OF	Turn-OFF time			0.3	0.5	ms	V ₁₃₁₃ = 20 V (See note 2.)

Note: 2. Turn-ON and Turn-OFF Times

90%

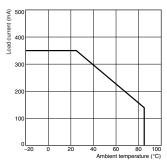
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		-	64	V
Operating LED forward current	I _F	5	North I	30	mA
Continuous load current	I _O	57774		350	mA
Operating temperature	Ta	25		60	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-81G1



MOSFET Relay - G3VM-201G

Slim, 2.1-mm High MOSFET Relay with Miniature, Flat, 4-pin SOP Package Load Voltage

- New models with 4-pin SOP package now available in the 200-V load voltage series.
- Leakage current of 0.01µA max. when output relay is open.
- Dielectric strength of 1,500 Vrms between I/O.



Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Broadband systems
- · Measurement devices
- · Data loggers
- · Amusement machines

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	200 VAC	G3VM-201G	100	<u>222</u> 5
	terminals		G3VM-201G(TR)		2,500

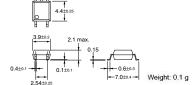
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-201G



Note: The actual product is marked differently from the image shown here.



■ Terminal Arrangement/Internal Connections (Top View)

G3VM-201G



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-201G



MOSFET Relay - G3VM-201G

■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	1 _F	50	mA	
	Repetitive peak LED forward current	IFP	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	VI™C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	200	V	
	Continuous load current	I _O	50	mA.	
	ON current reduction rate	∆ I _{ON} /°C	-1.2	mA/°C	Ta≥25°C
	Connection temperature	T,	125	°C	
	ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operati	ng temperature	Ta	-40 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-55 to +100	°C	With no icing or condensation
Solderin	ng temperature (10 s)	-	260	°C	10 s

Note:

 The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	Vr	1.0	1.15	1.3	V	I _C = 10 mA
	Reverse current	I _R	-		10	μA	V _R = 5 V
	Capacity between terminals	C ₁	1221	30		pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{ET}	-	1	3	mA	I _O = 50 mA
Output	Maximum resistance with output ON	R _{ON}	1000	30	50	Ω	I _F = 5 mA, I _O = 50 mA
	Current leakage when the relay is open	I _{I FAK}		-	0.01	μА	V _{OH} = 200 V, Ta = 25°C
Capacit	y between I/O terminals	CIO	1922	0.8	-	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		Rio	1,000	-	-	МΩ	V _{I O} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON	ilean	0.04	0.1	ms	$I_F = 10 \text{ mA}, R_I = 200 \Omega,$
Turn-OF	Turn-OFF time		1,222	0.1	0.2	ms	V _{I)I)} = 10 V (See note 2.

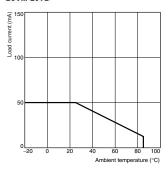
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	. 	10001	160	V
Operating LED forward current	I _F	5	7.5	15	mA
Continuous load current	I _O	522		40	mA
Operating temperature	Ta	25	VI21	60	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-201G



MOSFET Relay - G3VM-351G

Slim, 2.1-mm High Relay Incorporating a MOSFET Optically Coupled with an Infrared LED in a Miniature, Flat SOP

- Upgraded G3VM-S2 Series.
- Continuous load current of 110 mA.
- Dielectric strength of 1,500 Vrms between I/O.



Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Broadband systems
- · Measurement devices
- · Data loggers
- · Amusement machines

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	350 VAC	G3VM-351G	100	
	terminals		G3VM-351G(TR)		2,500

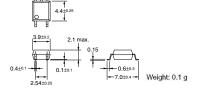
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-351G



Note: The actual product is marked differently from the image shown here.



■ Terminal Arrangement/Internal Connections (Top View)

G3VM-351G



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-351G



MOSFET Relay - G3VM-351G

■ Absolute Maximum Ratings (Ta = 25°C)

	item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I _F	50	mA	
	Repetitive peak LED forward current	IFP	1	А	100 μs pulses, 100 pps
	LED forward current reduction rate	A I _p P°C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	350	V	
	Continuous load current	lo.	110	mA.	
	ON current reduction rate	Δ I _{ON} /°C	-1.1	mA/°C	Ta≥25°C
	Connection temperature	T _i	125	"C	
Dielectric strength between input and output (See note 1.)		V _{I-O}	1,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to +85	°C	With no icing or condensation
Storage	e temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Solderii	ng temperature (10 s)		260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _Γ = 10 mA
	Reverse current	J _R			10	μА	V _R = 5 V
	Capacity between terminals	Cı		30	-	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{FT}		1	3	mA .	I _O = 100 mA
Output	Maximum resistance with output ON	R _{ON}	. 	25	35	Ω	I _F = 5 mA, I _O = 110 mA, t < 1 s
			-	35	50	Ω	I _O = 110 mA, t < 1 s I _F = 5 mA, I _O = 110 mA
	Current leakage when the relay is open	I _{I FAK}	_	-	1.0	μΑ	V _{OFF} = 350 V
Capacity	/ between I/O terminals	Cio		0.8	-	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		Rio	1,000		-	МΩ	V _{I O} = 500 VDC, RoH < 60%
Turn-ON time		tON		0.3	1.0	ms	I _F = 5 mA, R _I = 200 Ω,
Turn-OF	F time	tOFF	Gazz.	0.1	1.0	ms	V ₍₎₍₎ = 20 V (See note 2.)

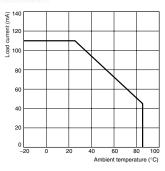
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	-	====	280	V
Operating LED forward current	I _F	5	7.5	25	mA
Continuous load current	lo	14 <u>14</u> 1	222	100	mA
Operating temperature	Ta	20	200	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-351G



MOSFET Relay - G3VM-351GL

MOSFET Relay with 350-V Load Voltage and SOP Current Limit

- G3VM-351G Current Limit Relays.
- Limit current of 150 to 300 mA.

Note: The actual product is marked differently from the image shown here.

■ Application Examples

- · Electronic automatic exchange systems
- Multi-functional telephones
- · Cordless telephones
- Measurement devices

■ List of Models

Contact form	Terminals	Load Voltage	Model	Current	Minimum pa	ckaging unit
		(peak value)		limit	Number per stick	Taping quantity
SPST-NO	Surface-mounting	350 VAC	G3VM-351GL	Yes	100	-
	terminals		G3VM-3551GL(TR)		_	2,500

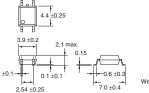
■ Dimensions

Note: All units are in millimeters unless otherwise indicated

G3VM-351GL



Note: The actual product is marked differently from the image shown here.



Weight: 0.1 g

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-351GL



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-351GL



MOSFET Relay - G3VM-351GL

■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	l _E	50	mA	
	Repetitive peak LED forward current	IFP	1	A	100 µs pulses, 100 pps
	LED forward current reduction rate	Δlg/°C	-0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	VR	6	V	
	Connection temperature	TJ	125	°C	
Output	Output dielectric strength	VOFF	350	V	
	Continuous load current	10	120	mA.	
	ON current reduction rate	ΔI _{CN} /°C	-12	mA/°C	Ta ≥ 25°C
	Connection temperature	Tj	125	°C	
Dielectric s	trength between input and output (See note 1.)	V _{I-O}	1,500	Vms	AC for 1 min
Operating temperature		Ta	-40 to 85	°C	With no icing or condensation
Storage temperature		T _{stg}	-55 to 125	°C	With no icing or condensation
Soldering temperature (10 s)		***	260	9C	10 s

Note 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions	
Input	LED forward voltage	VF	1.0	1.15	1.3	V	I _F = 10 mA	Note 2. Turn-ON and Turn-OFF Times
	Reverse current	I _R	***	***	10	μА	V _R = 6 V	1,
	Capacity between terminals	CT		30	350	pF	V = 0, f = 1 MHz	load Load
	Trigger LED torward current	IFT	0.00	1	3	mA	I _O = 120 mA	2 3 AC/DC ⊗
Output	Maximum resistance with output ON	R _{ON}		15	35	Ω	I _F = 5 mA, I _O = 120 mA	IF 1 0 4 RL VDD
	Current leakage when the relay is open	LEAK		275	1.0	μА	V _{OFF} = 350 V	N N N N N N N N N N N N N N N N N N N
Limit cui	rent	LIM	150		300	mA	I _F = 5 mA, V _{DD} = 5 V, t = 5 ms	3 3
Capacity	between I/O terminals	010	***	0.8	+++	pF	f = 1 MHz, V ₅ = 0 V	<i></i>
Insulatio	n resistance	Ri-O	1,000			MΩ	V _{I-O} = 500 V DC, R _{QH} ≤ 60%	lf
Tum-Oh	l time	ION		0.3	1.0	ms	$I_F = 5$ mA, $R_L = 200$ Ω,	Vout
Tum-OF	Filme	tOFF		0.1	1.0	ms	V _{DD} = 20 V (See note 2.)	10% 90% ton toff

■ Recommended Operating Conditions

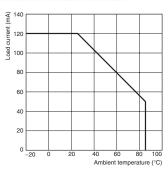
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	44.5		280	V
Operating LED forward current	l _F	5	7.5	25	mA
Continuous load current	lo	4-		100	mA
Operating temperature	Ta	-20		65	°C

■ Engineering Data

Load Current vs. Ambient Temperature

G3VM-351GL



MOSFET Relay - G3VM-353G/G1

Analog-switching MOSFET Relay with SPST-NC (Single-pole, Single-throw, Normally Closed) Contacts. General-purpose Series Added.

- New models with SPST-NC contacts and a 4pin SOP package now included in 350-V load voltage series.
- Continuous load current of 120 mA (90 mA).
- Dielectric strength of 1,500 Vrms between I/O.
- General-purpose series (high ON-resistance) added.



NEW

Note: The actual product is marked differently from the image shown here.

■ Application Examples

- Broadband systems
- Measurement devices
- · Data loggers
- · Amusement machines

■ List of Models

Contact form	Terminals	Load Voltage	Model	Minimum packaging unit		
		(peak value)		Number per stick	Taping quantity	
SPST-NC	PCB terminals	350 VAC	G3VM-353A	100	_	
Surface-			G3VM-353A1			
	Surface-mounting		G3VM-353D			
	terminals		G3VM-353D1			
			G3VM-353D(TR)	_	1,500	
			G3VM-353D1(TR)	1		

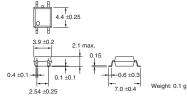
Dimensions

Note: All units are in millimeters unless otherwise indicated

G3VM-353G/G1



Note: The actual product is marked differently from the image shown here.



Terminal Arrangement/Internal Connections (Top View)

G3VM-353G/G1



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-353G/G1



MOSFET Relay - G3VM-353G/G1

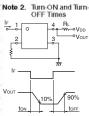
Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions	
Input	LED forward current I _F		50	mA		
	Repetitive peak LED forward current	Ipp	1	A	100 µs pulses, 100 pps	
	LED forward current reduction rate	ΔI _F /°C	-0.5	mA/°C	Ta ≥ 25°C	
	LED reverse voltage	VR	5	V		
	Connection temperature	TJ	125	°C		
Output	Output dielectric strength	V _{OFF}	350	V		
	Continuous load current	10	120 (90)	mA		
	ON current reduction rate	ΔI _{ON} /°C	-1.2 (-0.9)	mA/°C	Ta≥25°C	
Dielectric note 1.)	c strength between input and output (See	V _{I-O}	1,500	Vrms	AC for 1 min	
Operating temperature		Ta	-40 to 85	°C	With no icing or condensation	
Storage temperature		T _{stg}	-55 to 125	°C	With no icing or condensation	
Soldering temperature (10 s)		***	260	°C	10 s	

Note 1. The dielectric strength be-lween the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	ltem	Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions	
Input	LED forward voltage	VF	1.0	1.15	1.3	V	I _F = 10 mA	
	Reverse current	IR	***		10	μА	V _R = 5 V	
	Capacity between terminals	CT		30		pF	V = 0, 1 = 1 MHz	
	Trigger LED forward current	I _{FG}	555	1	3	mA	I _{OFF} = 10 μA	
Output	Maximum resistance with output ON	R _{ON}		15 (30)	25 (50)	Ω	I _O = 120 mA	
	Current leakage when the re- lay is open	I _{LEAK}	***	***	1.0	μА	V _{OFF} = 350 V, I _F = 5 mA	
Capacity	y between I/O terminals	C _{1-O}	***	0.8		pF	f = 1 MHz, V ₈ = 0 V	
Insulation resistance		R _{I-O}	1,000			MΩ	V _{I-O} = 500 V DC, R _{OH} ≤ 60%	
Tum-ON	l time	tON	***	(0.25)	1.0 (1)	ms	$I_F = 5 \text{ mA}, H_L = 200 \Omega,$ $V_{DD} = 20 \text{ V (See note 2.)}$	
Turn-OF	F time	10FF		(0.5)	3.0 (1)	ms		



■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

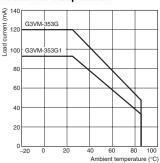
Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	***	***	280	٧
Operating LED forward current	IF.	5		25	mA
Continuous load current	Io.			120 (90)	mA
Operating temperature	Ta	-20		65	°C

Values inside parentheses () are for G3VM-353G1.

■ Engineering Data

Load Current vs. Ambient Temperature

G3VM-353G/G1



Values inside parentheses () are for G3VM-353G1.

Values inside parentheses () are for G3VM-353G1.

MOSFET Relay - G3VM-401G

Expanded Range of Analog-Switching MOSFET Relays in 400-V Load Voltage Series

- New models with a 4-pin SOP package now included in the 400-V load voltage series.
- Continuous load current of 120 mA.
- Dielectric strength of 1,500 Vrms between I/O.





Note: The actual product is marked differently from the image

■Application Examples

- · Broadband systems
- Measurement devices
- · Data loggers
- · Amusement machines

■List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	400 VAC	G3VM-401G	100	
	terminals		G3VM-401G(TR)		2,500

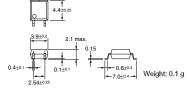
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-401G



Note: The actual product is marked differently from the image shown here.



■ Terminal Arrangement/Internal Connections (Top View)

G3VM-401G



■Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-401G



MOSFET Relay - G3VM-401G

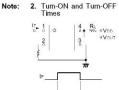
■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	l _F	50	mA	
	Repetitive peak LED forward current	IFP	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	ΛIμ°C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	400	V	
	Continuous load current	lo .	120	mA	
	ON current reduction rate	ΔI _{ON} /°C	-1.2	mA/°C	Ta ≥ 25°C
Dielectr output (ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operati	ng temperature	Ta	40 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Solderir	ng temperature (10 s)		260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	ltem	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _Γ = 10 mA
	Reverse current	IR		-	10	μА	V _R = 5 V
	Capacity between terminals	Cı		30	-	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFI	1777 C	1	3	mA	I _O = 120 mA
Output	Maximum resistance with output ON	R _{ON}	(mgg)	17	35	Ω	I _F = 5 mA, I _O = 120 mA
	Current leakage when the relay is open	I _{I FAK}			1.0	μА	V ₍₎₊₊ = 400 V
Capacity	y between I/O terminals	CIO		0.8	=	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		Rio	1,000	_		МΩ	V _{I O} = 500 VDC, RoH < 60%
Turn-ON time		tON		0.3	1	ms	$I_{F} = 5 \text{ mA}, R_{I} = 200 \Omega,$
Turn-OF	F time	tOFF		0.1	1	ms	V ₍₃₎₍₎ = 20 V (See note 2.



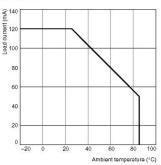
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	(320	٧
Operating LED forward current	I _E .	5	7.5	25	mA
Continuous load current	lo			120	mA
Operating temperature	T _a	20		65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-401G



MOSFET Relay - G3VM-21GR

New MOSFET Relay with Low Output Capacitance and ON Resistance (CxR = $5pF^{\bullet} \Omega$) in a 20-V Load Voltage Model

- Output capacitance of 1 pF (typical) allows high-frequency applications.
- Leakage current of 1.0 nA max. when output relay is open.



Note: The actual product is marked differently from the image shown here.

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	20 VAC	G3VM-21GR	100	
	terminals		G3VM-21GR(TR)		2,500

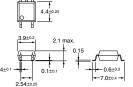
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-21GR



Note: The actual product is marked differently from the image shown here.



