MOS FET Relays

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





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

■List of Models

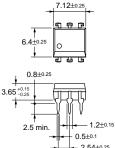
Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	350 VAC	G3VM-351B	50	
	Surface-mounting		G3VM-351E		
	terminals		G3VM-351E(TR)		1,500

■ Dimensions

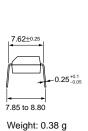
Note: All units are in millimeters unless otherwise indicated.



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

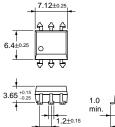


- 2.54±0.25



G3VM-351E

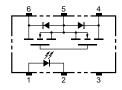
The actual product Note: is marked differently from the image shown here.



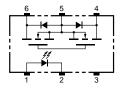


■ Terminal Arrangement/Internal Connections (Top View)

G3VM-351B

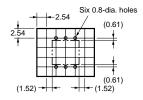


G3VM-351E



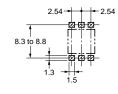
■ PCB Dimensions (Bottom View)

G3VM-351B



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

G3VM-351E

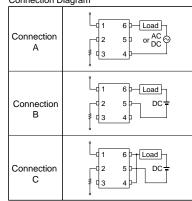


■ Absolute Maximum Ratings (Ta = 25°C)

Item			Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current		I _F	50	mA	
	Repetitive peak LED forward current		I _{FP}	1	Α	100 μs pulses, 100 pps
	LED forward current reduction rate		Δ 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		V _{OFF}	350	V	
	Continuous load current	Connection A	I _O	120	mA	
		Connection B		120		
		Connection C		240		
	ON current reduction rate	Connection A	∆ I _{ON} /°C	-1.2	mA/°C	Ta ≥ 25°C
		Connection B		-1.2		
		Connection C		-2.4		
	Connection temperature		Tj	125	°C	
Dielectric strength between input and output (See note 1.)		V _{I-O}	2,500	Vrms	AC for 1 min	
Operati	erating temperature		Ta	-40 to +85	°C	With no icing or condensation
Storage	Storage temperature		T _{stg}	-55 to +125	°C	With no icing or condensation
Solderin	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.

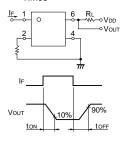
Connection Diagram



■ Electrical Characteristics (Ta = 25°C)

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			10	μΑ	V _R = 5 V	
	Capacity between terminals		C _T		30		pF	V = 0, f = 1 MHz	
	Trigger LED forward current		I _{FT}		1	3	mA	I _O = 120 mA	
Output	Maximum resistance with output ON	Connection A	R _{ON}		25	5 35	Ω	I _F = 5 mA, I _O = 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 _F = 5 mA, I _O = 240 mA	
	Current leakage when the relay is open		I _{LEAK}			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			МΩ	V_{I-O} = 500 VDC, RoH \leq 60%		
Turn-ON time			tON		0.3	1.0	ms	$I_F = 5$ mA, $R_L = 200 \Omega$,	
Turn-OFF time			tOFF		0.1	1.0	ms	V _{DD} = 20 V (See note 2.	

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



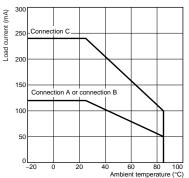
■Recommended Operating Conditions

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}			280	V
Operating LED forward current	I _F	5	10	25	mA
Continuous load current	I _O			100	mA
Operating temperature	Ta	- 20		65	°C

■ Engineering Data

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



■ Safety Precautions

Refer to page 6 for precautions common to all G3VM models.