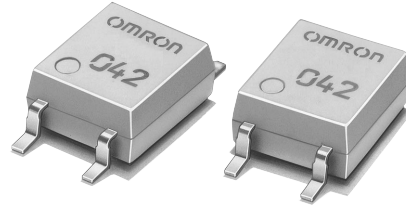


MOS FET Relays

G3VM-81G1

**New Relay Incorporating a MOS FET
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.



NEW

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 terminals	80 VAC	G3VM-81G1	100	---
			G3VM-81G1(TR)	---	2,500

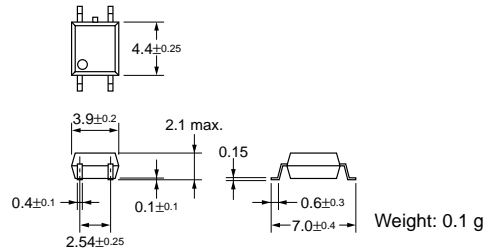
Dimensions

Note: All units are in millimeters unless otherwise indicated.

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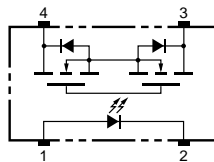


Note: The actual product is marked differently from the image shown here.



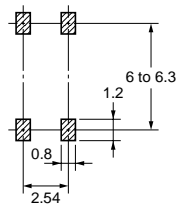
Terminal Arrangement/Internal Connections (Top View)

G3VM-81G1



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-81G1



Absolute Maximum Ratings (Ta = 25°C)

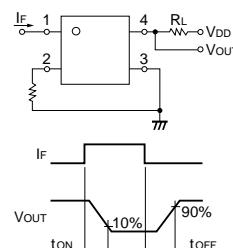
Item	Symbol	Rating	Unit	Measurement Conditions	
Input	LED forward current	I _F	50	mA	
	Repetitive peak LED forward current	I _{FP}	1	A	
	LED forward current reduction rate	Δ I _F /°C	-0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	T _j	125	°C	
Output	Output dielectric strength	V _{OFF}	80	V	
	Continuous load current	I _O	350	mA	
	ON current reduction rate	Δ I _{ON} /°C	-3.5	mA/°C	Ta ≥ 25°C
	Connection temperature	T _j	125	°C	
Dielectric strength between input and output (See note 1.)	V _{I-O}	1,500	Vrms	AC for 1 min	
Operating temperature	T _a	-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	Minimum	Typical	Maximum	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	μA	V _R = 5 V
	Capacity between terminals	C _T	---	15	---	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{FT}	---	1.0	4.0	mA	I _O = 350 mA
Output	Maximum resistance with output ON	R _{ON}	---	1.0	1.2	Ω	I _F = 5 mA, I _O = 350 mA
	Current leakage when the relay is open	I _{LEAK}	---	0.2	1.0	nA	V _{OFF} = 30 V, Ta = 50°C
Capacity between I/O terminals	C _{I-O}	---	0.8	---	pF	f = 1 MHz, V _s = 0 V	
Insulation resistance	R _{I-O}	1,000	---	---	MΩ	V _{I-O} = 500 VDC, RoH ≤ 60%	
Turn-ON time	t _{ON}	---	0.3	0.5	ms	I _F = 5 mA, R _L = 200 Ω, V _{DD} = 20 V (See note 2.)	
Turn-OFF time	t _{OFF}	---	0.3	0.5	ms	V _{DD} = 20 V (See note 2.)	

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



Recommended Operating Conditions

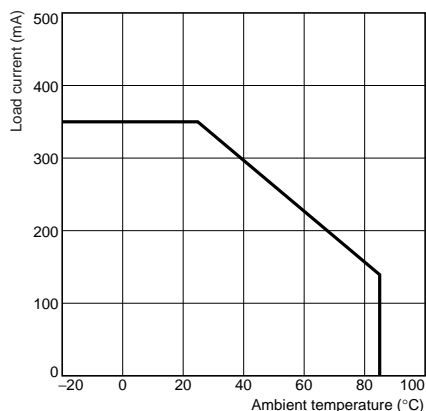
Use the G3VM under the following conditions so that the Relay will operate properly.

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

Engineering Data

Load Current vs. Ambient Temperature

G3VM-81G1



Safety Precautions

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