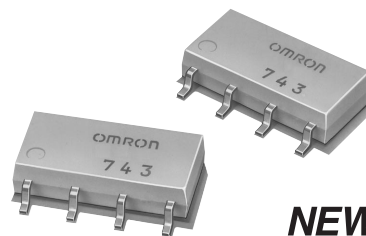


## MOS FET Relays

**G3VM-402J**

### Expanded Range of Analog-Switching MOS FET Relays with 400-V Load Voltage

- New models with two channels and an 8-pin SOP package included in 400-V load voltage series.
- Continuous load current of 120 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.

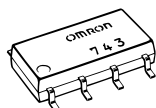
### ■ List of Models

| Contact form | Terminals                  | Load voltage (peak value) | Model         | Number per stick | Number per tape |
|--------------|----------------------------|---------------------------|---------------|------------------|-----------------|
| DPST-NO      | Surface-mounting terminals | 400 VAC                   | G3VM-402J     | 50               | ---             |
|              |                            |                           | G3VM-402J(TR) | ---              | 2,500           |

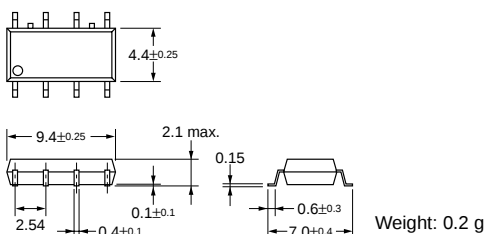
### ■ Dimensions

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

**G3VM-402J**

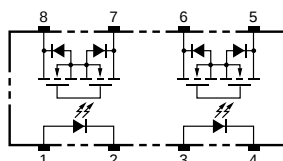


**Note:** The actual product is marked differently from the image shown here.



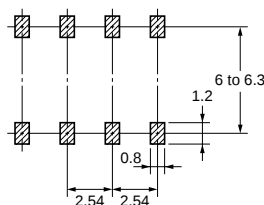
### ■ Terminal Arrangement/Internal Connections (Top View)

**G3VM-402J**



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

**G3VM-402J**



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

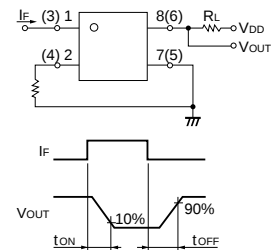
| Item                                                       | Symbol                              | Rating                | Unit        | Measurement Conditions |
|------------------------------------------------------------|-------------------------------------|-----------------------|-------------|------------------------|
| 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                  |
| Dielectric strength between input and output (See note 1.) |                                     | V <sub>I-O</sub>      | 1,500       | Vrms                   |
| Operating temperature                                      |                                     | T <sub>a</sub>        | -40 to +85  | °C                     |
| Storage temperature                                        |                                     | T <sub>stg</sub>      | -55 to +125 | °C                     |
| 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 <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>   | ---     | 17      | 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>   | ---     | 0.3     | 1    | ms                                    |
| Turn-OFF time                  |                                        | t <sub>OFF</sub>  | ---     | 0.1     | 1    | ms                                    |

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



## Recommended Operating Conditions

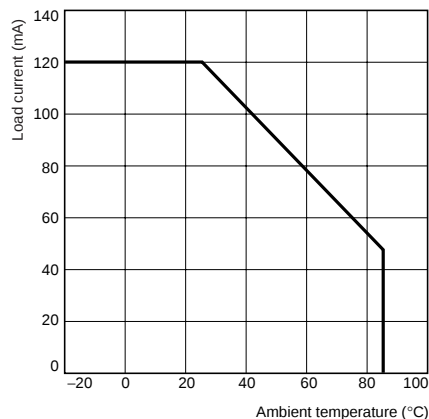
Use the G3VM under the following conditions so that the Relay will operate properly.

| Item                          | Symbol          | Minimum | Typical | Maximum | Unit |
|-------------------------------|-----------------|---------|---------|---------|------|
| 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>  | ---     | ---     | 120     | mA   |
| Operating temperature         | T <sub>a</sub>  | -20     | ---     | 65      | °C   |

## Engineering Data

### Load Current vs. Ambient Temperature

#### G3VM-402J



## Safety Precautions

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