

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.

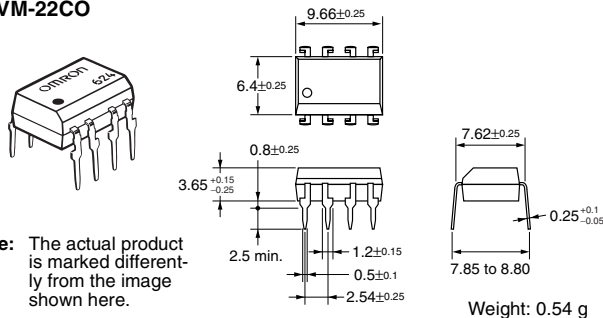
List of Models

| 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 |

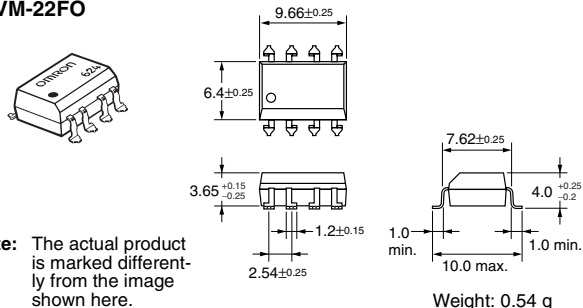
Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-22CO

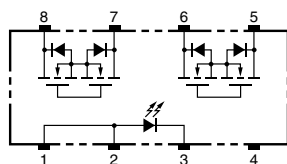


G3VM-22FO

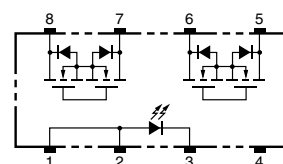


Terminal Arrangement/Internal Connections (Top View)

G3VM-22CO

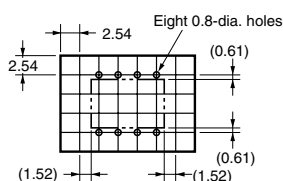


G3VM-22FO



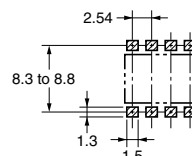
PCB Dimensions (Bottom View)

G3VM-22CO



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-22FO



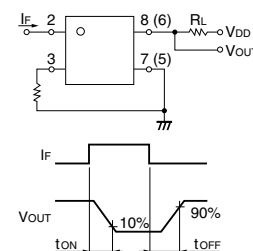
■ Absolute Maximum Ratings (Ta = 25°C)

| Item | Symbol | Rating | Unit | Measurement conditions | |
|--|-------------------------------------|--------------------------------|-------------|------------------------|-------------------------------|
| Input | LED forward current | I_F | 50 | mA | |
| | Repetitive peak LED forward current | I_{FP} | 1 | A | 100 μ 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 | 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 | Ta \geq 25°C |
| | Connection temperature | T_j | 125 | °C | |
| Dielectric strength between input and output | | V_{I-O} | 2,500 | 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 |

■ 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 | μ A | $V_R = 5$ V |
| | Capacity between terminals | C_T | --- | 15 | --- | pF | V = 0, f = 1 MHz |
| | Trigger LED forward current | I_{FT} | --- | 1.5 | 5 | mA | $I_O = 150$ mA |
| Output | Maximum resistance with output ON | R_{ON} | --- | 2 | 4 | Ω | $I_F = 5$ mA, $I_O = 150$ mA |
| | Current leakage when the relay is open | I_{LEAK} | --- | 10×10^{-6} | 1.0 | μ A | $V_{OFF} = 20$ V |
| Capacity between I/O terminals | | C_{I-O} | --- | 0.8 | --- | pF | f = 1 MHz, Vs = 0 V |
| Insulation resistance | | R_{I-O} | 1,000 | --- | --- | M Ω | $V_{I-O} = 500$ VDC, RoH \leq 60% |
| Turn-ON time | | tON | --- | --- | 1.0 | ms | $I_F = 5$ mA, $R_L = 200 \Omega$, $V_{DD} = 20$ V (See note.) |
| Turn-OFF time | | tOFF | --- | --- | 1.0 | ms | |

Note: Turn-ON and Turn-OFF Times



■ Recommended Operating Conditions

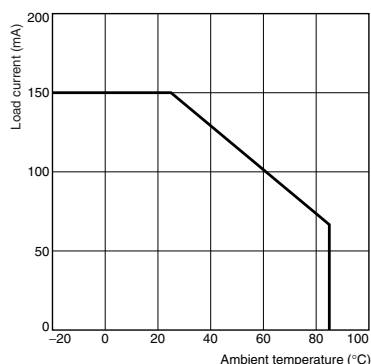
Use the G3VM under the following conditions so that the Relay will operate properly.

| 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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