Weight: 0.1

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-21GR



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-21GR



MOSFET Relay - G3VM-21GR

■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	l _F	50	mA	
	Repetitive peak LED forward current	ITP	1	A	100 μs pulses, 100 pps
	LED forward current reduc- tion rate	A I⊬°C	0.5	mA/°C	Ta > 25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	20	V	
	Continuous load current	I _O	160	mA	
	ON current reduction rate	Δ I _{ON} /°C	-1.6	mA/°C	Ta ≥ 25°C
	Connection temperature	T _t	125	°C	
Dielectr output (ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operati	ng temperature	Ta	-20 to +85	°C	With no icing or condensation
Storage temperature		T _{stg}	-40 to +125	°C	With no icing or condensation
Soldering temperature (10 s)			260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _C = 10 mA
	Reverse current	I _R	999		10	μА	V _R = 5 V
	Capacity between terminals	C ₁	-	15		pF	V = 0, f = 1 MHz
	Trigger LED forward current	1 _{F1}	200		4	mA	I _O = 100 mA
Output	Maximum resistance with output ON	R _{ON}	_	5	8	Ω	I _F = 5 mA, I _O = 160 mA, t < 1 s
	Current leakage when the relay is open	I FAK	-	-	1.0	nΑ	V _{OH} = 20 V, Ta = 50°C
	Capacity between terminals	COLL	-	1.0	2.5	pF	V = 0, f = 100 MHz, t < 1 s
Capacit	y between I/O terminals	CITO	_	0.8		pF	f = 1 MHz, Vs = 0 V
Insulation resistance		R _{I-O}	1,000		12227	MΩ	V _{I-O} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON	275	977	0.5	ms	I _Γ = 10 mA, R _L = 200 Ω,
Tum-OF	F time	tOFF	-	-	0.5	ms	V _{DD} = 20 V (See note 2.)

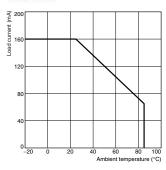
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	-	les.	20	V
Operating LED forward current	l _F	7	1000	30	mA
Continuous load current	lò	1202		160	mA
Operating temperature	Ta	25	-	60	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-21GR



New MOSFET Relay with Low Output Capacitance and ON Resistance (CxR = $5pF \cdot \Omega$) in a 20-V Load Voltage Model

- ON resistance of 1 W (typical) suppresses output signal attenuation.
- Leakage current of 1.0 nA max. when output relay is open.



Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Semiconductor inspection tools
- Measurement devices
- · Broadband systems
- · Data loggers

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	20 VAC	G3VM-21GR1	100	
	terminals		G3VM-21GR1(TR)		2,500

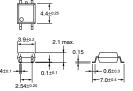
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-21GR1



Note: The actual product is marked differently from the image shown here.



Weight: 0.1

■Terminal Arrangement/Internal Connections (Top View)

G3VM-21GR1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-21GR1



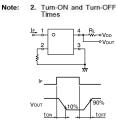
■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions	
Input	LED forward current	l _r	I _r 50	mA		
	Repetitive peak LED forward current	IFP	1	А	100 μs pulses, 100 pps	
	LED forward current reduction rate	V I™.C	0.5	mA/°C	Ta > 25°C	
	LED reverse voltage	V _R	5	V		
	Connection temperature	Tj	125	°C		
Output	Output dielectric strength	Vorr	20	٧		
	Continuous load current	ю	300	mA		
	ON current reduction rate	Δ I _{ON} /°C	-3.0	mA/°C	Ta ≥ 25°C	
	Connection temperature	T,	125	°C		
	ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min	
Operati	ng temperature	Ta	-20 to +85	°C	With no icing or condensation	
Storage	temperature	T _{stg}	-55 to +125	°C	With no icing or condensation	
Solderii	ng temperature (10 s)		260	°C	10 s	

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	ltem	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	Vr	1.0	1.15	1.3	V	I _C = 10 mA
	Reverse current	I _R	(555)	E85	10	μА	V _R = 5 V
	Capacity between terminals	C ₁		15	772	pF	V = 0, f = 1 MHz
	Trigger LED forward current	Je i	2227	222	4	mA	I _O = 100 mA
Output	Maximum resistance with output ON	R _{ON}	-	1	1.5	Ω	I _F = 5 mA, I _O = 300 mA, t < 1 s
	Current leakage when the relay is open	I _{I FAK}	-		1.0	nA	V _{OFF} = 20 V Ta = 50°C
	Capacity between terminals	COFF	(2/2)	5.0	12.0	pF	V = 0, f = 100 MHz, t < 1 s
Capacit	y between I/O terminals	CI-O	1000	0.8	***	pF	f = 1 MHz, Vs = 0 V
Insulatio	on resistance	R _{I-O}	1,000	1500	V 23	MΩ	V _{I-O} = 500 VDC, RoH < 60%
Tum-ON time		tON			0.5	ms	I _F = 10 mA, R _I = 200 Ω,
Tum-OF	F time	tOFF	(777.0)	777	0.5	ms	V _{DD} = 20 V (See note 2.)



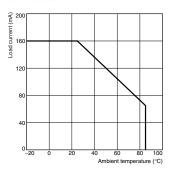
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}			20	V.
Operating LED forward current	I _F	7	, (155 0	30	mA
Continuous load current	I _O	-	l seek	300	mA
Operating temperature	Ta	25		60	"C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-21GR1



New MOSFET Relay with Low Output Capacitance and ON Resistance (CxR = 10pF• Ω) in a 40-V Load Voltage Model

- ON resistance of 1 Ω (typical) suppresses output signal attenuation.
- Leakage current of 1.0 nA max. when output relay is open.



Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Semiconductor inspection tools
- Measurement devices
- · Broadband systems
- · Data loggers

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	40 VAC	G3VM-41GR5	100	2227
	terminals		G3VM-41GR5(TR)		2,500

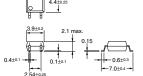
■ Dimensions

Note: All units are in millimeters unless otherwise indicated





Note: The actual product is marked different ly from the image shown here.



Weight: 0.1 g

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-41GR5



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-41GR5



■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	l _F	50	mA	
	Repetitive peak LED forward current	IFP	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	A I _L /°C	0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	40	V	
	Continuous load current	lo .	300	mA	
	ON current reduction rate	Δ I _{ON} /°C	-3.0	mA/°C	Ta ≥ 25°C
	Connection temperature	T _i	125	°C	
	ric strength between input and (See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operati	ing temperature	Ta	-20 to +85	°C	With no icing or condensation
Storage	e temperature	T _{stg}	-40 to +125	°C	With no icing or condensation
Solderii	ng temperature (10 s)		260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _F = 10 mA
	Reverse current	I _R	-		10	μА	V _R = 5 V
	Capacity between ter- minals	CI	-	15		pF	V = 0, f = 1 MHz
	Trigger LED forward current	П	-	100	4	mA	I _O = 100 mA
Output	Maximum resistance with output ON	R _{ON}	-	1.0	1.5	Ω	I _C = 5 mA, I _O = 300 mA, t < 1 s
	Current leakage when the relay is open	ILEAK		=	1.0	nA	V _{OFF} = 30 V. Ta = 50°C
	Capacity between ter- minals	COLL	(2.5)	10.0	14.0	pF	V = 0, f = 100 MHz, t < 1 s
Capacit	y between I/O terminals	CIO	(5572)	0.8	1000	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		R _{I-O}	1,000	-		МΩ	V _{I-O} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON			0.5	ms	I _Γ = 10 mA, R _L = 200 Ω
Turn-OF	F time	tOFF			0.5	ms	V _{DD} = 20 V (See note 2.)

Vout

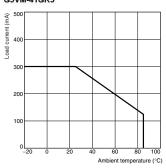
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		-	32	V
Operating LED forward current	I _F	10	-	30	mA
Continuous load current	lo	1350	-	300	mA
Operating temperature	Ta	25	-	60	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-41GR5



New MOSFET Relay with Low Output Capacitance and ON Resistance (CxR = $10pF \cdot \Omega$) in a 40-V Load Voltage Model

- Output capacitance of 1 pF (typical) allows high-frequency applications.
- Leakage current of 1.0 nA max. when output relay is open.



Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Semiconductor inspection tools
- · Measurement devices
- · Broadband systems
- · Data loggers

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	40 VAC	G3VM-41GR6	100	
	terminals		G3VM-41GR6(TR)		2,500

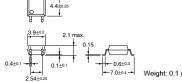
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-41GR6



Note: The actual product is marked differently from the image shown here.



■ Terminal Arrangement/Internal Connections (Top View)

G3VM-41GR6



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-41GR6



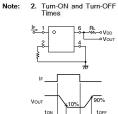
■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current I _F		50	mA	
	Repetitive peak LED forward current	Irp	1	А	100 μs pulses, 100 pps
	LED forward current reduction rate	A I _L PC	0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	40	V	
	Continuous load current	lo	120	mA	
	ON current reduction rate	∆ I _{ON} /°C	-1.2	mA/°C	Ta ≥ 25°C
	Connection temperature	T _i	125	"C	1
Dielectr output (ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operati	ng temperature	Ta	-20 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Solderii	Soldering temperature (10 s)		260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VF	1.0	1.15	1.3	V	I _F = 10 mA
	Reverse current	I _R	-	-		μА	V _R = 5 V
	Capacity between terminals	C ₁	-	15		pF	V = 0, f = 1 MHz
	Trigger LED forward current	J _{E1}	-	-	4	mA	I _O = 100 mA
Output	Maximum resistance with output ON	R _{ON}	em.	10	15	Ω	I _F = 5 mA, I _O = 120 mA, t < 1 s
	Current leakage when the relay is open	II HAK	==		1.0	пА	V _{OH} = 30 V, Ta = 50°C
	Capacity between terminals	COLL	_	1.0	2.0	pF	V = 0, f = 100 MHz, t < 1 s
Capacity	y between I/O terminals	C _{I-O}		0.8	-	pF	f = 1 MHz, Vs = 0 V
Insulatio	on resistance	R _{I-O}	1,000	-	==0	МΩ	V _{I-()} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON	-	-	0.5	ms	I_{Γ} = 10 mA, R_{L} = 200 $Ω$,
Tum-OF	F time	tOFF			0.5	ms	V _{DD} = 20 V (See note 2.)



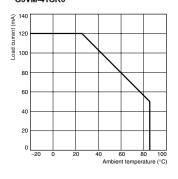
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}			32	V
Operating LED forward current	I _F	10		30	mA
Continuous load current	lo			120	mA
Operating temperature	Ta	25	10000 to 10000	60	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-41GR6



New MOSFET Relay Designed for Switching Minute Signals and Analog Signals

- Upgraded G3VM-61G1 Series.
- Continuous load current of 1000 mA.
- Dielectric strength of 1,500 Vrms between I/O.

■ Application Examples

- · Broadband systems
- Data loggers
- · Measurement devices
- · Amusement machines

■ List of Models



NEW 91

Note: The actual product is marked differently from the image shown here.

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO		60 VAC	G3VM-61GR1	100	
	terminals		G3VM-61GR1(TR)		2,500

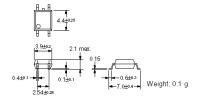
■ Dimensions

Note: All units are in millimeters unless otherwise indicated

G3VM-61GR1



Note: The actual product is marked differently from the image shown here.



■ Terminal Arrangement/Internal Connections (Top View)

G3VM-61 GR1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-61GR1



■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	l _F	50	mA	
	Repetitive peak LED forward current	I _{FP}	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	Δ1 _F /°C	0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	V_{OFF}	60	V	
	Continuous load current	l ₀	1000	mA	
	ON current reduction rate	∆l _{ON} /°C	-13.3	mA/°C	Ta ≥ 50°C
	Connection temperature	Tj	125	°C	
Dielectr output (ic strength between input and (See note 1.)	V _{FO}	1,500	Vrms	AG for 1 min
Operati	ng temperature	Ta	40 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	55 to +125	°C	With no icing or condensation
Solderin	ng temperature (10 s)		260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VF	1.0	1.15	1.3	V	I _F = 10 mA
	Reverse current	I _R			10	μА	V _R = 5 V
	Capacity between terminals	C _T		15		pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{FT}		1	3	mA	I _O = 400 mA
Output	Maximum resistance with output ON	Ron			0.7	Ω	I _F = 5 mA, I _O = 400 mA
	Current leakage when the relay is open	ILEAK	0.25	0.2	100	nA	V _{OFF} = 60 V
Capacity	y between I/O terminals	C _{I-O}		0.8		pF	f = 1 MHz, Vs = 0 V
Insulatio	on resistance	R _{I-O}	1,000			МΩ	V _{LO} = 500 VDC, RoH ≤ 60%
Turn-ON	N time	tON		1.4	3.0	ms	$I_F = 5 \text{ mA}$, $R_L = 200 \Omega$,
Turn-OF	F time	tOFF		0.6	1.0	ms	V _{DD} =20 V (See note 2.)

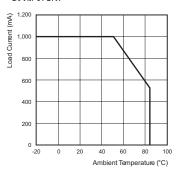
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V_{DD}			48	٧
Operating LED forward current	lF	5	10	20	mA
Continuous load current	ю			1,000	mA
Operating temperature	Ta	25		65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-61GR1



World's Smallest SSOP Package MOSFET Relay with Low Output Capacitance and ON Resistance (CxR = 5pF• Ω) in a 20-V Load Voltage Model

Output capacitance of 1 pF (typical) allows high frequency applications.



Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Semiconductor inspection tools
- · Measurement devices
- · Broadband systems
- · Data loggers

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per tape
SPST-NO	Surface-mounting	20 VAC	G3VM-21LR1	202
	terminals		G3VM-21LR1(TR)	1,500

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-21LR1







Note: A tolerance of £0.1 mm applies to all dimensions unless otherwise specified.

Weight: 0.03 g

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-21LR1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-21LR1



■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	Ιr	50	mA	
	Repetitive peak LED forward current	IFP	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	A I⊬°C	0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	Ň.	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	20	V	
	Continuous load current	lo	450	mA	
	ON current reduction rate	ΔI _{ON} /°C	-4.5	mA/°C	Ta ≥ 25°C
	Connection temperature	T _i	125	"C	
	ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operati	ng temperature	Ta	-20 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-40 to +125	°C	With no icing or condensation
Solderir	ng temperature (10 s)		260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	Vr	1.0	1.15	1.3	V	I _Γ = 10 mA
	Reverse current	I _R			10	μА	V _R = 5 V
	Capacity between terminals	C ₁	-	15		pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{F1}		122	4	mA	I _O = 100 mA
Output	Maximum resistance with output ON	R _{ON}	_	0.8	1.2	Ω	I _F = 5 mA, I _O = 450 mA, t = 10 ms
	Current leakage when the relay is open	I _{I FAK}	-		1.0	nA	V _{OH+} = 20 V, Ta = 50°C
	Capacity between terminals	COLL	_	5.0	12.0	pF	V = 0, f = 100 MHz, t < 1 s
Capacity	y between I/O terminals	CI-O	1242	0.8	122	pF	f = 1 MHz, Vs = 0 V
Insulatio	n resistance	R _{FO}	1,000		-	MΩ	V _{I-()} = 500 VDC, RoH ≤ 60%
Tum-ON time		tON	1500S	755	0.5	ms	I _Γ = 10 mA, R _L = 200 Ω
Tum-OF	F time	tOFF			0.5	ms	V _{DD} = 20 V (See note 2.

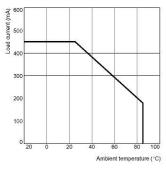
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		i desi	20	V
Operating LED forward current	lr.	10	-	30	mA
Continuous load current	lò	1227		450	mA
Operating temperature	Ta	25	-	60	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-21LR1



World's Smallest SSOP Package MOSFET Relay with Low Output Capacitance and ON Resistance (CxR = 5pF• Ω) in a 20-V Load Voltage Model

ON resistance of 1 Ω (typical) suppresses output signal attenuation.



NEW Approval pending

Note: The actual product is marked differently from the image shown here.

■ Application Examples

- · Semiconductor inspection tools
- · Measurement devices
- · Broadband systems
- · Data loggers

■List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per tape
SPST-NO	Surface-mounting	20 VAC	G3VM-21LR1	
	terminals		G3VM-21LR1(TR)	1,500

■ Dimensions

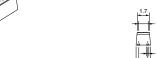
Note: All units are in millimeters unless otherwise indicated.

G3VM-21LR1



Note: The actual product is marked differently

from the image shown here.







Note: A tolerance of ±0.1 mm applies to all dimensions unless otherwise specified.

Weight: 0.03 g

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-21LR1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)



■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	J _E	50	mA	
	Repetitive peak LED forward current	IFP	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	Λ I _L P°C	0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	20	٧	
	Continuous load current	lo lo	450	mA	
	ON current reduction rate	∆ I _{ON} /°C	-4.5	mA√°C	Ta ≥ 25°C
	Connection temperature	T _I	125	°C	
	ic strength between input and See note 1.)	V _{FO}	1,500	Vrms	AC for 1 min
Operati	ng temperature	Ta	-20 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-40 to +125	°C	With no icing or condensation
Solderii	ng temperature (10 s)		260	°C	10 s

Note:

 The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _C = 10 mA
	Reverse current	I _R	5 552 5		10	μА	V _R = 5 V
	Capacity between terminals	C ₁	-	15	-	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{F1}			4	mA	I _O = 100 mA
Output	Maximum resistance with output ON	R _{ON}	1 111 11	0.8	1.2	Ω	I _F = 5 mA, I _O = 450 mA, t = 10 ms
	Current leakage when the relay is open	I _{I FAK}	<u></u>		1.0	nA	V _{OH} = 20 V, Ta = 50°C
	Capacity between terminals	Corr	_	5.0	12.0	pF	V = 0, f = 100 MHz, t < 1 s
Capacit	y between I/O terminals	CITO	10000	0.8	777	pF	f = 1 MHz, Vs = 0 V
Insulatio	on resistance	R _{FO}	1,000	1000	700	ΜΩ	V _{I-()} = 500 VDC, RoH ≤ 60%
Tum-ON	N time	tON			0.5	ms	I_{Γ} = 10 mA, R_{L} = 200 Ω ,
Tum-OF	F time	tOFF		.000	0.5	ms	V _{DD} = 20 V (See note 2.)

