

## MOS FET Relays

**G3VM-355JR**

### New MOS FET Relay with Both SPST-NO and SPST-NC Contacts Incorporated in a Single SOP Package

- SPST-NO/SPST-NC models with an 8-pin SOP package now available in the 350-V load voltage series.
- Continuous load current of 120 mA.
- Dielectric strength of 1,500 Vrms between I/O.



**NEW**

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

### Application Examples

- Broadband systems
- Measurement devices
- Data loggers
- Amusement machines

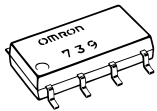
### List of Models

| Contact form        | Terminals                     | Load voltage (peak value) | Model          | Number per stick | Number per tape |
|---------------------|-------------------------------|---------------------------|----------------|------------------|-----------------|
| SPST-NO/<br>SPST-NC | Surface-mounting<br>terminals | 350 VAC                   | G3VM-355JR     | 50               | ---             |
|                     |                               |                           | G3VM-355JR(TR) | ---              | 2,500           |

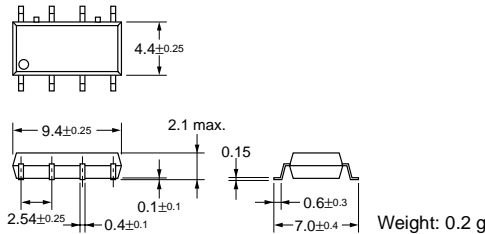
### Dimensions

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

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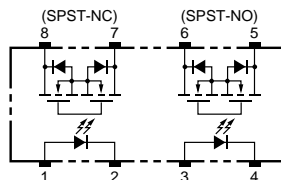


**Note:** The actual product is marked differently from the image shown here.



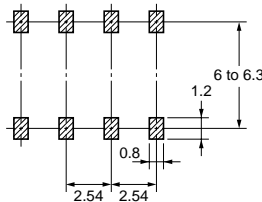
### Terminal Arrangement/Internal Connections (Top View)

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

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

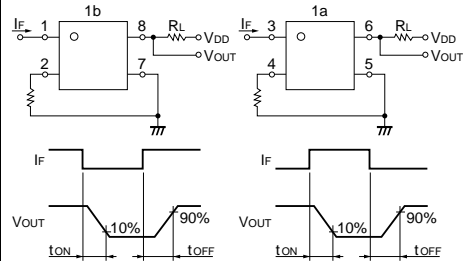
| Item   | Symbol                              | Rating                         | Unit        | Measurement Conditions |                               |
|--|-------------------------------------|--------------------------------|-------------|------------------------|-------------------------------|
| Input  | LED forward current                 | $I_F$                          | 50          | mA                     |                               |
|  | Repetitive peak LED forward current | $I_{FP}$                       | 1           | A                      | 100 $\mu$ s pulses, 100 pps   |
|  | LED forward current reduction rate  | $\Delta I_F/^\circ\text{C}$    | -0.5        | mA/°C                  | Ta $\geq$ 25°C                |
|  | LED reverse voltage                 | $V_R$                          | 5           | V                      |                               |
|  | Connection temperature              | $T_j$                          | 125         | °C                     |                               |
| Output   | Output dielectric strength          | $V_{OFF}$                      | 350         | V                      |                               |
|  | Continuous load current             | $I_O$                          | 120         | mA                     |                               |
|  | ON current reduction rate           | $\Delta I_{ON}/^\circ\text{C}$ | -1.2        | mA/°C                  | Ta $\geq$ 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   | $\mu$ A                | $V_R = 5$ V  |
|                                | Capacity between terminals        | $C_T$                                  | ---        | 30      | ---  | pF                     | V = 0, f = 1 MHz   |
|                                | Trigger LED forward current       | $I_{FT}$                               | ---        | 1       | 3    | mA                     | SPST-NO: $I_O = 120$ mA  |
|                                |                                   | $I_{FC}$                               | ---        | ---     | ---  | ---                    | SPST-NC: $I_{OFF} = 10$ $\mu$ A  |
| Output                         | Maximum resistance with output ON | $R_{ON}$                               | ---        | 15      | 25   | $\Omega$               | SPST-NO: $I_F = 5$ mA, $I_O = 120$ mA<br>SPST-NC: $I_F = 0$ mA, $I_O = 120$ mA |
|                                |                                   | Current leakage when the relay is open | $I_{LEAK}$ | ---     | ---  | 1.0                    | $\mu$ A  |
| 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      | ---     | ---  | M $\Omega$             | $V_{I-O} = 500$ VDC, RoH $\leq$ 60%  |
| Turn-ON time                   | SPST-NO                           | $t_{ON}$                               | ---        | ---     | 1.0  | ms                     | $I_F = 5$ mA, $R_L = 200$ $\Omega$ , $V_{DD} = 20$ V (See note 2.)             |
|                                | SPST-NC                           | $t_{ON}$                               | ---        | ---     | 1.0  | ms                     |  |
| Turn-OFF time                  | SPST-NO                           | $t_{OFF}$                              | ---        | ---     | 1.0  | ms                     |  |
|                                | SPST-NC                           | $t_{OFF}$                              | ---        | ---     | 3.0  | ms                     |  |

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



**Recommended Operating Conditions**

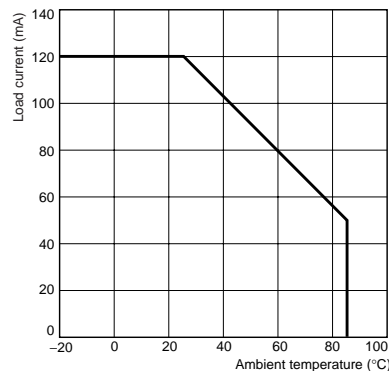
Use the G3VM under the following conditions so that the Relay will operate properly.

| Item                          | Symbol   | Minimum | Typical | Maximum | Unit |
|-------------------------------|----------|---------|---------|---------|------|
| Output dielectric strength    | $V_{DD}$ | ---     | ---     | 280     | V    |
| Operating LED forward current | $I_F$    | 5       | ---     | 25      | mA   |
| Continuous load current       | $I_O$    | ---     | ---     | 120     | mA   |
| Operating temperature         | $T_a$    | -20     | ---     | 65      | °C   |

**Engineering Data**

**Load Current vs. Ambient Temperature**

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**Safety Precautions**

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