

MOS FET Relays

G3VM-401AY/DY

Compact, General-purpose, Analog-switching MOS FET Relays, with Dielectric Strength of 5 kVAC between I/O Using Optical Isolation.

- Trigger LED forward current of 2 mA (maximum) facilitates power saving designs.
- Switches minute analog signals.
- Continuous load current of 120 mA.

RoHS compliant

⚠ Refer to "Common Precautions".

Application Examples

- Power meter
- Measurement devices
- Security systems
- Industrial equipment

List of Models

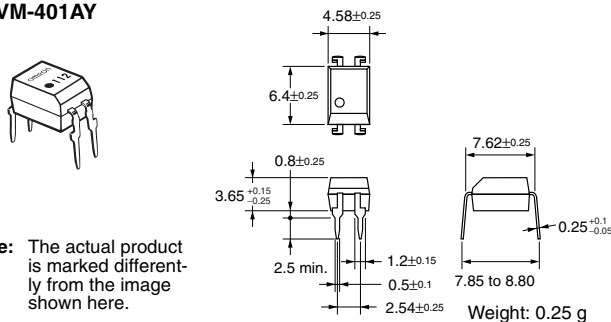
Contact form	Terminals	Load voltage (peak value) (See the note.)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	400 V	G3VM-401AY	100	---
	Surface-mounting terminals		G3VM-401DY		
			G3VM-401DY(TR)	---	1,500

Note: The AC peak and DC value are given for the load voltage.

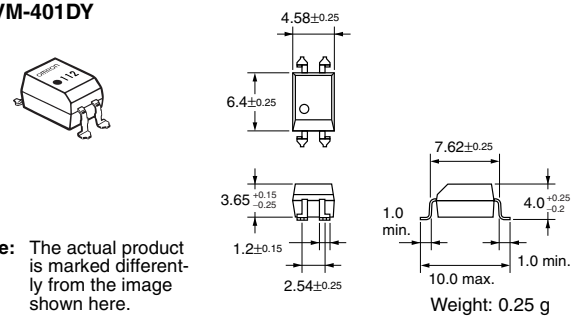
Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-401AY

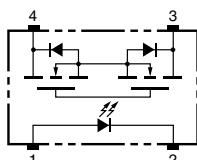


G3VM-401DY

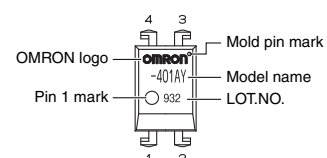
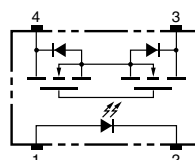


Terminal Arrangement/Internal Connections (Top View)

G3VM-401AY

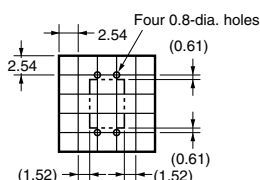


G3VM-401DY



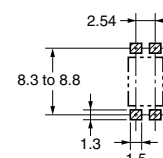
PCB Dimensions (Bottom View)

G3VM-401AY



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-401DY



Absolute Maximum Ratings (Ta = 25°C)

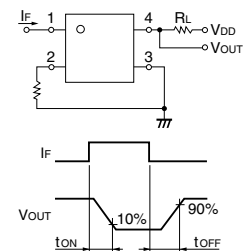
Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I _F	30	mA
	Repetitive peak LED forward current	I _{FP}	1	A
	LED forward current reduction rate	Δ I _F /°C	-0.3	mA/°C
	LED reverse voltage	V _R	5	V
	Connection temperature	T _j	125	°C
Output	Load voltage (AC peak/DC)	V _{OFF}	400	V
	Continuous load current (AC peak/DC)	I _O	120	mA
	ON current reduction rate	Δ I _O /°C	-1.2	mA/°C
	Pulse ON current	I _{op}	0.36	A
	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.

Electrical Characteristics (Ta = 25°C)

Item	Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions
Input	LED forward voltage	V _F	1.45	1.63	1.75	V
	Reverse current	I _R	---	---	10	μA
	Capacity between terminals	C _T	---	40	---	pF
	Trigger LED forward current	I _{FT}	---	0.3	2	mA
Output	Maximum resistance with output ON	R _{ON}	---	17	28	Ω
			---	22	35	Ω
	Current leakage when the relay is open	I _{LEAK}	---	---	1.0	μA
	Capacity between terminals	C _{OFF}	---	80	---	pF
Capacity between I/O terminals		C _{I-O}	---	0.8	---	pF
Insulation resistance		R _{I-O}	1,000	---	---	MΩ
Turn-ON time		t _{ON}	---	0.2	1	ms
Turn-OFF time		t _{OFF}	---	0.2	1	ms

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



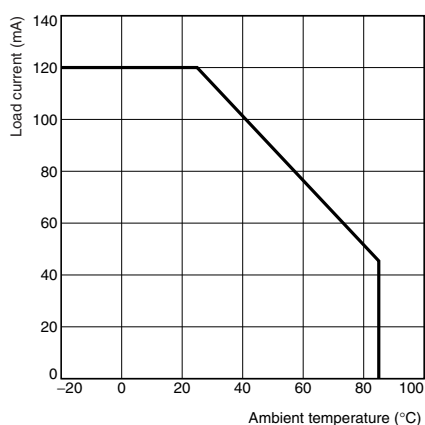
Recommended Operating Conditions

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

Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V _{DD}	---	---	320	V
Operating LED forward current	I _F	3	5	20	mA
Continuous load current (AC peak/DC)	I _O	---	---	120	mA
Operating temperature	T _a	-20	---	65	°C

Engineering Data

Load Current vs. Ambient Temperature G3VM-401AY(DY)



Safety Precautions

Refer to "Common Precautions" for all G3VM models.