Note: 2. Turn-ON and Turn-OFF Times

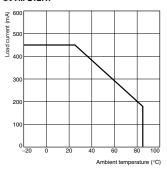
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		-	20	V
Operating LED forward current	I _F	10	J==:	30	mA
Continuous load current	lo	()	logest	450	mA
Operating temperature	Ta	25		60	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-21LR1



World's Smallest SSOP Package MOSFET Relay with Low Output Capacitance and ON Resistance (CxR = 10pF• Ω) in a 40-V Load Voltage Model

ON resistance of 1 Ω (typical) suppresses output signal attenuation.



Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Semiconductor inspection tools
- · Measurement devices
- · Broadband systems
- Data loggers

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per tape
SPST-NO	Surface-mounting	40 VAC	G3VM-41LR5	22
	terminals		G3VM-41LR5(TR)	1,500

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-41LR5



Note: The actual product is marked differently from the image shown here.





Note: A tolerance of ⊥0.1 mm applies to all dimensions unless otherwise specified.

Weight: 0.03 g

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-41LR5



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-41LR5



■ Absolute Maximum Ratings (Ta = 25°C)

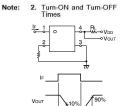
	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	Ir	50	mA	
	Repetitive peak LED forward current	Ire	1	Α	100 μs pulses, 100 pps
	LED forward current reduction rate	Λ Iμ°C	0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	VOFF	40	V	
	Continuous load current	I _O	300	mA	
	ON current reduction rate	ΔI _{ON} /°C	-3.0	mA/°C	Ta ≥ 25°C
	Connection temperature	T _I	125	°C	
	ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operati	ng temperature	Ta	-20 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-40 to +125	°C	With no icing or condensation
Solderir	ng temperature (10 s)	-	260	°C	10 s

Note:

 The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	Vr	1.0	1.15	1.3	V.	I _Γ = 10 mA
	Reverse current	I _R			10	μА	V _R = 5 V
	Capacity between terminals	Cı		15		pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{FI}	(4	mA	I _O = 100 mA
Output	Maximum resistance with output ON	R _{ON}	i etteki	1.0	1.5	Ω	I _F = 5 mA, I _O = 300 mA, t = 10 ms
	Current leakage when the relay is open	I _{I FAK}	120	222	1.0	nA	V _{OH+} = 30 V, Ta = 50°C
	Capacity between terminals	Corr	A550	10	14	pF	V = 0, f = 100 MHz, t < 1 s
Capacity	y between I/O terminals	CFO	-	0.8		pF	f = 1 MHz, Vs = 0 V
Insulatio	on resistance	R _{I-()}	1,000	=	553	МΩ	V _{LO} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON	-		0.5	ms	$I_{\Gamma} = 10 \text{ mA}, R_{L} = 200 \Omega,$
Tum-OF	F time	tOFF			0.5	ms	V _{DD} = 20 V (See note 2.)



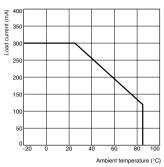
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}			32	V
Operating LED forward current	l _r	10		30	mA
Continuous load current	lo			300	mA
Operating temperature	Ta	25	500	60	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-41LR5



World's Smallest SSOP Package MOSFET Relay with Low Output Capacitance and ON Resistance (CxR = 10pF• Ω) in a 40-V Load Voltage Model

Output capacitance of 1 pF (typical) allows high-frequency applications.



NEW 31 Approval pending

Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Semiconductor inspection tools
- Measurement devices
- · Broadband systems
- · Data loggers

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per tape
SPST-NO	Surface-mounting	40 VAC	G3VM-41LR6	
	terminals		G3VM-41LR6(TR)	1,500

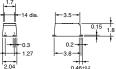
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-41LR6







Note: A tolerance of ±0.1 mm applies to all dimensions unless otherwise specified.

Weight: 0.03 g

Note: The actual product is marked differently from the image shown here.

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-41LR6



■Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-41LR6



■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	1 _F	50	mA	
	Repetitive peak LED forward current	ITP	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	VI™C	0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	VOFF	40	V	
	Continuous load current	lo .	120	mA	
	ON current reduction rate	ΔI _{ON} /°C	-1.2	mA/°C	Ta ≥ 25°C
	Connection temperature	T _i	125	°C	
	ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operati	ng temperature	Ta	-20 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-40 to +125	°C	With no icing or condensation
Solderir	ng temperature (10 s)		260	°C	10 s

Note:

 The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item		Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _F = 10 mA
	Reverse current	I _R	- T-1		10	μА	V _R = 5 V
	Capacity between terminals	Cı	1775 L	15	-	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{F1}	1000	6770	4	mA	I _O = 100 mA
Output	Maximum resistance with output ON	R _{ON}	220	10	15	Ω	I _F = 5 mA, I _O = 120 mA, t = 10 ms
	Current leakage when the relay is open	I _{I FAK}	-		1.0	nA	V _{OH} = 30 V, Ta = 50°C
	Capacity between terminals	COLL	127	1.0	2.0	pF	V = 0, f = 100 MHz, t < 1 s
Capacit	y between I/O terminals	CI-O		0.8	-	pF	f = 1 MHz, Vs = 0 V
Insulatio	n resistance	R _{EO}	1,000	5255	U <u>ses</u> y	МΩ	V _{I-()} = 500 VDC, RoH ≤ 60%
Tum-ON time		tON			0.5	ms	I_{Γ} = 10 mA, R_{L} = 200 $Ω$,
Tum-OF	F time	tOFF		22.52	0.5	ms	V _{DD} = 20 V (See note 2.)

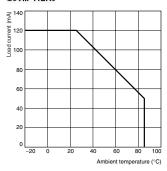
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}			32	V
Operating LED forward current	I _E	10	A. C.	30	mA
Continuous load current	lo.	1555	100000	120	mA
Operating temperature	Ta	25	-	60	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-41LR6



CAT. No. J929-E2-01

MOSFET Relay - G3VM-61B1/E1

Analog-Switching MOSFET Relay for High Switching Currents, with Dielectric Strength of 2.5 kVAC between I/O.

- Upgraded G3VM-61 B/E Series.
- Switches minute analog signals.
- Leakage current of 1µA max. when output relay is open.





■Application Examples

- · Measurement devices
- · Security systems
- · Amusement machines

The actual product is marked differently from the image shown here.

■List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	60 VAC	G3VM-61B1	50	222
1	Surface-mounting	1	G3VM-61E1		
	terminals		G3VM-61E1(TR)		1,500

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.





Note: The actual product is marked differently from the image shown here.



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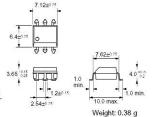
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G3VM-61E1



Note: The actual product is marked differently from the image shown here.



■ Terminal Arrangement/Internal Connections (Top View)

G3VM-61B1

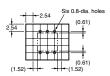


G3VM-61E1



■PCB Dimensions (Bottom View)

G3VM-61B1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-61E1



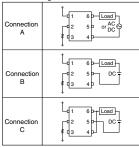
MOSFET Relay - G3VM-61B1/E1

■ Absolute Maximum Ratings (Ta = 25°C)

	Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward	current	Ir.	50	mA	
	Repetitive per current	Repetitive peak LED forward current		1	A	100 μs pulses, 100 pps
	LED forward o	urrent reduction	A I _p /°C	-0.5	mA/°C	Ta > 25°C
	LED reverse	voltage	VR	5	V	
	Connection to	emperature	Tj	125	°C	
Output	Output dielectric strength		Vorr	60	٧	
	Continuous load current	Connection A	lo	500	mA	
		Connection B		500		
		Connection C		1,000	1	
	ON current	Connection A	A lon/°C	0.5	mA/°C	Ta > 25°C
	reduction rate	Connection B	1	0.5	1	
	53533	Connection C	1	-10.0		
	Connection to	emperature	Tj	125	°C	
Dielectr output (ic strength bety See note 1.)	veen input and	V _{I-O}	2,500	Vrms	AC for 1 min
Operati	ng temperature	0 [Ta	40 to +85	°C	With no icing or condensation
Storage	temperature		T _{stg}	55 to +125	°C	With no icing or condensation
Solderin	ng temperature	(10 s)		260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

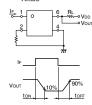
Connection Diagram



■ Electrical Characteristics (Ta = 25°C)

	ltem		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage		VΓ	1.0	1.15	1.3	V	I _C = 10 mA
	Reverse current		IR		100	10	μА	V _R = 5 V
	Capacity between terr	ninals	CT		30		pF	V = 0, f = 1 MHz
	Trigger LED forward o	urrent	I _{F1}	344201	1.6	3	mA	I _O = 500 mA
Output	Maximum resistance with output ON	Connection A	R _{ON}		1	2	Ω	I _F = 5 mA, I _C = 500 mA
		Connection B			0.5	1	Ω	I _F = 5 mA, I _O = 500 mA
		Connection C		6 75 3	0.25	-	Ω	I _F = 5 mA, I _O = 1,000 mA
	Current leakage when open	the relay is	ILEAK		-	1.0	μА	V _{OFF} = 60 V
Capacit	y between I/O terminals		CI-O		0.8	775	pF	f = 1 MHz, Vs = 0 V
Insulatio	on resistance	n resistance		1,000	222	-	MΩ	V _{J-()} = 500 VDC, RoH < 60%
Tum-Of	N time		tON	2. 111. 11	0.8	2.0	ms	I _F = 5 mA, R _I = 200 Ω,
Turn-OF	F time	The state of the s	tOFF		0.1	0.5	ms	V _{DD} = 20 V (See note 2

Note: 2. Turn-ON and Turn-OFF



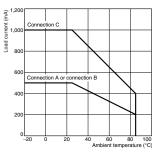
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		1 	48	V
Operating LED forward current	I _E	5	7.5	25	mA
Continuous load current	lo	1 22	0.000	500	mA
Operating temperature	T _a	20		65	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-61B1(E1)



MOSFET Relay - G3VM-61BR/ER

New, High-capacity (2.5-A) MOSFET Relay, Ideal for Analog Signal **Switching**

- Switches minute analog signals.
- Low ON-resistance of 0.1 Ω max.
- Continuous load current of 2.5 A.

■ Application Examples

- · Measurement devices
- · Security systems
- I/O for alarm



Note: The actual product is marked differently from the image shown here.

NEW

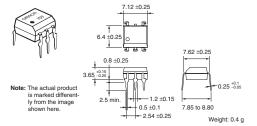
■ List of Models

Contact form	Terminals	Load Voltage	Model	Minimum packaging unit		
		(peak value)		Number per stick	Taping quantity	
SPST-NO PCB terminals 60 VAC		60 VAC	G3VM-61BR	50	-	
	Surface-mounting		G3VM-61ER			
	terminals		G3VM-61ER(TR)	_	1,500	

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

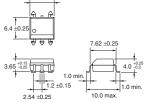
G3VM-61BR



G3VM-61ER



Note: The actual product is marked differently from the image shown here.



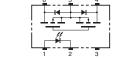
7.12 ±0.25

Weight: 0.4 g

■ Terminal Arrangement/Internal Connections (Top View) G3VM-61BR

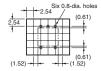
G3VM-61ER





■ PCB Dimensions (Bottom View)

G3VM-61BR



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-61ER



MOSFET Relay - G3VM-61BR/ER

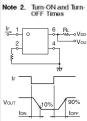
■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I _F	30	mA	
	Repetitive peak LED forward current	I _{FP}	1	А	100 µs pulses, 100 pps
	LED forward current reduc- tion rate	ΔIF/°C	-0.3	mA/°C	Ta≥25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	TJ	125	°C	
Output	Output dielectric strength	V _{OFF}	60	V	
	Continuous load current	lo .	2,500	mA	
	ON current reduction rate	ΔI _{ON} /°C	-22	mA/°C	Ta≥25°C
	Connection temperature	TJ	125	°C	-
Dielectric put (See i	strength between input and out- note 1.)	V _{I-O}	2,500	Vrms	AC for 1 min
Operating	temperature	Ta	-20 to 85	°C	With no icing or condensation
Storage to	emperature	T _{stg}	-40 to 125	°C	With no icing or condensation
Soldering	temperature (10 s)		260	°C	10 s

Note 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions
Input	LED forward voltage	V _F	1.18	1.33	1.48	٧	I _F = 10 mA
	Reverse current	I _R			10	μА	V _R = 5 V
	Capacity between terminals	CT	***	70	***	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFT		1.0	3	mA	I _O = 1 A
Output	Maximum resistance with out- put ON			0.065	0.1	Ω	I _F = 10 mA, I _O = 2 A
	Current leakage when the re- lay is open	LEAK	***	1.0	10	nA	V _{OFF} = 60 V
Capacit	y between I/O terminals	Ç ₁₋₀		0.8		pF	f = 1 MHz, V _S = 0 V
Insulation resistance		R _{I-O}	1,000	***	***	МΩ	V _{I-O} = 500 V DC, R _{OH} ≤ 60%
Turn-Of	N time	ION		1.0	1.5	ms	$I_F = 10 \text{ mA}, R_L = 200 \Omega, V_{DS}$
Turn-OF	Turn-OFF time				= 20 V (See note 2.)		



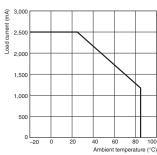
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		***	48	٧
Operating LED forward current	l _F	10		20	mA
Continuous load current	6	***	***	2,500	mA
Operating temperature	Ta	25		60	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-61BR/ER



MOSFET Relay - G3VM-351B/E

New Series with 350-V Load Voltage

- Upgraded G3VM-3 Series.
- Continuous load current of 120 mA
- Dielectric strength of 2,500 Vrms between I/O.
- Operating time of 0.3 ms (typical).



■Application Examples

- · Measurement devices
- · Security systems
- · Amusement machines

NEW Approval pending

Note: The actual product is marked differently from the image shown here.

■List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape	
SPST-NO	SPST-NO PCB terminals 350 VAC		G3VM-351B	50		
	Surface-mounting		G3VM-351E			
	terminals		G3VM-351E(TR)		1,500	

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.





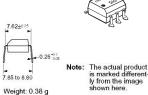
Note: The actual product

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0.810.2 3.65 10.15 2.5 min 1 2 1 0.15 0.5+01 - 2.5410.25

7.12±0.25



G3VM-351E



ly from the image shown here.



7.1210.25



Weight: 0.38 g

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-351B

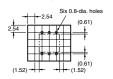


G3VM-351E



■PCB Dimensions (Bottom View)

G3VM-351B



■Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-351E



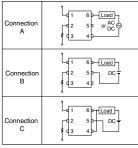
MOSFET Relay - G3VM-351B/E

■ Absolute Maximum Ratings (Ta = 25°C)

	Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward	current	lr .	50	mA	
	Repetitive per current	ak LED forward	Irp	1	А	100 μs pulses, 100 pps
	LED forward o	urrent reduction	Λ I _F /°C	-0.5	mA/°C	Ta ≥ 25°C
	LED reverse	voltage	VR	5	V	
	Connection temperature		Tj	125	°C	
Output	Output dielectric strength		Vorr	350	٧	
	Continuous load current	Connection A	lo	120	mA	
		Connection B		120		
		Connection C		240		
	ON current	Connection A	A I _{ON} PC	1.2	mA/°C	Ta > 25°C
	reduction rate	Connection B		1.2		
	152812	Connection C		-2.4		
	Connection te	Connection temperature		125	°C	
Dielectric strength between input and output (See note 1.)			V _{I-O}	2,500	Vrms	AC for 1 min
Operating temperature		Ta	40 to +85	°C	With no icing or condensation	
Storage	temperature		T _{stg}	55 to +125	"C	With no icing or condensation
Solderir	na temperature	(10 s)		260	°C-	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

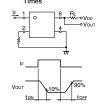
Connection Diagram



■ Electrical Characteristics (Ta = 25°C)

	ltem		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions	
Input	LED forward voltage	LED forward voltage		1.0	1.15	1.3	V	I _C = 10 mA	
	Reverse current		IR		2.2	10	μА	V _R = 5 V	
	Capacity between terr	ninals	CT		30		pF	V = 0, f = 1 MHz	
	Trigger LED forward current		I _{F1}		1	3	mA	I _C = 120 mA	
Output	Maximum resistance with output ON	Connection A	R _{ON}		25	35	Ω	I _F = 5 mA, I _C = 120 mA, t < 1 s	
				-	35	50	Ω	I _F = 5 mA, I _O = 120 mA	
		Connection B			28	40	Ω	I _F = 5 mA, I _O = 120 mA	
		Connection C		·	14	20	Ω	I _C = 5 mA. I _O = 240 mA	
	Current leakage when open	Current leakage when the relay is open		-	-	1.0	μА	V _{OFF} = 350 V	
Capacit	Capacity between I/O terminals		CI-O	=	0.8	-	pF	f = 1 MHz, Vs = 0 V	
Insulation resistance		R _{I-O}	1,000		-	МΩ	V _{I-C)} = 500 VDC, RoH < 60%		
Tum-ON	l time		tON	7655	0.3	1.0	ms	I _Γ = 5 mA, R _L = 200 Ω,	
Turn-OF	F time	Turn-OFF time			0.1	1.0	ms	V _{DD} = 20 V (See note:	

Note: 2. Turn-ON and Turn-OFF



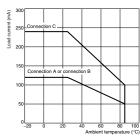
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	575	2555	280	٧
Operating LED forward current	l _r	5	10	25	mA
Continuous load current	lo	22	-	100	mA
Operating temperature	Ta	- 20	-	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-351B(E)



CAT. No. J932-E2-01

MOSFET Relay - G3VM-353B/B1/E/E1

6-pin Analog-switching MOSFET Relay with SPST-NC (Single-pole, Single-throw, Normally Closed) Contacts.

