

## MOS FET Relays

G3VM-401A/D

### Expanded Range of Analog-switching MOS FET 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.

### Application Examples

- Measurement devices
- Security systems
- Amusement machines

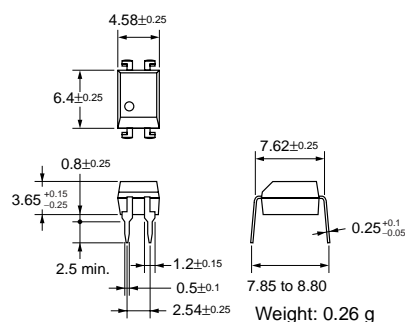
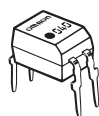
### List of Models

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

### Dimensions

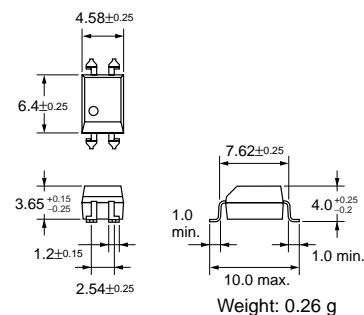
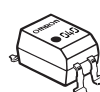
**Note:** All units are in millimeters unless otherwise indicated.

#### G3VM-401A



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

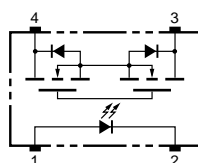
#### G3VM-401D



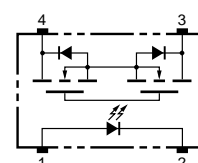
**Note:** The actual product is marked differently from the image shown here.

### Terminal Arrangement/Internal Connections (Top View)

#### G3VM-401A

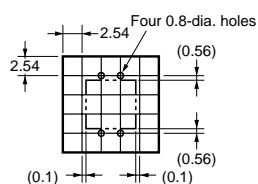


#### G3VM-401D



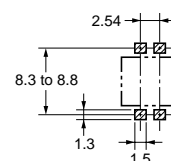
### PCB Dimensions (Bottom View)

#### G3VM-401A



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

#### G3VM-401D



## Absolute Maximum Ratings (Ta = 25°C)

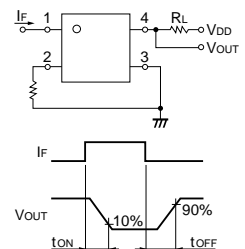
Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I <sub>F</sub>	50	mA
	Repetitive peak LED forward current	I <sub>FP</sub>	1	A
	LED forward current reduction rate	Δ I <sub>F</sub> /°C	-0.5	mA/°C
	LED reverse voltage	V <sub>R</sub>	5	V
	Connection temperature	T <sub>j</sub>	125	°C
Output	Output dielectric strength	V <sub>OFF</sub>	400	V
	Continuous load current	I <sub>O</sub>	120	mA
	ON current reduction rate	Δ I <sub>ON</sub> /°C	-1.2	mA/°C
	Connection temperature	T <sub>j</sub>	125	°C
Dielectric strength between input and output (See note 1.)		V <sub>I-O</sub>	2,500	Vrms
Operating temperature		T <sub>a</sub>	-40 to +85	°C
Storage temperature		T <sub>slg</sub>	-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 <sub>F</sub>	1.0	1.15	1.3	V
	Reverse current	I <sub>R</sub>	---	10	μA	V <sub>R</sub> = 5 V
	Capacity between terminals	C <sub>T</sub>	---	30	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I <sub>FT</sub>	---	1	3	mA
Output	Maximum resistance with output ON	R <sub>ON</sub>	---	18	35	Ω
	Current leakage when the relay is open	I <sub>LEAK</sub>	---	1.0	μA	V <sub>OFF</sub> = 400 V
Capacity between I/O terminals		C <sub>I-O</sub>	---	0.8	pF	f = 1 MHz, V <sub>s</sub> = 0 V
Insulation resistance		R <sub>I-O</sub>	1,000	---	MΩ	V <sub>I-O</sub> = 500 VDC, RoH ≤ 60%
Turn-ON time		t <sub>ON</sub>	---	1.0	ms	I <sub>F</sub> = 5 mA, R <sub>L</sub> = 200 Ω, V <sub>DD</sub> = 20 V (See note 2.)
Turn-OFF time		t <sub>OFF</sub>	---	1.0	ms	

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



## Recommended Operating Conditions

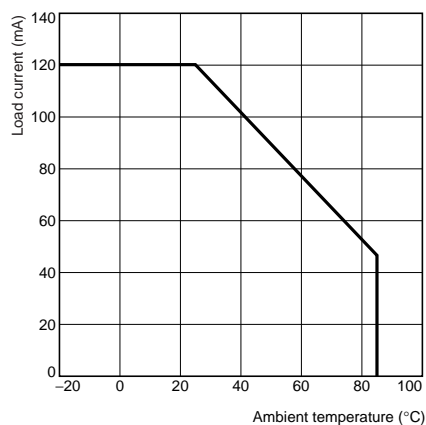
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V <sub>DD</sub>	---	---	320	V
Operating LED forward current	I <sub>F</sub>	5	7.5	25	mA
Continuous load current	I <sub>O</sub>	---	---	100	mA
Operating temperature	T <sub>a</sub>	-20	---	65	°C

## Engineering Data

### Load Current vs. Ambient Temperature

G3VM-401A(D)



## Safety Precautions

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