

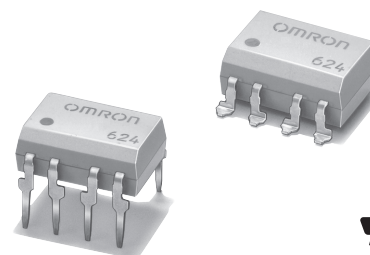
MOS FET Relays G3VM-W(F)L

MOS FET Relay Series with 350-V Load Voltage Current-limiting Models with 2 Outputs.

- Current Limit: 100 to 300 mA
- RoHS Compliant.

■ Application Examples

- Electronic automatic exchange systems
- Multi-functional telephones
- Cordless telephones
- Measurement devices



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

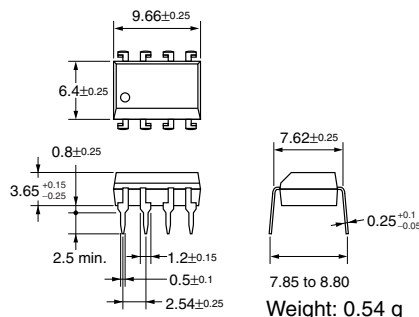
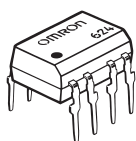
■ List of Models

| Contact form | Terminals | Load voltage (peak value) | Model | Current limit | Number per stick | Number per tape |
|--------------|----------------------------|---------------------------|--------------|---------------|------------------|-----------------|
| DPST-NO | PCB terminals | 350 VAC | G3VM-WL | Yes | 50 | --- |
| | Surface-mounting terminals | | G3VM-WFL | | | --- |
| | | | G3VM-WFL(TR) | | | 1,500 |

■ Dimensions

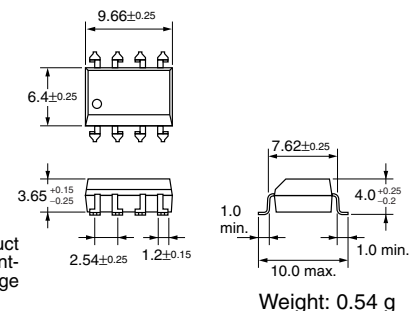
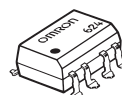
Note: All units are in millimeters unless otherwise indicated.

G3VM-WL



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

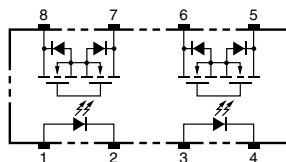
G3VM-WFL



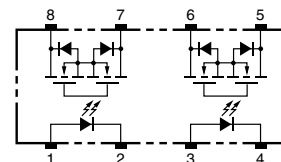
Note: The actual product is marked differently from the image shown here.

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-WL

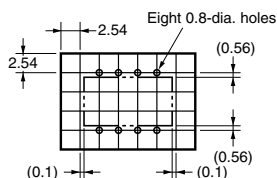


G3VM-WFL



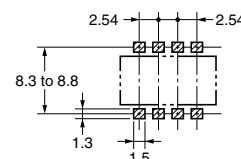
■ PCB Dimensions (Bottom View)

G3VM-WL



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

G3VM-WFL



■ Absolute Maximum Ratings (Ta = 25°C)

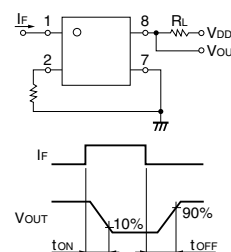
| Item | | Symbol | Rating | Unit | Measurement conditions |
|--|-------------------------------------|--------------------------------|-------------|----------------------|-------------------------------|
| Input | LED forward current | I_F | 50 | mA | |
| | Repetitive peak LED forward current | I_{FP} | 1 | A | 100 μ s pulses, 100 pps |
| | LED forward current reduction rate | $\Delta I_F/^\circ\text{C}$ | -0.5 | mA/ $^\circ\text{C}$ | Ta \geq 25°C |
| | LED reverse voltage | V_R | 6 | V | |
| | Connection temperature | T_j | 125 | $^\circ\text{C}$ | |
| Output | Load voltage (AC peak/DC) | V_{OFF} | 350 | V | |
| | Continuous load current | I_O | 120 | mA | |
| | ON current reduction rate | $\Delta I_{ON}/^\circ\text{C}$ | -1.2 | mA/ $^\circ\text{C}$ | Ta \geq 25°C |
| | Connection temperature | T_j | 125 | $^\circ\text{C}$ | |
| Dielectric strength between input and output (See note 1.) | | V_{I-O} | 2,500 | V_{rms} | AC for 1 min |
| Operating temperature | | T_a | -40 to +85 | $^\circ\text{C}$ | With no icing or condensation |
| Storage temperature | | T_{stg} | -55 to +125 | $^\circ\text{C}$ | With no icing or condensation |
| Soldering temperature (10 s) | | --- | 260 | $^\circ\text{C}$ | 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 | μA | $V_R = 5$ V |
| | Capacity between terminals | C_T | --- | 30 | --- | pF | $V = 0$, $f = 1$ MHz |
| | Trigger LED forward current | I_{FT} | --- | 1 | 3 | mA | $I_O = 120$ mA |
| Output | Maximum resistance with output ON | R_{ON} | --- | 22 | 35 | Ω | $I_F = 5$ mA, $I_O = 120$ mA |
| | Current leakage when the relay is open | I_{LEAK} | --- | 0.0005 | 1.0 | μA | $V_{OFF} = 350$ V |
| | Capacity between terminals | C_{OFF} | --- | 40 | --- | pF | $V = 0$, $f = 1$ MHz |
| Limit current | | I_{LIM} | 150 | --- | 300 | mA | $I_F = 5$ mA, $V_{DD} = 5$ V, $t = 5$ ms |
| 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 Ω | $V_{I-O} = 500$ VDC, $R_{OH} \leq 60\%$ |
| Turn-ON time | | t_{ON} | --- | 0.25 | 1.0 | ms | $I_F = 5$ mA, $R_L = 200$ Ω , $V_{DD} = 20$ V (See note 2.) |
| Turn-OFF time | | t_{OFF} | --- | 0.15 | 1.0 | ms | |