General-purpose Series Added.

- Switches minute analog signals.
- Switching AC and DC.
- General-purpose series (high ON-resistance)

■ Application Examples

- · Electronic automatic exchange systems
- · Security systems
- · Datacom (modem) systems
- · FA systems
- · Measurement devices





NEW

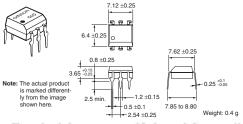
Note: The actual product is marked differently from the image shown here.

■ List of Models

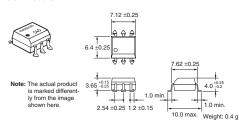
Contact form	Terminals	Load Voltage (peak value)	Model	Minimum packaging unit		
				Number per stick	Taping quantity	
SPST-NO	PCB terminals	60 VAC	G3VM-353B	50	-	
			G3VM-353B1			
	Surface-mounting		G3VM-353E			
	terminals		G3VM-353E1			
			G3VM-353E(TR)	-	1,500	
			G3VM-353E1(TR)	1		

Dimensions

Note: All units are in millimetres unless otherwise indicated. G3VM-353B/B1



G3VM-353E/E1



■ Terminal Arrangement/Internal Connections (Top View) G3VM-353B/B1 G3 VM-353E/E1



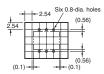
Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3 VM-353E/E1



■ PCB Dimensions (Bottom View)

G3 VM-353B/B1

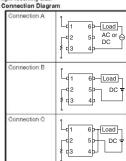


MOSFET Relay - G3VM-353B/B1/E/E1

■ Absolute Maximum Ratings (Ta = 25°C)

	Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward of	current	l _F	50	mA	
	Repetitive per rent	ak LED forward our-	Ipp	1	А	100 µs pulses, 100 pps
	LED forward o	current reduction rate	Δlp/°C	-0.5	mA/ °C	Ta ≥ 25°C
	LED reverse v	voltage	VR	.5	V	
	Connection temperature		TJ	125	°0	
Output	Output dielectric strength		VoFF	350	V	
	Continuous	Connection A	10	150 (100)	mA	
	load current	Connection B		150 (100)		
		Connection C		300 (200)		
	ON current	Connection A	∆lon/°C	-1.5 (-1)	mA/ °C	Ta ≥ 25°C
	reduction rate	Connection B	11,000,000	-1.5 (-1)		
	1	Connection C		-3.0 (-2)	1	
	Connection te	mperature	TJ	125	°C	
Dielectric strength between input and output (See note 1.)			VIO	2,500	Vms	AC for 1 min
Operating temperature			Ta	-40 to 85	°C	With no icing or condensation
Storage temperature			T _{stg}	-55 to 125	°C	With no loing or condensation
Soldering	temperature (1	0 s)		260	°C	10 s

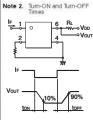
Note 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side. Connection Diagram



Values inside parentheses () are for G3VM-353B1/E1

■ Electrical Characteristics (Ta = 25°C)

	Item		Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions	
Input	Deput LED forward voltage Reverse current		VF	1.0	1.15	1.3	V	I _F = 10 mA	
			I _R	94.4		10	μА	V _R = 5 V	
	Capacity between to	erminals	OT	22	30		pF	V = 0, f = 1 MHz	
	Trigger LED forward current		FT	=	1	3	mA	I _{OFF} = 10 μA	
Output	Maximum resis- tance with output ON	Connection A	R _{ON}	100	15 (27)	25 (50)	Ω	I _O = 150 mA	
		Connection B			8 (20)	14 (43)	Ω	I _O = 150 mA	
		Connection C			4 (10)	7 ()	Ω	I _O = 300 mA	
	Current leakage when the relay is open		LEAK	94.4		1.0	μА	I _F = 5 mA, V _{OFF} = 350 V	
Capacit	y between I/O termina	əls	C _{1-O}		0.8		pF	f = 1 MHz, V _s = 0 V	
Insulation resistance		Rio.	1,000		***	MΩ	V _{I-O} = 500 V DC, R _{OH} ≤ 60%		
Turn-ON time		10N		0.1 (0.25)	1.0 (0.5)	ms	I _F = 5 mA, R _L = 200 Ω,		
Tum-Of	Tum-OFF time		tOFF		1.0 (0.5)	3.0 (1)	ms	V _{DD} = 20 V (See note 2.)	



Values inside parentheses () are for G3VM-353B1/E1.

■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

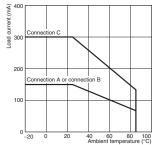
Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	1755	-	280	V
Operating LED forward current	lp -	5	***	25	mA
Continuous load current	Io Io			150 (100)	mA
Operating temperature	T _a	-20		65	°C

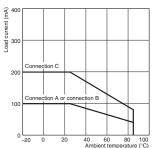
Values inside parentheses () are for G3VM-353B1/E1.

Engineering Data

Load Current vs. Ambient Temperature G3VM-353B/E

Load Current vs. Ambient Temperature G3VM-353B1/E1





CAT. No. J933-E2-01

MOSFET Relay - G3VM-401B/E

New Series of Analog-switching MOSFET Relays with Dielectric Strength of 2.5 kVAC between I/O **Using Optical Isolation**

- Switches minute analog signals.
- Leakage current of 1µA max. when output relay is open.
- Upgraded G3VM-4N Series.



The actual product is marked differently from the image

■Application Examples

- · Electronic automatic exchange systems
- · Measurement devices
- · FA systems

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	400 VAC	G3VM-401B	50	
	Surface-mounting		G3VM-401E		
	terminals		G3VM-401E(TR)		1,500

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



Note: The actual product is marked differently from the image shown here





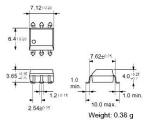


G3VM-401E



shown here





■Terminal Arrangement/Internal Connections (Top View)

G3VM-401B

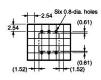


G3VM-401E



■PCB Dimensions (Bottom View)

G3VM-401B



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-401E



MOSFET Relay - G3VM-401B/E

■ Absolute Maximum Ratings (Ta = 25°C)

	Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward	current	l _F	50	mA	
	Repetitive peak LED forward current		Irp	1	Α	100 μs pulses, 100 pps
	LED forward c rate	urrent reduction	Λ I _L P°C	-0.5	mA/°C	Ta > 25°C
	LED reverse	voltage	VR	5	V	
	Connection te	emperature	Tj	125	°C	
Output	Output dielect	tric strength	Vorr	400	V	
	Continuous load current	Connection A	lo	120	mA	
		Connection B		120		
		Connection C		240		
	ON current	Connection A	Al _{ON} /°C	1.2	mA/°C	Ta > 25°C
	reduction rate	Connection B		1.2		
		Connection C		-2.4		
	Connection to	emperature	Tj	125	°C	
Dielectric strength between input and output (See note 1.)		V _{I-O}	2,500	Vrms	AC for 1 min	
Operating temperature		Ta	40 to +85	"C	With no icing or condensation	
Storage temperature			T _{stg}	55 to +125	°C	With no icing or condensation
Soldering temperature (10 s)				260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all prins as a group on the LED side and all pins as a group on the light-receiving side.

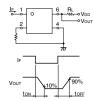
Connection Diagram

Connection	1 6 Load
A	2 5 or AC O
Connection	1 6 Load
B	1 2 5 DC
Connection C	1 6 Load DC 5 DC 5 43 4

■ Electrical Characteristics (Ta = 25°C)

ltern			Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage		VΓ	1.0	1.15	1.3	V	I _C = 10 mA
	Reverse current		IR	(Lary)	(4.12)	10	μА	V _R = 5 V
	Capacity between terr	ninals	CT		30		pF	V = 0, f = 1 MHz
	Trigger LED forward o	urrent	I _{F1}		1	3	mA	I _O = 120 mA
Output Maximum resistance with output ON		Connection A	R _{ON}		17	35	Ω	I _F = 5 mA, I _C = 120 mA
		Connection B		(CEE)	11	20	Ω	I _F = 5 mA, I _O = 120 mA
		Connection C			6	10	Ω	I _F = 5 mA, I _O = 240 mA
	Current leakage when open	the relay is	ILEAK		_	1.0	μА	V _{OFF} = 350 V
Capacity between I/O terminals			CI-O		0.8		pF	f = 1 MHz, Vs = 0 V
Insulation resistance		R _{I-O}	1,000			МΩ	V _{I-()} = 500 VDC, RoH < 60%	
Turn-ON time		tON	15 55 81	0.3	1.0	ms	I _F = 5 mA, R _I = 200 Ω,	
Tum-OFF time			tOFF		0.1	1.0	ms	V _{DD} = 20 V (See note 2.

Note: 2. Turn-ON and Turn-OFF Times



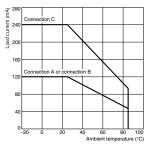
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		0.000	320	٧
Operating LED forward current	lr .	5	7.5	25	mA
Continuous load current	I _O	1222	1225	120	mA
Operating temperature	T _{et}	20	-	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-401B(E)



MOSFET Relay - G3VM-401BY/EY

Analog-switching MOSFET Relay with Dielectric Strength of 5 kVAC between I/O Using Optical Isolation

- Switches minute analog signals.
- Leakage current of 1 µA max. when output relay is open.



■Application Examples

- · Electronic automatic exchange systems
- · Measurement devices
- · FA systems

The actual product is marked differently from the image shown here.

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	400 VAC	G3VM-401BY	50	
	Surface-mount-	1	G3VM-401EY	1	
	ing terminals		G3VM-401EY (TR)		1,500

0.25+0.1

■ Dimensions

Note: All units are in millimeters unless otherwise indicated

G3VM-401BY

Note: The actual product is marked differently from the image

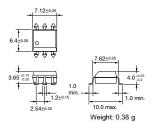


0.5+0.1 shown here. 2 54+025

G3VM-401EY



Note: The actual product is marked differently from the image shown here.



■ Terminal Arrangement/Internal Connections (Top View)

G3VM-401BY

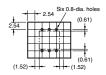


G3VM-401EY



■PCB Dimensions (Bottom View)

G3VM-401BY



■Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-401EY



MOSFET Relay - G3VM-401BY/EY

■ Absolute Maximum Ratings (Ta = 25°C)

	Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward	current	I _E	50	mA	
	Repetitive peak LED forward current		IFP	1	A	100 μs pulses, 100 pps
	LED forward o	urrent reduction	Λ1μ°C	-0.5	mA/°C	Ta > 25°C
	LED reverse	voltage	VR	5	V	
	Connection temperature		Tj	125	°C-	
Output	Output dielec	tric strength	Vorr	400	V	
	Continuous load current	Connection A	lo	120	mA	
		Connection B		120		
		Connection C		240	1	
	ON current	Connection A	A low/°C	-1.2	mA/°C	Ta > 25°C
	reduction rate	Connection B		-1.2		
	V824868	Connection C		-2.4	1	
	Connection te	emperature	Tj	125	°C	
Dielectric strength between input and output (See note 1.)		V _{I-O}	5,000	Vrms	AC for 1 min	
Operating temperature		Ta	-40 to +85	"C	With no icing or condensation	
Storage temperature			T _{stg}	-55 to +125	"C	With no icing or condensation
Soldering temperature (10 s)				260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

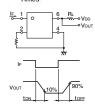
Connection Diagram

Connection D	agiaiii
Connection A	1 6 Load 2 5 or AC O
Connection B	1 6 - Load 2 5 - DC -
Connection C	2 5 DC

■ Electrical Characteristics (Ta = 25°C)

Item			Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	ut LED forward voltage		V _Γ	1.0	1.15	1.3	V	I _Γ = 10 mA
	Reverse current		I _R			10	μА	V _R = 5 V
	Capacity between terr	ninals	CT		30	0777.0	pF	V = 0, f = 1 MHz
	Trigger LED forward of	urrent	I _{F1}			3	mA	I _O = 120 mA
Output Maximum resistance with output ON		Connection A	R _{ON}		17	35	Ω	I _F = 5 mA, I _C = 120 mA
	,	Connection B		-	11	20	Ω	I _F = 5 mA, I _O = 120 mA
		Connection C			6	10	Ω	I _F = 5 mA, I _O = 240 mA
	Current leakage when open	the relay is	ILEAK		=	1.0	μА	V _{OFF} = 400 V
Capacity between I/O terminals			CHO		0.8	e rm e	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		R _{I-O}	1,000	(T)	(1 18)	MΩ	V _{I-O} = 500 VDC, RoH < 60%	
Tum-ON time		tON		0.3	1.0	ms	I _F = 5 mA, R _I = 200 Ω,	
Tum-OFF time			tOFF		0.1	1.0	ms	V _{DD} = 20 V (See note 2.)

Note: 2. Turn-ON and Turn-OFF Times



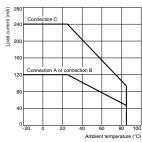
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	-	-	320	V
Operating LED forward current	lr.	5	7.5	25	mA
Continuous load current	lo lo	-	-	120	mA
Operating temperature	Tai	- 20		65	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-401BY(EY)



CAT. No. J935-E2-01

MOSFET Relay - G3VM-601BY/EY

Analog-switching MOSFET Relay with a Dielectric Strength of 5 kVAC between I/O Using Optical Isolation

- Switches minute analog signals.
- Switching AC and DC.
- Peak load voltage of 600 V.
- Dielectric strength of 5 kVAC between I/O.





The actual product is marked differently from the image Note: shown here.

■Application Examples

- · Electronic automatic exchange systems
- FA systems
- · Measurement devices
- · Security systems

■List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	600 VAC	G3VM-601BY	50	
	Surface-mounting		G3VM-601EY		
	terminals		G3VM-601EY(TR)		1,500

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-601BY



The actual product is marked differently from the image shown here.

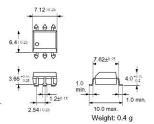


1.210.15 0.510.1 → 2.5410.25



G3VM-601EY

The actual product is marked differently from the image



■ Terminal Arrangement/Internal Connections (Top View)

G3VM-601BY

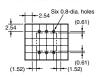






■PCB Dimensions (Bottom View)

G3VM-601BY



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-601EY



MOSFET Relay - G3VM-601BY/EY

■ Absolute Maximum Ratings (Ta = 25°C)

	Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current Repetitive peak LED forward current		l _F	50	mA	
			Irp	1	A	100 μs pulses, 100 pps
	LED forward c rate	urrent reduction	A I _L /°C	-0.5	mA/°C	Ta > 25°C
	LED reverse	/oltage	V_R	5	V	
	Connection te	mperature	Tj	125	°C	
Output	Output dielect	ric strength	Vorr	600	V	
	Continuous load current	Connection A	ю	100	mA	
		Connection B		100		
		Connection C		200		
	ON current	Connection A	AlonFC	1.0	mA/°C	Ta > 25°C
	reduction rate	Connection B		1.0		
		Connection C		-2.0		
	Connection te	mperature	Tj	125	°C	
Dielectric strength between input and output (See note 1.)		V _{I-O}	5,000	Vrms	AC for 1 min	
Operating temperature		Ta	40 to +85	"C	With no icing or condensation	
Storage temperature			T _{stg}	55 to +125	"C	With no icing or condensation
Soldering temperature (10 s)			22	260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

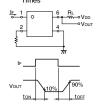
Connection Diagram

Connection A	1 6 Load 2 5 or AC 3 4
Connection B	2 5 DC +
Connection C	2 5 DC T

■ Electrical Characteristics (Ta = 25°C)

ltern		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions	
Input	LED forward voltage	j	٧ _٢	1.0	1.15	1.3	V	I _F = 10 mA
	Reverse current		IR			10	μΑ	V _R = 5 V
	Capacity between terr	ninals	CT		30	-	pF	V = 0, f = 1 MHz
Tr	Trigger LED forward o	urrent	I _{FT}		1.6	5	mA	I ₍₎ = 100 mA
Output	ut Maximum resistance Connection A with output ON	Connection A	R _{ON}	-	25	35	Ω	I _F = 10 mA, I _O = 100 mA
					30	45	Ω	I _F = 10 mA, I _O = 100 mA
		Connection B Connection C			23	35	Ω	I _F = 10 mA, I _O = 100 mA
					12	18	Ω	I _C = 10 mA, I _O = 200 mA
	Current leakage when the relay is open		ILEAK	1550	-	1.0	μА	V _{OFF} = 600 V
Capacit	Capacity between I/O terminals		CI-O	3 =15 8	0.8	==	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		R _{I-O}	1,000	-	=	MΩ	V _{I-()} = 500 VDC, RoH < 60%	
Turn-ON time		tON		0.2	1.5	ms	$I_{\Gamma} = 5 \text{ mA}, R_{L} = 200 \Omega,$	
Turn-OF	F time		tOFF		0.2	1.0	ms	V _{DD} = 20 V (See note 2.

