

# MOS FET Relays

## G3VM-22CO/FO

### New MOS FET Relay Featuring Unique Contact Construction (1 Input Channel Drives 2 Output Channels)

- Ideal for application in line interface and data logging blocks.
- Switches minute analog signals.
- Switching AC and DC.
- RoHS Compliant.

#### ■ Application Examples

- ADSL modems and routers
- Edge routers
- Data storage devices



**NEW** Approval pending

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

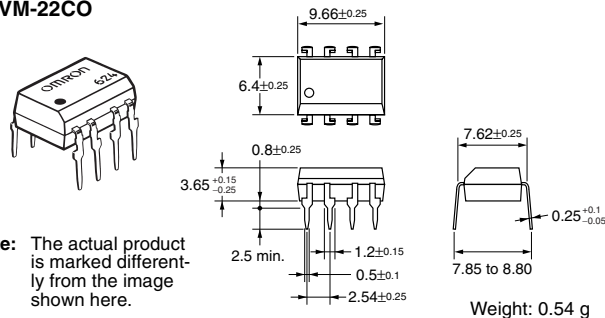
#### ■ List of Models

| Contact form | Terminals                  | Load voltage (peak value) | Model         | Number per stick | Number per tape |
|--------------|----------------------------|---------------------------|---------------|------------------|-----------------|
| DPST-NO      | PCB terminals              | 20 VAC                    | G3VM-22CO     | 50               | ---             |
|              | Surface-mounting terminals |                           | G3VM-22FO     |                  |                 |
|              |                            |                           | G3VM-22FO(TR) | ---              | 1,500           |

#### ■ Dimensions

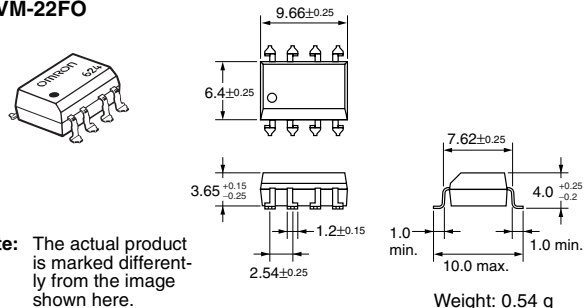
**Note:** All units are in millimeters unless otherwise indicated.

##### G3VM-22CO



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

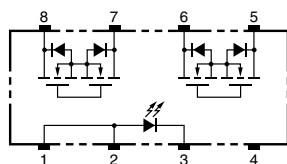
##### G3VM-22FO



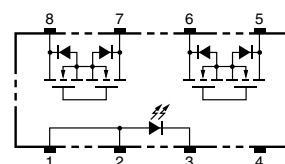
**Note:** The actual product is marked differently from the image shown here.

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

##### G3VM-22CO

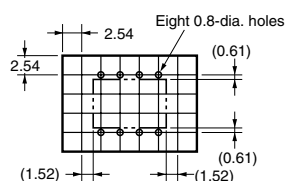


##### G3VM-22FO



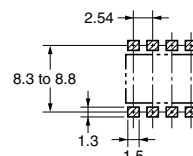
#### ■ PCB Dimensions (Bottom View)

##### G3VM-22CO



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

##### G3VM-22FO



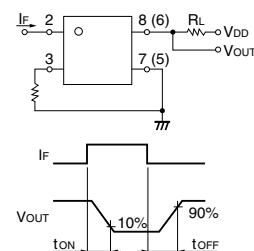
## Absolute Maximum Ratings (Ta = 25°C)

| 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                 | $V_R$                          | 6           | V                      |
|                                              | Connection temperature              | $T_j$                          | 125         | °C                     |
| Output                                       | Output dielectric strength          | $V_{OFF}$                      | 20          | V                      |
|                                              | Continuous load current             | $I_O$                          | 150         | mA                     |
|                                              | ON current reduction rate           | $\Delta I_{ON}/^\circ\text{C}$ | -1.5        | mA/°C                  |
|                                              | Connection temperature              | $T_j$                          | 125         | °C                     |
| Dielectric strength between input and output |                                     | $V_{I-O}$                      | 2,500       | Vrms                   |
| Operating temperature                        |                                     | $T_a$                          | -40 to +85  | °C                     |
| Storage temperature                          |                                     | $T_{stg}$                      | -55 to +125 | °C                     |
| Soldering temperature (10 s)                 |                                     | ---                            | 260         | °C                     |

## 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             | $C_T$      | ---     | 15                  | ---  | pF                     |
|                                | Trigger LED forward current            | $I_{FT}$   | ---     | 1.5                 | 5    | mA                     |
| Output                         | Maximum resistance with output ON      | $R_{ON}$   | ---     | 2                   | 4    | Ω                      |
|                                | Current leakage when the relay is open | $I_{LEAK}$ | ---     | $10 \times 10^{-6}$ | 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                   |                                        | $t_{ON}$   | ---     | ---                 | 1.0  | ms                     |
| Turn-OFF time                  |                                        | $t_{OFF}$  | ---     | ---                 | 1.0  | ms                     |

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



## Recommended Operating Conditions

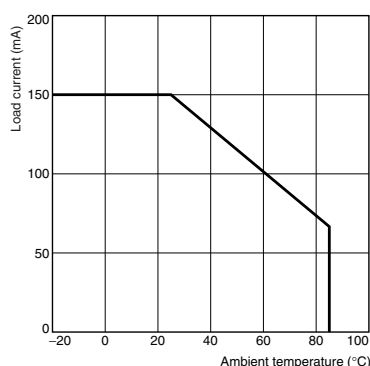
Use the G3VM under the following conditions so that the Relay will operate properly.

| Item                          | Symbol   | Minimum | Typical | Maximum | Unit |
|-------------------------------|----------|---------|---------|---------|------|
| Output dielectric strength    | $V_{DD}$ | ---     | ---     | 20      | V    |
| Operating LED forward current | $I_F$    | 5       | ---     | 30      | mA   |
| Continuous load current       | $I_O$    | ---     | ---     | 150     | mA   |
| Operating temperature         | $T_a$    | -25     | ---     | 65      | °C   |

## Engineering Data

### Load Current vs. Ambient Temperature

G3VM-22CO(FO)



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**OMRON ELECTRONIC  
COMPONENTS LLC**  
55 E. Commerce Drive, Suite B  
Schaumburg, IL 60173  
**847-882-2288**

**OMRON CANADA, INC.**  
885 Milner Avenue  
Toronto, Ontario M1B 5V8  
**416-286-6465**

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