

MOS FET Relays

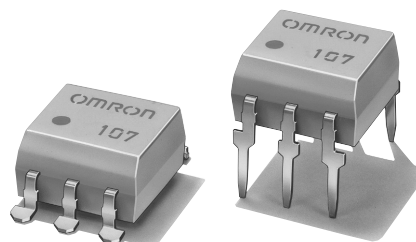
G3VM-401BY/EY

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

- Switches minute analog signals.
- Leakage current of 1 μ A max. when output relay is open.
- RoHS Compliant.

■ Application Examples

- Electronic automatic exchange systems
- Measurement devices
- FA systems



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

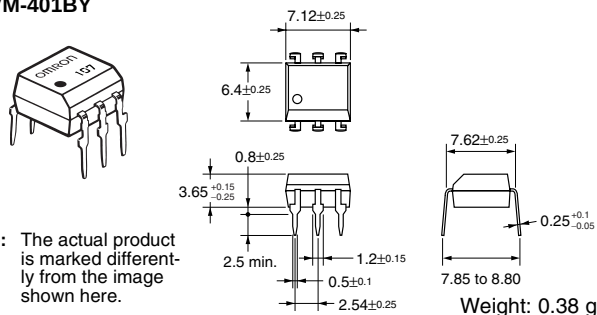
■ List of Models

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

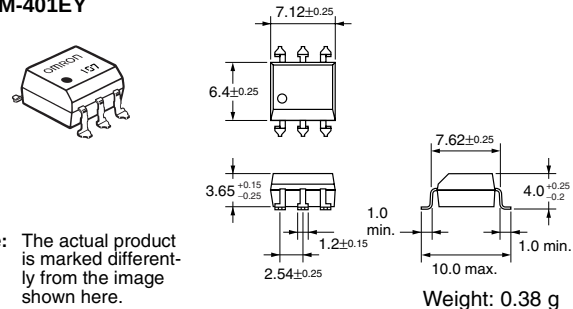
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-401BY

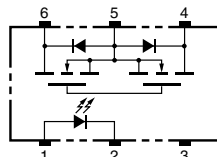


G3VM-401EY

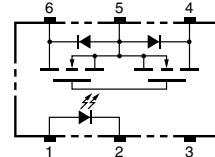


■ Terminal Arrangement/Internal Connections (Top View)

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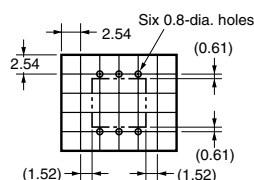


G3VM-401EY



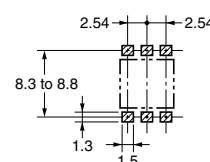
■ PCB Dimensions (Bottom View)

G3VM-401BY



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

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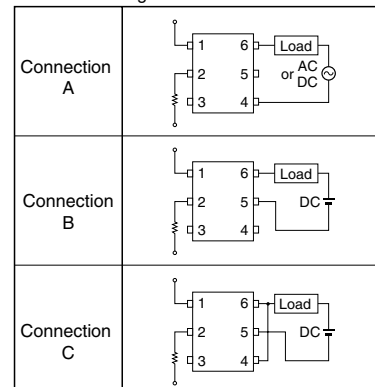


Absolute Maximum Ratings (Ta = 25°C)

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	$\Delta I_F/^\circ\text{C}$	-0.5	mA/°C
	LED reverse voltage	V_R	5	V
	Connection temperature	T_j	125	°C
Output	Output dielectric strength	V_{OFF}	400	V
	Continuous load current	Connection A	120	mA
		Connection B	120	
		Connection C	240	
	ON current reduction rate	Connection A	$\Delta I_{ON}/^\circ\text{C}$	-1.2
		Connection B		-1.2
		Connection C		-2.4
	Connection temperature	T_j	125	°C
Dielectric strength between input and output (See note 1.)		V_{I-O}	5,000	Vrms
Operating temperature		T_a	-40 to +85	°C
Storage temperature		T_{stg}	-55 to +125	°C
Soldering temperature (10 s)		---	260	°C

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.

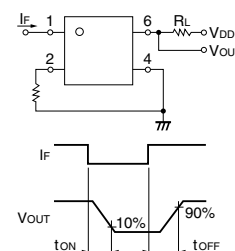
Connection Diagram



Electrical Characteristics (Ta = 25°C)

Item	Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions
Input	LED forward voltage	V_F	1.0	1.15	1.3	V
	Reverse current	I_R	---	---	10	μA
	Capacity between terminals	C_T	---	30	---	pF
	Trigger LED forward current	I_{FT}	---	---	3	mA
Output	Maximum resistance with output ON	Connection A	R_{ON}	---	17	35
		Connection B		---	11	20
		Connection C		---	6	10
	Current leakage when the relay is open	I_{LEAK}	---	---	1.0	μA
Capacity between I/O terminals		C_{I-O}	---	0.8	---	pF
Insulation resistance		R_{I-O}	1,000	---	---	MΩ
Turn-ON time		t_{ON}	---	0.3	1.0	ms
Turn-OFF time		t_{OFF}	---	0.1	1.0	ms

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



Recommended Operating Conditions

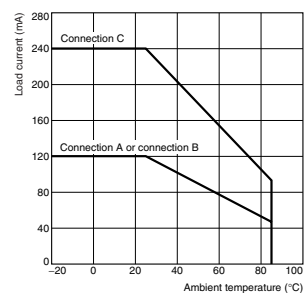
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V_{DD}	---	---	320	V
Operating LED forward current	I_F	5	7.5	25	mA
Continuous load current	I_O	---	---	120	mA
Operating temperature	T_a	-20	---	65	°C

Engineering Data

Load Current vs. Ambient Temperature

G3VM-401BY(EY)



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