2. Turn-ON and Turn-OFF Times Note:



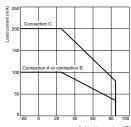
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}			480	٧
Operating LED forward current	I _L	7.5	15	25	mA
Continuous load current	lo		A TT A	100	mA
Operating temperature	Ta	- 20	0.0000	65	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-601BY(EY)



CAT. No. J936-E2-01

MOSFET Relay - G3VM-61H1

Switches Minute Signals and Analog Signals, 6-pin SOP Package and 60-V Load Voltage

- Continuous load current of 400 mA.
- Dielectric strength of 1,500 Vrms between I/O.

omeon omeon 743 omeon 743

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Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Broadband systems
- · Measurement devices
- · Data loggers
- · Amusement machines

■List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	60 VAC	G3VM-61H1	75	.===
	terminals		G3VM-61H1(TR)		2,500

■ Dimensions

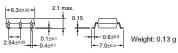
Note: All units are in millimeters unless otherwise indicated.

G3VM-61H1



Note: The actual product is marked differently from the image shown here.





■ Terminal Arrangement/Internal Connections (Top View)

G3VM-61H1



■Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-61H1



MOSFET Relay - G3VM-61H1

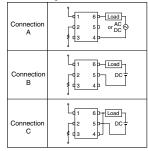
■ Absolute Maximum Ratings (Ta = 25°C)

	Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward	current	I _F	50	mA	
	Repetitive per current	ak LED forward	IFP	1	A	100 μs pulses, 100 pps
	LED forward o	urrent reduction	A I _p P°C	-0.5	mA/°C	Ta > 25°C
	LED reverse	voltage	V _R	5	V	
	Connection to	emperature	Tj	125	°C	
Output	Output dielect	tric strength	Vorr	60	V	
	Continuous	Connection A	lo.	400	mA .	
	load current	Connection B	1	400		
		Connection C	1	800		
	ON current	Connection A	A lon/°C	4.0	mA/°C	Ta > 25°C
	reduction rate	Connection B		4.0		
	100000	Connection C	1	-8.0		
	Connection te	emperature	Tj	125	°C	
Dielectr output (ic strength betw See note 1.)	veen input and	V _{I-O}	1,500	Vrms	AC for 1 min
Operati	ng temperature	i	Ta	40 to +85	"C	With no icing or condensation
Storage	temperature		T _{stg}	55 to +125	"C	With no icing or condensation
Solderir	ng temperature	(10 s)		260	°C	10 s

Note:

 The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

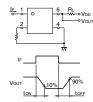
Connection Diagram



■ Electrical Characteristics (Ta = 25°C)

ltem		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions		
Input	LED forward voltage		VΓ	1.0	1.15	1.3	V	I _F = 10 mA	
	Reverse current		I _R	-	=	10	μА	V _R = 5 V	
Capacity between	Capacity between terr	ninals	CT		30		pF	V = 0, f = 1 MHz	
	Trigger LED forward o	urrent	l _{F1}		1.6	3	mA	I _O = 400 mA	
Output Maximum resistance with output ON	Connection A	R _{ON}	-	1	2	Ω	I _F = 5 mA, I _O = 400 mA		
		Connection B Connection C			0.5	1	Ω	I _F = 5 mA, I _O = 400 mA	
					0.25	-	Ω	I _F = 5 mA, I _O = 800 mA	
	Current leakage when the relay is open		ILEAK	(202)		1.0	μА	V _{OFF} = 60 V	
Capacity	y between I/O terminals		C _{I-()}	(777)	0.8	.555	pF	f = 1 MHz, Vs = 0 V	
Insulation resistance		R _{I-O}	1,000	1555	57.5%	МΩ	V _{I-()} = 500 VDC, RoH < 60%		
Tum-ON	Tum-ON time		tON		0.8	2.0	ms	$I_{F} = 5 \text{ mA}, R_{I} = 200 \Omega,$	
Tum-OF	F time		tOFF		0.1	0.5	ms	V _{DD} = 20 V (See note 2.	

Note: 2. Turn-ON and Turn-OFF Times



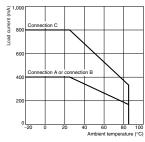
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		-	48	V
Operating LED forward current	lr.	5	7.5	25	mA
Continuous load current	I _O		_	400	mA
Operating temperature	Ta	20		65	"C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-61H1



New High-capacity MOSFET Relays Allowing Switching of a 1.25-A Continuous Load Current with a 80-V Load Voltage.

- Continuous load current of 1,250 mA.
- Dielectric strength of 1,500 Vrms between I/O.





Note: The actual product is marked differently from the image shown here.

■ Application Examples

- · Broadband systems
- · Measurement devices
- Data loggers
- · Amusement machines

■List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	80 VAC	G3VM-81HR	75	
	terminals		G3VM-81HR(TR)		2,500

■ Dimensions

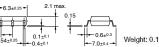
Note: All units are in millimeters unless otherwise indicated.

G3VM-81HR



Note: The actual product is marked differently from the image shown here.





■ Terminal Arrangement/Internal Connections (Top View)

G3VM-81HR



■Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-81HR



■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	IF	50	mA	
	Repetitive peak LED forward current	IFP	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	V I™C	0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	80	V	
	Continuous load current	lo	1.250	mA	
	ON current reduction rate	∆ I _{ON} /°C	-12.5	mA/°C	Ta ≥ 25°C
	Connection temperature	T _i	125	°C	
	ric strength between input and (See note 1.)	V _{FO}	1,500	Vrms	AC for 1 min
Operati	ing temperature	Ta	-20 to +85	°C	With no icing or condensation
Storage	e temperature	T _{stg}	-40 to +125	°C	With no icing or condensation
Solderii	ng temperature (10 s)		260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _Γ = 10 mA
	Reverse current	I _R			10	μА	V _R = 5 V
	Capacity between terminals	Cı		15	1000	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFI	-	2	5	mA	I _O = 1,250 mA
Output	Maximum resistance with output ON	R _{ON}		0.11	0.15	Ω	I _F = 5 mA, I _O = 1,250 mA
	Current leakage when the relay is open	I _{I FAK}		1.2	1.5	nA	V _{OFF} = 20 V, Ta = 50°C
Capacit	y between I/O terminals	CIO		0.8	_	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		R _{IO}	1,000	-		МΩ	V _{I O} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON		2.0	3.0	ms	$I_{F} = 5 \text{ mA}, R_{I} = 200 \Omega,$
Turn-OF	F time	tOFF		0.7	1.0	ms	V ₍₎₍₎ = 20 V (See note 2.

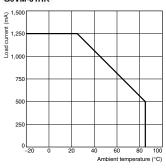
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	10000	-	64	V
Operating LED forward current	I _F	5	-	30	mA
Continuous load current	I _O			1,250	mA
Operating temperature	Ta	25	-	60	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-81HR



Slim, 2.1-mm High, MOSFET Relay with Miniature, Flat, 6-pin SOP Package

- New models with 6-pin SOP package now available in the 200-V load voltage series.
- Continuous load current of 200 mA.
- Dielectric strength of 1,500 Vrms between I/O.





■Application Examples

- · Broadband systems
- · Measurement devices
- · Data loggers
- · Amusement machines

Note: The actual product is marked differently from the image shown here.

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	200 VAC	G3VM-201H1	75	
	terminals		G3VM-201H1(TR)	Carponia Car	2,500

■ Dimensions

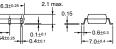
Note: All units are in millimeters unless otherwise indicated.

G3VM-201H1



Note: The actual product is marked differently from the image shown here.





Weight: 0.13 g

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-201H1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-201H1

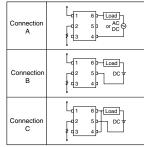


■ Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Rating	Unit	Measurement Conditions		
Input	LED forward current Repetitive peak LED forward current LED forward current reduction rate LED reverse voltage		I _F	50	mA		
			IFP	1	А	100 μs pulses, 100 pps	
			VI™.C	-0.5 5	mA/°C V	Ta > 25°C	
			V _R				
	Connection temperature		Tj	125	°C		
Output	Output dielectric strength		Vorr	200	٧		
	Continuous load current	Connection A	lo	200	mA		
		Connection B		200			
		Connection C		400	1		
	ON current reduction rate	Connection A	A l _{ON} /°C	2.0	mA/°C	Ta ≥ 25°C	
		Connection B		2.0			
		Connection C		-4.0			
	Connection temperature		Tj	125	°C		
Dielectric strength between input and output (See note 1.)		V _{I-O}	1,500	Vrms	AC for 1 min		
Operating temperature		Ta	40 to +85	"C	With no icing or condensation		
Storage temperature		T _{stg}	55 to +125	"C	With no icing or condensation		
Soldering temperature (10 s)			260	°C	10 s		

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

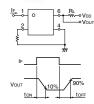
Connection Diagram



■ Electrical Characteristics (Ta = 25°C)

	ltem		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage		VF	1.0	1.15	1.3	V	I _F = 10 mA
	Reverse current		I _R	25 72 31	-	10	μА	V _R = 5 V
	Capacity between terminals		CT		30		pF	V = 0, f = 1 MHz
	Trigger LED forward of	urrent	l _{ET}		1	3	mA	I ₍₎ = 200 mA
Output	Maximum resistance with output ON	Connection A	R _{ON}	223	5	8	Ω	I _F = 5 mA, I _C = 200 mA
		Connection B			3	5	Ω	I _F = 5 mA, I _O = 200 mA
		Connection C		1	1.5		Ω	I _F = 5 mA, I _O = 400 mA
	Current leakage when the relay is open		ILEAK	(11)	100	1.0	μА	V _{OFF} = 200 V
Capacity between I/O terminals		C _{I-()}		0.8		pF	f = 1 MHz, Vs = 0 V	
Insulation resistance		R _{I-O}	1,000	200		МΩ	V _{I-()} = 500 VDC, RoH < 60%	
Turn-ON time		tON		0.6	1.5	ms	I _H = 5 mA, R _I = 200 Ω V _{DD} = 20 V (See note 2	
Tum-OFF time		tOFF		0.1	1.0	ms		

Note: 2. Turn-ON and Turn-OFF



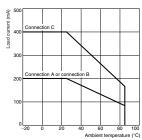
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}			160	٧
Operating LED forward current	Ir.	5	7.5	25	mA
Continuous load current	lo lo			130	mA
Operating temperature	Ta	20		60	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-201H1



MOSFET Relay - G3VM-351H

Slim 2.1mm high relay incorporating a MOSFET Optically Coupled with an Infrared LED in a Miniature, Flat SOP

- Upgraded G3VM-S3 Series.
- Continuous load current of 110 mA.
- Dielectric strength of 1,500 Vrms between I/O.



The actual product is marked differently from the image

■Application Examples

- · Broadband systems
- · Measurement devices
- Data loggers
- · Amusement machines

■ List of Models

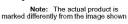
Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	350 VAC	G3VM-351H	75	
	terminals		G3VM-351H(TR)		2,500

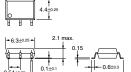
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-351H







shown here.

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-351H



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-351H



MOSFET Relay - G3VM-351H

■ Absolute Maximum Ratings (Ta = 25°C)

	ltem		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward	current	I _F	50	mA	
	Repetitive peak LED forward current		IFP	1	A	100 μs pulses, 100 pps
	LED forward o	urrent reduction	A I _L P°C	-0.5	mA/°C	Ta > 25°C
	LED reverse	voltage	V _R	5	V	
	Connection to	emperature	Тј	125	°C	
Output	Output dielectric strength		V _{OFF}	350	V	
	Continuous load current	Connection A	lo	110	mA	
		Connection B		110		
		Connection C		220		
	ON current	Connection A	A lon/°C	1.1	mA/°C	Ta > 25°C
	reduction rate	Connection B		1.1		
	540835	Connection C	1	-2.2		
	Connection te	emperature	Tj	125	°C	
	ic strength bety See note 1.)	veen input and	V _{I-O}	1,500	Vrms	AC for 1 min
Operating temperature		Ta	40 to +85	"C	With no icing or condensation	
Storage temperature			T _{stg}	55 to +125	"C	With no icing or condensation
Solderin	g temperature	(10 s)		260	°C	10 s

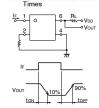
The dielectric strength between the input and output was checked by applying voltage be-tween all pins as a group on the LED side and all pins as a group on the light-receiving side. Note:

Connection Diagram Connection Connection В Connection С

■ Electrical Characteristics (Ta = 25°C)

ltern			Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage		٧ _Γ	1.0	1.15	1.3	V	I _Γ = 10 mA
	Reverse current		IR	-	-	10	μА	V _R = 5 V
	Capacity between terr	minals	CT	-	30	=	pF	V = 0, f = 1 MHz
	Trigger LED forward of	urrent	I _{F1}		1	3	mA	I _O = 110 mA
	Maximum resistance with output ON	ce Connection A R	R _{ON}		25	35	Ω	I _F = 5 mA, I _C = 110 mA, t < 1 s
				h 	35	50	Ω	I _F = 5 mA, I _O = 110 mA
		Connection B			28	40	Ω	I _F = 5 mA, I _O = 110 mA
		Connection C			14	20	Ω	I _C = 5 mA, I _O = 220 mA
	Current leakage when open	the relay is	ILEAK		-	1.0	μА	V _{OFF} = 350 V
Capacity between I/O terminals		C _{I-O}		0.8	-	pF	f = 1 MHz, Vs = 0 V	
Insulation resistance		R _{I-O}	1,000			MΩ	V _{I-()} = 500 VDC, RoH < 60%	
Tum-ON time			tON		0.3	1.0	ms	I_{Γ} = 5 mA, R _L = 200 Ω,
Tum-OF	Turn-OFF time				0.1	1.0	ms	V _{DD} = 20 V (See note 2.

Note: 2. Turn-ON and Turn-OFF



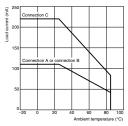
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		(CONT.)	280	V
Operating LED forward current	I _E	5	10	25	mA
Continuous load current	lo	1000	C-0000	100	mA
Operating temperature	Ta	- 20	1 <u>/22</u> 5	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-351H



CAT. No. J940-E2-01

MOSFET Relay - G3VM-353H/H1

Analog-switching MOSFET Relay with SPST-NC (Double-pole, Single-throw, Normally Closed) Contacts. General-purpose Series Added.

- New models with SPST-NC contacts and a 6-pin SOP package now included in 350-V load voltage series.
- Continuous load current of 120 mA (90 mA).
- Dielectric strength of 1,500 Vrms between I/O.
- General-purpose series (high ON-resistance) added.



Note: The actual product is marked differently from the image shown here.

■ Application Examples

- Broadband systems
- Measurement devices
- Data loggers
- · Amusement machines

■ List of Models

Contact form	Terminals	Load Voltage	Model	Minimum packaging unit		
		(peak value)		Number per stick	Taping quantity	
SPST-NC			G3VM-353H	75	-	
	terminals		G3VM-353H1			
			G3VM-353H(TR)	-	2,500	
			G3VM-353H1(TR)			

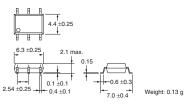
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-353H/H1



Note: The actual product is marked differently from the image shown here.



Terminal Arrangement/Internal Connections (Top View)

G3VM-353H/H1



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-353H/H1

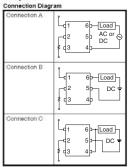


MOSFET Relay - G3VM-353H/H1

■ Absolute Maximum Ratings (Ta = 25°C)

	Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward cur	rrent	lp.	50	mA	
	Repetitive peak rent	Repetitive peak LED forward cur- rent		1	A	100 μs pulses, 100 pps
	LED forward cur rate	rrent reduction	Δl _E /°C	-0.5	mA/°C	Ta≥25°C
	LED reverse vol	tage	VR	5	V	
	Connection temperature		TJ	125	90	
Output	Output dielectric	strength	VoFF	350	V	
	Continuous	Connection A	lo	120 (90)	mA	
	load current	Connection B		120 (90)		
		Connection C		240 (180)		
	ON current re-	Connection A	∆lon/°C	-1.2 (-0.9)	mA/°0	Ta≥25°C
	duction rate	Connection B		-1.2 (-0.9)		TOWN CONTRACTOR IN
		Connection C		-2.4 (-1.8)		
	Connection tem	perature	TJ	125	°C	
Dielectric strength between input and output (See note 1.)		Vio	1,500	Vms	AC for 1 min	
Operating temperature		Ta	-40 to 85	°C	With no icing or condensation	
Storage temperature		T _{stg}	-55 to 125	°C	With no icing or condensation	
Soldering	temperature (10 s)		260	90	10 s

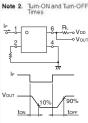
Note 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.



Values inside parentheses () are for G3VM-353H1

■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions	
Input	out LED forward voltage		VF	1.0	1.15	1.3	V	I _F = 10 mA
	Reverse curren	t	I _R			10	μА	V _R = 5 V
	Capacity between	en terminals	CT	-10	30	***	pF	V = 0, t = 1 MHz
	Trigger LED for	ward current	FC		1.0	3.0	mA	I _{OFF} = 10 μA
Output		Connection A RON	RON		15 (27)	25 (50)	Ω	I _O = 120 mA
	sistance with output ON	Connection B			8 (20)	14 (43)	Ω	I _O = 120 mA
	174	Connection C		***	4 (10)	***	Ω	I _O = 240 mA
	Current leakage	when the relay	LEAK	-2	-	1.0	μА	V _{OFF} = 350 V, I _F = 5 mA
Capacity t	oetween I/O termina	als	CIO	-1-	0.8	***	pF	1 = 1 MHz, V ₈ = 0 V
Insulation	sulation resistance		Rio	1,000			МΩ	V _{I-O} = 500 V DC, R _{OH} ≤ 60%
Tum-ON I	l time		ION	4.00	(0.25)	1.0 (0.5)	ms	$I_F = 5 \text{ mA}, H_L = 200 \Omega,$
Turn-OFF time		10FF	***	(0.5)	3.0 (1)	ms	V _{DD} = 20 V (See note 2.)	



Values inside parentheses () are for G3VM-353H1.

Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

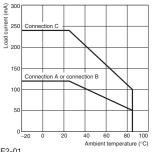
Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}			280	V
Operating LED forward current	le:	5		25	mA
Continuous load current	6	***	200	120 (90)	mA
Operating temperature	Ta	-20		65	°C

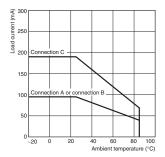
Values inside parentheses () are for G3VM-353H1

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-353H

Load Current vs. Ambient Temperature G3VM-353H1





CAT. No. J941-E2-01

MOSFET Relay - G3VM-401H

Expanded Range of Analog Switching MOSFET Relays with 400-V Load Voltage

- New models with a 6-pin SOP package now included in 400-V load voltage series.
- Continuous load current of 120 mA.
- Dielectric strength of 1,500 Vrms between I/O.



Note: The actual product is marked differently from the image



■Application Examples

- · Broadband systems
- Measurement devices
- · Data loggers
- · Amusement machines

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting	400 VAC	G3VM-401H	75	
	terminals		G3VM-401H(TR)	200	2,500

■ Dimensions

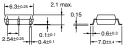
Note: All units are in millimeters unless otherwise indicated.

G3VM-401H



Note: The actual product is marked differently from the image shown here.





Weight: 0.13 g

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-401H



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-401H



MOSFET Relay - G3VM-401H

■ Absolute Maximum Ratings (Ta = 25°C)

	Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward	current	Ir	50	mA	
	Repetitive peak LED forward current		ITP	1	Α	100 μs pulses, 100 pps
	LED forward o	urrent reduction	Λ I _L /°C	-0.5	mA/°C	Ta > 25°C
	LED reverse	voltage	VR	5	V	
	Connection temperature		Tj	125	°C	
Output	Output dielectric strength		VOFF	400	V	
	Continuous load current	Connection A	lo	120	mA	
		Connection B		120		
		Connection C		240		
	ON current	Connection A	A low/°C	1.2	mA/°C	Ta > 25°C
	reduction rate	Connection B		1.2		
		Connection C		-2.4		
	Connection te	emperature	Tj	125	°C	
Dielectric strength between input and output (See note 1.)		V _{I-O}	1,500	Vrms	AC for 1 min	
Operating temperature		Ta	40 to +85	"C	With no icing or condensation	
Storage temperature		T _{stg}	55 to +125	"C	With no icing or condensation	
Solderir	ng temperature	(10 s)	126	260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

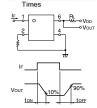
Connection Diagram

O O I II I O O II O II E	
Connection	1 6 b Load
A	1 2 5 or AC O
Connection	1 6 D Load
B	2 5 D DC
Connection C	1 6 P Load DC DC 3 4 P

■ Electrical Characteristics (Ta = 25°C)

ltern			Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	LED forward voltage		1.0	1.15	1.3	V	I _F = 10 mA
	Reverse current		IR		-	10	μΑ	V _R = 5 V
	Capacity between terr	ninals	CT		30		pF	V = 0, f = 1 MHz
	Trigger LED forward of	urrent	J _{ET}		1	3	mA	I _O = 120 mA
Output	Maximum resistance with output ON	Connection A	R _{ON}	-	17	35	Ω	I _F = 5 mA, I _C = 120 mA
		Connection B		_	11	20	Ω	I _F = 5 mA, I _O = 120 mA
		Connection C		-	6		Ω	I _F = 5 mA, I _O = 240 mA
	Current leakage when open	the relay is	ILEAK	l ess :	-	1.0	μА	V _{OFF} = 400 V
Capacity between I/O terminals			CI-O		0.8		pF	f = 1 MHz, Vs = 0 V
Insulation resistance		R _{I-O}	1,000		-	МΩ	V _{I-()} = 500 VDC, RoH < 60%	
Tum-ON time		tON		0.3	1.0	ms	I _F = 5 mA, R _I = 200 Ω,	
Turn-OFF time			tOFF		0.1	1.0	ms	V _{DD} = 20 V (See note 2

Note: 2. Turn-ON and Turn-OFF



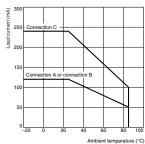
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		-	320	٧
Operating LED forward current	Ir.	5	7.5	25	mA
Continuous load current	l _O	-		120	mA
Operating temperature	Ta	20	9449	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-401H



CAT. No. J942-E2-01

MOSFET Relay - G3VM-22CO/FO

New MOSFET Relay Featuring Unique Contact Construction (1 Input Channel Drives 2 Output Channels)

- Ideal for application in line interface and data logging blocks.
- Switches minute analog signals.
- Switching AC and DC.



Approval pending

Note: The actual product is marked differently from the image shown here.

■Application Examples

- · ADSL modems and routers
- · Edge routers
- · Data storage devices

■List of Models

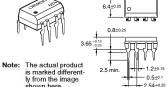
Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
DPST-NO	PCB terminals	20 VAC	G3VM-22CO	50	925
	Surface-mounting	1	G3VM-22FO		
	terminals		G3VM-22FO(TR)		1,500

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

9.66±0.25



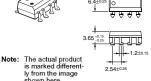








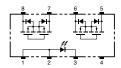
shown here.



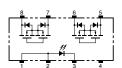


■ Terminal Arrangement/Internal Connections (Top View)

G3VM-22CO

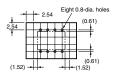


G3VM-22FO



■PCB Dimensions (Bottom View)

G3VM-22CO



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-22FO



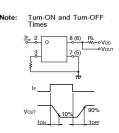
MOSFET Relay - G3VM-22CO/FO

■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	lr.	50	mA	
	Repetitive peak LED forward current	Inp	1	A	100 μs pulses, 100 pps
	LED forward current reduc- tion rate	V I™C	0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	6	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	20	٧	
	Continuous load current	I _O	150	mA	
	ON current reduction rate	Δ I _{ON} /°C	-1.5	mA/°C	Ta≥25°C
	Connection temperature	T _t	125	"C	
Dielectri output	ic strength between input and	V _{I-O}	2,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Soldering temperature (10 s)			260	°C	10 s

■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _C = 10 mA
	Reverse current	1 _R	577	7779	10	μА	V _R = 5 V
	Capacity between terminals	C ₁	577	15		pF	V = 0, f = 1 MHz
	Trigger LED forward current	ler.	222	1.5	5	mA	I _C = 150 mA
Output	Maximum resistance with output ON	R _{ON}		2	4	Ω	I _F = 5 mA, I _C = 150 mA
	Current leakage when the relay is open	I FAK		10×10 ⁶	1.0	μΑ	V _{OFF} = 20 V
Capacity	y between I/O terminals	CIO		0.8	-	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		R _{IO}	1,000	-	-	МΩ	V _{I O} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON	555%	-	1.0	ms	$I_{F} = 5 \text{ mA}, R_{I} = 200 \Omega,$
Turn-OF	F time	tOFF	_	-	1.0	ms	V ₍₃₎₍₃₎ = 20 V (See note.



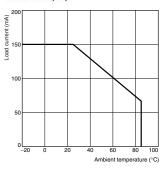
■Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	-	-	20	V
Operating LED forward current	I _F	5	/222	30	mA
Continuous load current	I _O		_	150	mA
Operating temperature	Ta	25		65	"C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-22CO(FO)



MOSFET Relay - G3VM-61CR/FR

New High-capacity MOSFET Relay Allowing Switching of a 2-A **Continuous Load Current**

- Package designed with 1 channel and 8 pins.
- Low ON-resistance of 0.12 Ω max.
- Leakage current of 1.0 nA (typical) between output terminals when they are open.







Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Semiconductor testers
- · Measurement devices
- · Security systems

■List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	60 VAC	G3VM-61CR	50	
	Surface-mounting		G3VM-61FR		
	terminals		G3VM-61FR(TR)	-	1,500

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

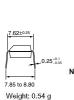
G3VM-61CR



Note: The actual product is marked differently from the image shown here.



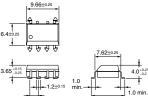
0.5±0.1 -2.54±0.25



G3VM-61FR



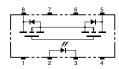




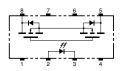
2.54+0.25 Weight: 0.54 g

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-61CR

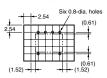


G3VM-61FR



■PCB Dimensions (Bottom View)

G3VM-61CR



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-61FR



MOSFET Relay - G3VM-61CR/FR

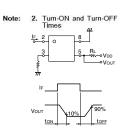
■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	l _F	50	mA	
	Repetitive peak LED forward current	IFP	1	Α	100 μs pulses, 100 pps
	LED forward current reduction rate	V I™.C	0.5	mA/°C	Ta > 25°C
	LED reverse voltage	VR	6	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	VOLL	60	٧	
	Continuous load current	lo lo	2,000	mA	
	ON current reduction rate	ΔI _{ON} /°C	-20	mA/°C	Ta ≥ 25°C
	Connection temperature	T _I	125	°C	
	ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operating temperature		Ta	-20 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Soldering temperature (10 s)			260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.2	1.4	V	I _Γ = 20 mA
	Reverse current	I _R			10	μА	V _R = 6 V
	Capacity between terminals	C ₁	772	15	1000	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFI	500		5	mA	I _O = 1 A
Output	Maximum resistance with output ON	R _{ON}	200	0 <u>000</u>	0.12	Ω	I _E = 10 mA, I _O = 1 A
	Current leakage when the relay is open	I _{I FAK}		1.0	4.0	nA	V _{OH+} = 20 V Ta = 50°C
Capacity b	petween I/O terminals	C _{I-O}	555	0.8	isees.	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		R _{I-O}	1,000	0000	1.000	MΩ	V _{I-()} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON			5.0	ms	$I_{\Gamma} = 10 \text{ mA}, R_{L} = 200 \Omega,$
Tum-OFF	Turn-OFF time				3.0	ms	V _{DD} = 20 V (See note 2.)



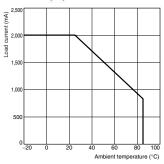
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		-	48	V
Operating LED forward current	lr .	10		30	mA
Continuous load current	lo		1 1 1	2	A
Operating temperature	Ta	25	0000	50	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-61CR(FR)



MOSFET Relay - G3VM-62C1/F1

New Analog-switching MOSFET Relays with 2 Output channels. Dielectric Strength of 2.5 kVAC between I/O.

- Switches minute analog signals.
- Dielectric strength of 2,500 Vrms between I/O.
- Surface-mounting models included in series.



shown here.



The actual product is marked differently from the image

9.6610.2



■Application Examples

- · Measurement devices
- · Security systems

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
DPST-NO	PCB terminals	60 VAC	G3VM-62C1	50	
	Surface-mounting		G3VM-62F1		
	terminals		G3VM-62F1(TR)		1,500

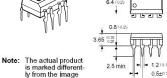
Note:

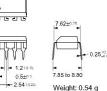
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



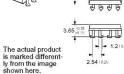
shown here







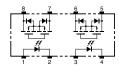
G3VM-62F1



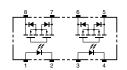


■ Terminal Arrangement/Internal Connections (Top View)

G3VM-62C1

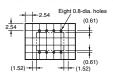


G3VM-62F1



■PCB Dimensions (Bottom View)

G3VM-62C1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

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MOSFET Relay - G3VM-62C1/F1

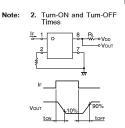
■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I _F	50	m/A	
	Repetitive peak LED forward current	Ire	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	Al _F /°C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	60	٧	
	Continuous load current	lo	500	mA	
	ON current reduction rate	Δ I _{ON} /°C	-5.0	mA/°C	Ta ≥ 25°C
	Connection temperature	T _i	125	°C	
	ic strength between input and See note 1.)	V _{I-O}	2,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Solderii	ng temperature (10 s)		260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

ltem		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions	
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _Γ = 10 mA	
	Reverse current	I _R		775	10	μА	V _R = 5 V	
	Capacity between terminals	Cı		30		pF	V = 0, f = 1 MHz	
	Trigger LED forward current	I _{F1}		1.6	3	mA	I ₍₎ = 500 mA	
Output	Maximum resistance with output ON	R _{ON}	-	1.0	2.0	Ω	I _F = 5 mA, I _O = 500 mA	
	Current leakage when the relay is open	I _{I FAK}	-	-	1.0	μА	V _{OH+} = 60 V	
Capacity	y between I/O terminals	CIO		0.8		pF	f = 1 MHz, Vs = 0 V	
Insulation resistance		RIO	1,000	-	-	МΩ	V _{I O} = 500 VDC, RoH ≤ 60%	
Turn-ON time		tON		0.8	2.0	ms	$I_F = 5$ mA, $R_I = 200$ Ω,	
Turn-OF	Turn-OFF time			0.1	0.5	ms	V _(N) = 20 V (See note 2	



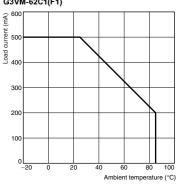
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}			48	V
Operating LED forward current	I _E	5	7.5	25	mA
Continuous load current	l _O		-	500	mA
Operating temperature	Ta	20	_	65	"C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-62C1(F1)



MOSFET Relay - G3VM-352C/F

New Series with 350-V Load Voltage Including Models with 2 Outputs.

- Upgraded G3VM-W Series.
- Continuous load current of 120 mA.
- Dielectric strength of 2.500 Vrms between I/O.





■Application Examples

- · Measurement devices
- · Security systems
- · Amusement machines

■ List of Models

Note:	The actual product is marked differently from the image shown here.

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape	
DPST-NO PCB terminals 350 VAC		350 VAC	G3VM-352C	50		
	Surface-mounting	1	G3VM-352F	1		
	terminals		G3VM-352F(TR)	5000	1,500	

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



The actual product

ly from the image

shown here.

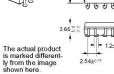
is marked different-







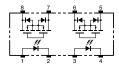
G3VM-352F



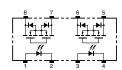


■ Terminal Arrangement/Internal Connections (Top View)

G3VM-352C

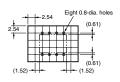






■ PCB Dimensions (Bottom View)

G3VM-352C



■Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-352F



MOSFET Relay - G3VM-352C/F

■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	l _F	50	mA	Ĭ.
	Repetitive peak LED forward current	IFP	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	A I _L P°C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	350	٧	Ĭ.
	Continuous load current	lo:	120	mA	
	ON current reduction rate	∆ l _{ON} /°C	-1.2	mA/°C	Ta ≥ 25°C
	Connection temperature	T	125	°C	
	ic strength between input and See note 1.)	V _{I-O}	2,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Soldering temperature (10 s)			260	°C	10 s

 The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

Note:

■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _F = 10 mA
	Reverse current	I _R	1 00 6		10	μА	V _R = 5 V
	Capacity between terminals	C ₁		30		pF	V = 0, f = 1 MHz
	Trigger LED forward current	Jer	-	1	3	mA	I _O = 120 mA
Output	Maximum resistance with output ON	R _{ON}	H TT H	25	35	Ω	I _F = 5 mA, I _O = 120 mA, t < 1 s
			(100)	35	50	Ω	I _F = 5 mA, I _O = 120 mA
	Current leakage when the relay is open	I _{I FAK}	_	V-35	1.0	μΑ	V _{OH} = 350 V
Capacit	y between I/O terminals	CLO	1222	0.8	22	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		R _{IO}	1,000	1200	200	МΩ	V _{I O} = 500 VDC, RoH < 60%
Turn-ON time		tON	15553	0.3	1.0	ms	$I_{F} = 5 \text{ mA}, R_{I} = 200 \Omega,$
Turn-OF	Turn-OFF time		14/15/15	0.1	1.0	ms	V _{[3]3} = 20 V (See note 2.)

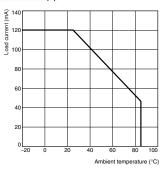
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		_	280	V
Operating LED forward current	I _F	5	7.5	25	mA
Continuous load current	I _O		1	100	mA
Operating temperature	Ta	20		65	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-352C(F)



MOSFET Relay - G3VM-354C/C1/F/F1

Analog-switching MOSFET Relay with DPST-NC (Double-pole, Singlethrow, Normally Closed) Contacts. General-purpose Series Added.

- Switches minute analog signals.
- Switching AC and DC.
- General-purpose series (high ON-resistance) added.

■ Application Examples

- · Electronic automatic exchange systems
- · Security systems
- · Datacom (modem) systems
- · FA systems
- · Measurement devices





Note: The actual product is marked differently from the image shown here.

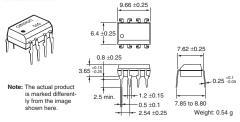
■ List of Models

Contact form Terminals Lo		Load Voltage	Model	Minimum packaging unit		
		(peak value)		Number per stick	Taping quantity	
DPST-NC	PCB terminals	350 VAC	G3VM-354C	50	-	
			G3VM-354C1]		
	Surface-mounting		G3VM-354F	1		
	terminals		G3VM-354F1			
			G3VM-354F(TR)	_	1,500	
			G3VM-354F1(TR)]		

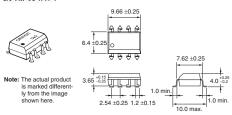
Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3 VM-354C/C1



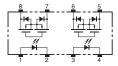
G3 VM-354F/F1



Weight: 0.54 a

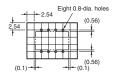
■ Terminal Arrangement/Internal Connections (Top View) G3 VM-354F/F1

G3 VM-354C/C1



■ PCB Dimensions (Bottom View)

G3 VM-354C/C1



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3 VM-354F/F1



MOSFET Relay - G3VM-354C/C1/F/F1

■ Absolute Maximum Ratings (Ta = 25°C)

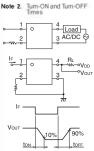
	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED torward current	lp:	50	mA	
	Repetitive peak LED forward current	Ipp	1	A	100 μs pulses, 100 pps
	LED torward current reduction rate	Δl _p /°C	-0.5	mA/°C	Ta≥25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	TJ	125	°C	
Output	Output dielectric strength	VOFF	350	٧	
	Continuous load current	10	150 (100)	mA	
	ON current reduction rate	Δl _{ON} /°C	-1.5 (-1)	mA/°C	Ta≥25°C
	Connection temperature	TJ	125	°0	
Dielectric s	strength between input and output (See note 1.)	V _{I-O}	2,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to 85	°C	With no icing or condensation
Storage temperature		T _{stg}	-55 to 125	°C	With no icing or condensation
Soldering temperature (10 s)			260	°C	10 s

Note:1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

Values inside parentheses () are for G3VM-354C1/F1.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions
Input	LED forward voltage	VF	1.0	1.15	1.3	٧	$I_{\rm F} = 10 \text{mA}$
	Reverse current	I _R			10	μА	V _R = 5.V
	Capacity between terminals	CT		30	40	pF	V = 0, 1 = 1 MHz
	Trigger LED forward current	1 _{FT}		1	3	mA.	l _{OFF} = 10 μA
Output	Maximum resistance with output ON	RON		15 (30)	25 (50)	Ω	I _O = 150 mA
	Current leakage when the relay is open	LEAK	***		1.0	μА	I _F = 5 mA, V _{QFF} = 350 \
Capacit	y between I/O terminals	C _{1-O}		0.8	77.	pF	f = 1 MHz, V _s = 0 V
Insulatio	on resistance	Rio	1,000		rec (МΩ	V _{I O} = 500 V DO, R _{OH} ≤ 60%
Tum-Of	V time	ION		0.1 (0.25)	1.0 (0.5)	ms	$I_F = 5 \text{ mA}, R_L = 200 \Omega,$
Tum-OFF time		IOFF		1.0 (0.5)	3 0 (1)	ms	V _{DD} = 20 V (See note 2.



Values inside parentheses () are for G3VM-354C1/F1.

■ Recommended Operating Conditions

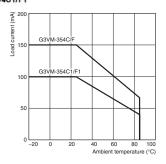
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	-	100	280	V
Operating LED to ward current	l _F	5		25	mA
Confinuous load current	10			150 (100)	mA
Operating temperature	T _a	-20	***	65	°0

Values inside parentheses () are for G3VM-354C1/F1.

Engineering Data

Load Current vs. Ambient Temperature G3VM-354C/F G3VM-354C1/F1



New MOS FET Relay with Both SPST-NO and SPST-NC Contacts Incorporated in a Single DIP Package.

General-purpose Series Added.

- SPST-NO/SPST-NC models now included in the 350-V load voltage series.
- Continuous load current of 120 mA (90 mA).
- Dielectric strength of 2,500 Vrms between I/O.
- General-purpose series (high ON-resistance) added.

■ Application Examples

- · Measurement devices
- · Security systems





NEW

Note: The actual product is marked differently from the image shown here.

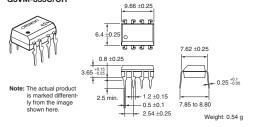
· Amusement machines

■ List of Models

Contact form	Terminals	Load Voltage	Model	Minimum pa	ckaging unit
		(peak value)		Number per stick	Taping quantity
SPST-NO/SPST-NC	PCB terminals	350 VAC	G3VM-355CR	50	-
			G3VM-355C		
	Surface-mounting		G3VM-355FR		
	terminals		G3VM-355F		
			G3VM-355FR(TR)	_	1,500
			G3VM-355F(TR)		

■ Dimensions

Note: All units are in millimetres unless otherwise indicated. G3VM-355C/CR

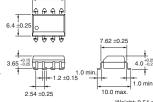


G3VM-355F/FR



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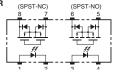


9.66 ±0.25

Weight: 0.54 g

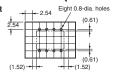
■ Terminal Arrangement/Imternal Connections (Top View)

G3VM-355C/CR

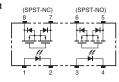


■ PCB Dimensions (Bottom View)

G3VM-355C/CR



G3VM-355F/FR



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-355F/FR



90%

10%

■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	F	50	mA	
	Repetitive peak LED forward current	FP	1	A	100 µs pulses, 100 pps
	LED forward current reduction rate	Δlp/°C	-0.5	mA/°C	Ta≥25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	TJ	125	°C	
Output	Output dielectric strength	VOFF	350	V	
	Continuous load current	ю	120 (100)	mA	
	ON current reduction rate	∆I _{ON} PC	-1.2 (-1)	mA/°C	Ta≥25°C
	Connection temperature	Tu	125	*C	
Dielectric st	rength between input and output (See note 1.)	Vio	2,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to 85	†C	With no loing or condensation
Storage temperature		T _{stg}	~55 to 125	*0	With no loing or condensation
Soldering temperature (10 s)			260	°C	10 s

Note 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

Values inside parentheses () are for G3VM-355C/F.

■ Electrical Characteristics (Ta = 25°C)

	Item	Ŭ.	Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions
Input	Dut LED forward voltage Reverse current		V _F	1.0	1.15	1.3	V	$I_F = 10 \text{ mA}$
			l _{ft}	***	***	10	μA	V _{Pl} = 5 V
	Capacity b	etween termi-	CT		30		pF	V = 0, f = 1 MHz
		D forward cur-	IFT		1	3	mA	SPST-NO: Io = 120 mA
rent							SPST-NC: I _{OFF} = 10 µA	
	Maximum output ON	esistance with	h R _{ON}	400	15 (40)	25 (50)	Ω	SPST-NO: l _F = 5 mA, l _O = 120 mA
								SPST-NC: I _F = 0 mA, I _O = 120 mA
	Current les relay is ope	kage when the	LEAK			1.0	μА	V _{OFF} = 350 V
Capacit	y between I/C	terminals	CIO	***	0.8		ρF	f = 1 MHz, V ₈ = 0 V
Insulation resistance		Rio	1,000		-	МΩ	V _{I O} = 500 V DC, R _{OH} ≤ 60%	
Turn-ON time		SPST-NO	tON		(0.9)	1.0	ms	I _F = 5 mA, R _L = 200 Ω, V _{DD}
		SPST-NC		***	(0.25)	1.0	ms	= 20 V (See note 2.)
Turn-OF	Ftime	SPST-NO	tOFF	***	(0.15)	1.0	ms	
		SPST-NC		***	(0.5)	3.0(1)	ms	

90%

Note 2. Turn-ON and Turn-OFF Times

Values inside parentheses () are for G3VM-355C/F.

■ Recommended Operating Conditions

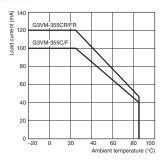
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	[280	٧
Operating LED forward current	l _F	5	***	25	mA
Continuous load current	10	1	(100)	120 (100)	mA:
Operating temperature	Ta	-20	(100)	65	°C

Values inside parentheses () are for G3VM-355C/F.

Engineering Data

Load Current vs. Ambient Temperature G3VM-355C/F G3VM-355CR/FR



MOSFET Relay - G3VM-402C/F

New Expanded Range of Analog switching MOSFET Relays with 400-V Load Voltage with 2 Output Channels.

- A 2-channel Relay now included in the 400-V load voltage series.
- Continuous load current of 120 mA.
- Dielectric strength of 2,500 Vrms between I/O.



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The actual product is marked differently from the image

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■Application Examples

- · Measurement devices
- · Security systems
- · Amusement machines

■List of Models

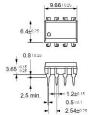
Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
DPST-NO	PCB terminals	400 VAC	G3VM-402C	50	
	Surface-mounting		G3VM-402F		
	terminals		G3VM-402F(TR)		1,500

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



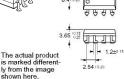
Note: The actual product is marked differently from the image







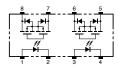
G3VM-402F



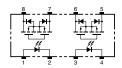


■ Terminal Arrangement/Internal Connections (Top View)

G3VM-402C

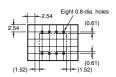


G3VM-402F



■PCB Dimensions (Bottom View)

G3VM-402C



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-402F



MOSFET Relay - G3VM-402C/F

■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	l _E	50	mA	
	Repetitive peak LED forward current	Ire	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	A I⊬°C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	400	V	
	Continuous load current	lo	120	mA	
	ON current reduction rate	Δ I _{ON} /°C	-1.2	mA/°C	Ta ≥ 25°C
	Connection temperature	T _i	125	°C	
Dielectroutput (ic strength between input and (See note 1.)	V _{I-O}	2,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to +85	°C	With no icing or condensation
Storage temperature		T _{stg}	-55 to +125	°C	With no icing or condensation
Soldering temperature (10 s)			260	°C	10 s

Note:

1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	V _F	1.0	1.15	1.3	V	I _F = 10 mA
	Reverse current	I _R	SEE 5.5	J=1 .	10	μА	V _H = 5 V
	Capacity between terminals	Cı	(TEX.)	30	leges!	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{FT}	55%	1	3	mA	I ₍₎ = 120 mA
Output	Maximum resistance with output ON	RON	1 <u>220</u> 0	18	35	Ω	I _F = 5 mA, I _C = 120 mA
	Current leakage when the relay is open	I FAK		-	1.0	μA	V _{OFF} = 400 V
Capacity	y between I/O terminals	CIO	1227	0.8	-	pF	f = 1 MHz, Vs = 0 V
Insulation resistance		Rio	1,000	-	-	МΩ	V _{I O} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON			1.0	ms	$I_{+} = 5 \text{ mA}, R_{1} = 200 \Omega,$
Turn-OF	Turn-OFF time		2227		1.0	ms	V _{III)} = 20 V (See note 2

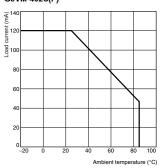
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		era:	320	V
Operating LED forward current	J _F	5	7.5	25	mA
Continuous load current	Io	2000		100	mA
Operating temperature	Ta	20		65	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-402C(F)



MOSFET Relay - G3VM-62J1

New MOSFET Relay Designed for Switching Minute Signals and Analog Signals. Has 2 Channels and a 60-V Load Voltage

- Continuous load current of 400 mA.
- Dielectric strength of 1,500 Vrms between I/O.



Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Broadband systems
- · Measurement devices
- · Data Loggers
- · Amusement machines

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
DPST-NO	Surface-mounting	60 VAC	G3VM-62J1	50	
	terminals		G3VM-62J1(TR)		2,500

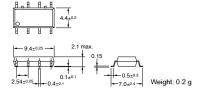
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-62J1

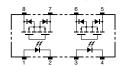


Note: The actual product is marked differently from the image shown here.



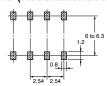
■Terminal Arrangement/Internal Connections (Top View)

G3VM-62J1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-62J1



■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I _F	50	mA	
	Repetitive peak LED forward current	ITP	1	Α	100 μs pulses, 100 pps
	LED forward current reduc- tion rate	Λ I _L P°C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	VOFF	60	v	
	Continuous load current	Io.	400	mA	
	ON current reduction rate	ΔI _{ON} /°C	-4.0	mA/°C	Ta ≥ 25°C
	ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operati	ng temperature	Ta	40 to +85	°C	With no icing or condensation
Storage temperature		T _{stg}	-55 to +125	°C	With no icing or condensation
Soldering temperature (10 s)		1222	260	°C	10 s

The dielectric strength between the input and output was checked by applying voltage be-tween all pins as a group on the LED side and all pins as a group on the light-receiving side.

Note:

■ Electrical Characteristics (Ta = 25°C)

ltem		Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions	
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _Γ = 10 mA	
	Reverse current	IR			10	μА	V _R = 5 V	
	Capacity between terminals	C ₁		30		pF	V = 0, f = 1 MHz	
	Trigger LED forward current	I _{F1}		1.6	3	mA	I ₍₎ = 400 mA	
Output	Maximum resistance with output ON	R _{ON}	1 170 11	1.0	2.0	Ω	I _F = 5 mA, I _C = 400 mA	
	Current leakage when the relay is open	I HAK	223	25	1.0	μA	V _{OFF} = 60 V	
Capacity	y between I/O terminals	CIO		0.8		pF	f = 1 MHz, Vs = 0 V	
Insulation resistance		Rio	1,000	1225	_	МΩ	V _{I O} = 500 VDC, RoH < 60%	
Turn-ON time		tON	13-00-01	0.8	2.0	ms	$I_{F} = 5 \text{ mA}, R_{I} = 200 \Omega,$	
Turn-OFF time		tOFF		0.1	0.5	ms	V ₍₃₁₎ = 20 V (See note	

2. Tum-ON and Turn-OFF Times IF. (3)1 8(6)

Note:

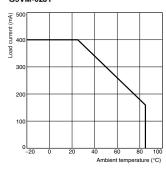
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V ₁₃₁₃	-	-	48	V
Operating LED forward current	I _F	5	7.5	25	mA
Continuous load current	lo.	n as tri		400	mA
Operating temperature	Ta	20	1	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-62J1



Slim, 2.1-mm High MOSFET Relay with Miniature, Flat, 8-pin SOP Package

- New models with 2 channels and an 8-pin SOP package now available in the 200-V load voltage series.
- Continuous load current of 200 mA.
- Dielectric strength of 1,500 Vrms between I/O.

OMRON 743 NEW 91

Note: The actual product is marked differently from the image shown here.

■Application Examples

- · Broadband systems
- · Measurement devices
- · Data loggers
- · Amusement machines

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
DPST-NO	Surface-mounting	200 VAC	G3VM-202J1	50	
	terminals		G3VM-202J1(TR)		2,500

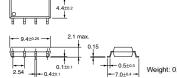
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-202J1

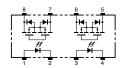


Note: The actual product is marked differently from the image shown here.



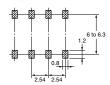
■Terminal Arrangement/Internal Connections (Top View)

G3VM-202J1



■Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-202J1



MOSFET Relays

■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I _F	50	mA	
	Repetitive peak LED forward current	I _{Lb}	1	А	100 μs pulses, 100 pps
	LED forward current reduction rate	V I™C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	200	٧	
	Continuous load current	I _O	200	mA	
	ON current reduction rate	ΔI _{ON} /°C	-2.0	mA/°C	Ta≥25°C
	ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operating temperature		Ta	40 to +85	"C	With no icing or condensation
Storage temperature		T _{stg}	-55 to +125	°C	With no icing or condensation
Soldering temperature (10 s)		22	260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	VΓ	1.0	1.15	1.3	V	I _C = 10 mA
	Reverse current	IR			10	μА	V _R = 5 V
	Capacity between terminals	Cı		30		pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{F1}		1	3	mA	I _O = 200 mA
Output	Maximum resistance with output ON	Ron	===	5	8	Ω	I _F = 5 mA, I _C = 200 mA
	Current leakage when the relay is open	I _{I FAK}	-	3330	1.0	μА	V _{OFF} = 200 V
Capacity	y between I/O terminals	CIO	===	0.8		pF	f = 1 MHz, Vs = 0 V
Insulatio	n resistance	Rio	1,000	1557	.000	МΩ	V _{I O} = 500 VDC, RoH < 60%
Turn-ON time		tON		0.6	1.5	ms	$I_F = 5 \text{ mA}, R_1 = 200 \Omega,$
Turn-OF	Turn-OFF time			0.1	1	ms	V _{IN)} = 20 V (See note 2

Note: 2. Turn-ON and Turn-OFF Times (4)2 (4)2 (4)2 (4)2 (5) (6) (7)5 (

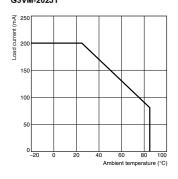
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	-	150	200	V
Operating LED forward current	I _F	5	7.5	25	mA
Continuous load current	l _o			130	mA.
Operating temperature	Та	20		65	°C

■Engineering Data

Load Current vs. Ambient Temperature G3VM-202J1



Slim, 2.1-mm High Relay Incorporating a MOSFET Optically Coupled with an Infrared LED in a Miniature, Flat SOP Package

- New models with 2 channels and an 8-pin SOP package included in 350-V load voltage series.
- Continuous load current of 110 mA.
- Dielectric strength of 1,500 Vrms between I/O.



Note: The actual product is marked differently from the image

■Application Examples

- Broadband systems
- · Measurement devices
- Data loggers
- · Amusement machines

■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
DPST-NO	Surface-mounting	350 VAC	G3VM-352J	50	
	terminals		G3VM-352J(TR)	7000	2,500

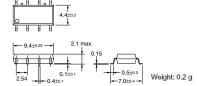
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-352J

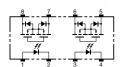


Note: The actual product is marked differently from the image shown here.



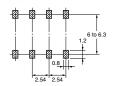
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-352J



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-352J



■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	l _F	50	mA.	
	Repetitive peak LED forward current	ITP	1	A	100 μs pulses, 100 pps
	LED forward current reduc- tion rate	Λ I _L /°C	-0.5	mA/°C	Ta > 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	Vorr	350	V	
	Continuous load current	I _O	110	mA	
	ON current reduction rate	∆ I _{ON} /°C	-1.1	mA/°C	Ta≥25°C
	ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min
Operati	ng temperature	Ta	40 to +85	°C	With no icing or condensation
Storage	temperature	T _{stg}	-55 to +125	°C	With no icing or condensation
Solderir	ng temperature (10 s)		260	°C	10 s

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input	LED forward voltage	Vr	1.0	1.15	1.3	V	I _Γ = 10 mA
	Reverse current	IR	-		10	μА	V _R = 5 V
	Capacity between terminals	Cı		30	-	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFL		1	3	mA	I _O = 110 mA
Output	Maximum resistance with output ON	R _{ON}	_	25	35	Ω	I _F = 5 mA, I _O = 110 mA, t < 1 s
			_	35	50	Ω	I _F = 5 mA, I _O = 110 mA
	Current leakage when the relay is open	I _{I FAK}	-	-	1.0	μА	V _{OFF} = 350 V
Capacity	y between I/O terminals	C ₁₀		0.8	_	pF	f = 1 MHz, Vs = 0 V
Insulatio	n resistance	Rio	1,000	-	-	MΩ	V _{I O} = 500 VDC, RoH < 60%
Turn-ON time		tON	-	0.3	1	ms	I _F = 5 mA, R _I = 200 Ω,
Tum-OF	Tum-OFF time			0.1	1	ms	V _{I)I)} = 20 V (See note 2.

Note: 2. Turn-ON and Turn-OFF Times



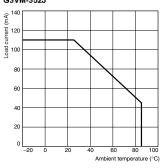
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}		_	280	V
Operating LED forward current	I _F	5	10	25	mA
Continuous load current	I _O	1 0.000 C		100	mA
Operating temperature	Ta	20	=	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-352J



Analog-switching MOSFET Relay with DPST-NC (Double-pole, Single-throw, Normally Closed) Contacts. General-purpose Series Added.

- New models in 350-V load voltage series with DPST-NC contacts and an 8-pin SOP package.
- Continuous load current of 120 mA (90 mA).
- Dielectric strength of 1,500 Vrms between I/O.
- General-purpose series (high ON-resistance) added.



Note: The actual product is marked differently from the image shown here.

■ Application Examples

- · Broadband systems
- Measurement devices
- Data loggers
- · Amusement machines

■ List of Models

Contact form	Terminals	Load Voltage	Model	Minimum packaging unit		
		(peak value)		Number per stick	Taping quantity	
DPST-NC	Surface-mounting	350 VAC	G3VM-354J	50	-	
	terminals		G3VM-354J1			
			G3VM-354J(TR)	-	2,500	
			G3VM-354J1(TR)			

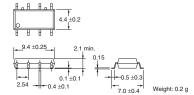
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-354J/J1

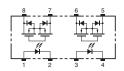


Note: The actual product is marked differently from the image shown here.



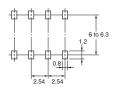
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-354J/J1



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-354J/J1



■ Absolute Maximum Ratings (Ta = 25°C)

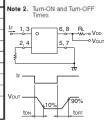
8	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	l _F	50	mA	
	Repetitive peak LED torward current	lpp.	1	A	100 µs pulses, 100 pps
	LED forward current reduction rate	Δlp/°C	-0.5	mA/°C	Ta≥25°C
	LED reverse voltage	VR	5	٧	
	Connection temperature	TJ	125	°C	
Output	Output dielectric strength	VOFF	350	٧	
	Continuous load current	lo .	120 (90)	mA	
	ON current reduction rate	Δl _{ON} /°C	-1.2 (-0.9)	mA/°C	Ta ≥ 25°C
	Connection temperature	TJ	125	°C	
Dielectric s	trength between input and output (See note 1.)	Vio	1,500	Vms	AC for 1 min
Operating	temperature	Ta	-40 to 85	90	With no loing or condensation
Storage ter	mperature	T _{stg}	-55 to 125	90	With no icing or condensation
Soldering t	Soldering temperature (10 s)		260	°C	10 8

Note 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side

Values inside parentheses () are for G3VM-354J1.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions
Input	LED forward voltage	VF	1.0	1.15	1.3	V	l _p = 10 mA
	Reverse current	l _B			10	μА	V _R = 5 V
	Capacity between terminals	C _T	***	30	1997	pF	V = 0, t = 1 MHz
	Trigger LED forward current	lea .	***	1	3	mA	l _{OFF} = 10 μA
Output	Maximum resistance with output ON	RON	***	15 (30)	25 (50)	Ω	l _D = 120 mA
	Current leakage when the relay is open	LEAK	***		1.0	μА	V _{OFF} = 350 V, I _F = 5 mA
Capacit	y between I/O terminals	CLO	227	0.8	122	pF	t = 1 MHz, V _s = 0 V
Insulation	on resistance	Rio	1,000	***	. 171	MΩ	V _{IO} = 500 V DC, R _{OH} ≤ 60%
Tum-Of	N time	tON	***	(0.25)	1.0 (0.5)	ms	$I_{\rm E} = 5 \text{mA}, R_{\rm L} = 200 \Omega,$
Tum-OF	FF time	tOFF		(0.5)	3.0 (1)	ma	V _{DD} = 20 V (See note 2.)



Values inside parentheses () are for G3VM-354J1.

■ Recommended Operating Conditions

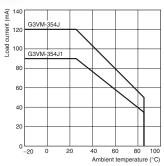
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	***	***	280	V
Operating LED forward current	l _F	5		25	mA
Continuous load current	10	***	***	120 (90)	mA
Operating temperature	Ta	-20		65	°C

Values inside parentheses () are for G3VM-354J1.

Engineering Data

Load Current vs. Ambient Temperature G3VM-354J/J1



New MOSFET Relay with Both SPST-NO and SPST-NC Contacts Incorporated in a Single SOP Package.

General-purpose Series Added.

- SPST-NO/SPST-NC models with an 8-pin SOP package now available in the 350-V load voltage series.
- Continuous load current of 120 mA (90 mA).
- Dielectric strength of 1,500 Vrms between I/O.
- General-purpose series (high ON-resistance) added.



Note: The actual product is marked differently from the image shown here.

■ Application Examples

- Broadband systems
- Measurement devices
- Data loggers
- · Amusement machines

■ List of Models

Contact form	Terminals	Load Voltage	Model	Minimum pa	ckaging unit
		(peak value)		Number per stick	Taping quantity
SPST-NO/SPST-NC	Surface-mounting	350 VAC	G3VM-355JR	50	-
	terminals		G3VM-355J		
			G3VM-355JR(TR)	-	2,500
			G3VM-355J(TR)		

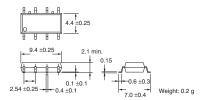
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3 VM-355J/JR

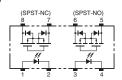


Note: The actual product is marked differently from the image shown here.



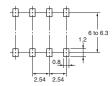
Terminal Arrangement/Internal Connections (Top View)

G3 VM-355J/JR



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-355J/JR



■ Absolute Maximum Ratings (Ta = 25°C)

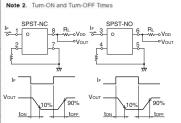
	Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	le:	50	mA	
	Repetitive peak LED forward current	Ipp	1	A	100 µs pulses, 100 pps
	LED forward current reduction rate	ΔIp/C	-0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	Tu	125	*C	
Output	Output dielectric strength	Vorr	350	V	
	Continuous load current	10	120 (90)	mA	
	ON current reduction rate	∆lon/°C	-1.2 (-0.9)	mA/°C	Ta ≥ 25°C
	Connection temperature	Tj	125	*0	
Dielectric st	rength between input and output (See note 1.)	Vio	1,500	Vrms	AC for 1 min
Operating te	mperature	Ta	-40 to 85	*C	With no icing or condensation
Storage tem	perature	Tota	-65 to 125	*C	With no icing or condensation
Soldering te	mperature (10 s)		260	*C	10 s

Note 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

Values inside parentheses () are for G3VM-355J.

■ Electrical Characteristics (Ta = 25°C)

	Iter	n	Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions
Input	LED forward volt- age		VF	1,0	1.15	1.3	V	I _F = 10 mA
	Reverse current		I _B		744	10	μΑ	V _R = 5 V
	Capacity between terminals		C _T	***	30		pF	V = 0, f = 1 MHz
	Trigger LED for- ward current		FT	***	f =	3	mA	SPST-NO: I _O = 120 mA
			I _{FC}	1				SPST-NC: I _{OFF} = 10 µA
Out-	Maximum resis- tance with output ON		R _{ON}	in and	15 (40)	25 (50)	Ω	SPST-NO: I _F = 5 mA, I _O = 120 mA
put								SPST-NC: Ip = 0 mA, IQ = 120 mA
	Current leakage when the relay is open		LEAK	***	100	1.0	μА	V _{OFF} = 950 V
Capac	ity betwe	een I/O ter-	Ci-o	***	0.8	227	pF	f = 1 MHz, V ₈ = 0 V
Insulat	tion resis	tance	Rio	1,000	903		MQ	V _{I-O} = 500 V DC, R _{OH} ≤ 60%
Turn-ON time		SPST-NO	10N		(0.3)	1.0	ms	I _F = 5 mA, R _L = 200 Ω.
		SPST-NC			(0.25)	1.0	ms	V _{DD} = 20 V (See note 2.)
Turn-OFF time		SPST-NO	10FF	***	(0.15)	1.0	mg	
		SPST-NC	1		(0.5)	3.0 (1)	ms	



Values inside parentheses () are for G3VM-355J.

Recommended Operating Conditions

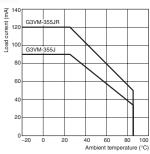
Use the G3VM under the following conditions so that the Relay will operate properly.

ltom	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}	770	***	280	V
Operating LED forward current	le .	5		25	mA
Continuous load current	10		***	120 (90)	mA
Operating temperature	Ta	-20	H-1	65	°C

Values inside parentheses () are for G3VM-355J.

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-355J/JR



Expanded Range of Analog-Switching MOSFET Relays with 400-V Load Voltage

- New models with two channels and an 8-pin SOP package included in 400-V load voltage series.
- Continuous load current of 120 mA.
- Dielectric strength of 1,500 Vrms between I/O.

■Application Examples

- · Broadband systems
- · Measurement devices
- · Data loggers
- · Amusement machines

■List of Models

omnon 743	onnon 2 4 3	
	<u>NEW</u>	<i>1R</i>

Note: The actual product is marked differently from the image shown here.

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
DPST-NO	Surface-mounting	400 VAC	G3VM-402J	50	
	terminals		G3VM-402J(TR)		2,500

■ Dimensions

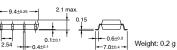
Note: All units are in millimeters unless otherwise indicated.

G3VM-402J



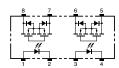
Note: The actual product is marked differently from the image shown here.





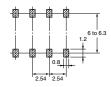
■Terminal Arrangement/Internal Connections (Top View)

G3VM-402J



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-402J



MOSFET Relays

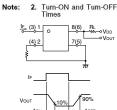
■ Absolute Maximum Ratings (Ta = 25°C)

	Item	Symbol	Rating	Unit	Measurement Conditions		
Input	LED forward current	l _F	50	mA			
	Repetitive peak LED forward current	IFP	1	A	100 μs pulses, 100 pps		
	LED forward current reduction rate	Λ I _L P°C	-0.5	mA/°C	Ta > 25°C		
	LED reverse voltage	VR	5	V			
	Connection temperature	Tj	125	°C			
Output	Output dielectric strength	Vorr	400	٧			
	Continuous load current	lo .	120	mA			
	ON current reduction rate	ΔI _{ON} /°C	-1.2	mA/°C	Ta ≥ 25°C		
	ic strength between input and See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min		
Operati	ng temperature	Ta	40 to +85	°C	With no icing or condensation		
Storage temperature		T _{stg}	-55 to +125	°C	With no icing or condensation		
Soldering temperature (10 s)			260	°C	10 s		

Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■ Electrical Characteristics (Ta = 25°C)

	Item	Symbol	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions	
Input	LED forward voltage	Vr	1.0	1.15	1.3	V	I _Γ = 10 mA	
	Reverse current	IR	-		10	μA	V _R = 5 V	
	Capacity between terminals	Cı	-	30	==	pF	V = 0, f = 1 MHz	
	Trigger LED forward current	I _{F1}	=	1	3	mA	I _O = 120 mA	
Output	Maximum resistance with output ON	R _{ON}	===	17	35	Ω	I _F = 5 mA, I _O = 120 mA	
	Current leakage when the relay is open	I _{I FAK}	-	_	1.0	μΑ	V _{OH+} = 400 V	
Capacit	y between I/O terminals	CIO	-	0.8	-	pF	f = 1 MHz, Vs = 0 V	
Insulation resistance		Rio	1,000		-	МΩ	V _{I O} = 500 VDC, RoH < 60%	
Turn-ON time		tON		0.3	1	ms	I _F = 10 mA, R _I = 200 Ω,	
Turn-OFF time		tOFF		0.1	1	ms	V ₍₃₎₍₎ = 20 V (See note 2.)	



■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V _{DD}			320	٧
Operating LED forward current	I _E	5	7.5	25	mA
Continuous load current	lo lo	1		120	mA
Operating temperature	Ta	20	223	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature

G3VM-402J