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



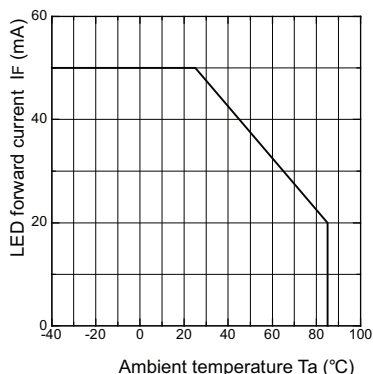
■ Recommended Operating Conditions

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

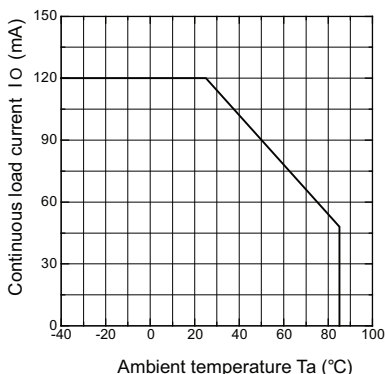
| Item | Symbol | Minimum | Typical | Maximum | Unit |
|--------------------------------------|----------|---------|---------|---------|------------------|
| Load voltage (AC peak/DC) | V_{DD} | --- | --- | 280 | V |
| Operating LED forward current | I_F | 5 | 7.5 | 25 | mA |
| Continuous load current (AC peak/DC) | I_O | --- | --- | 100 | mA |
| Operating temperature | T_a | - 20 | --- | 65 | $^\circ\text{C}$ |

■ Engineering Data

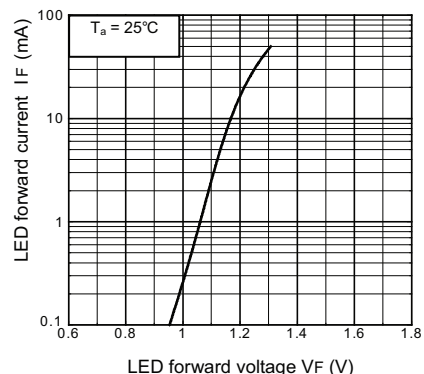
LED forward current vs. Ambient temperature
IF - Ta



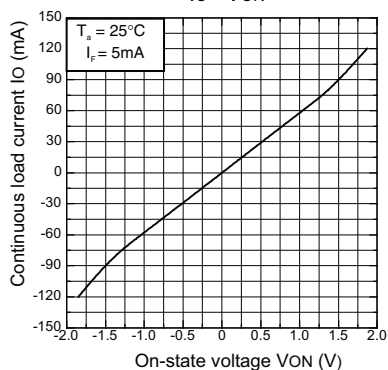
Continuous load current vs. Ambient temperature
Io - Ta



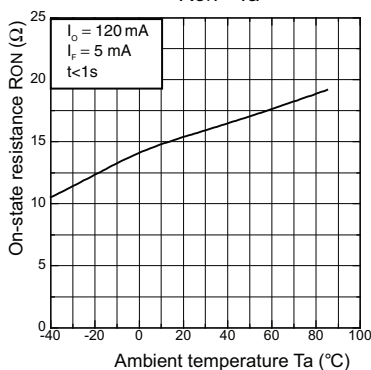
LED forward current vs. LED forward voltage
IF - VF



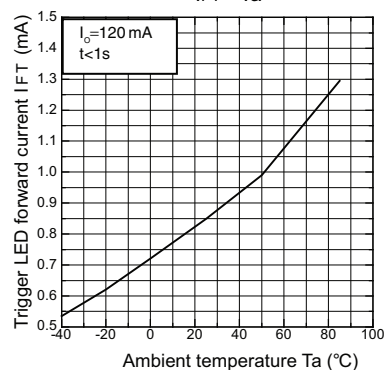
Continuous load current vs. On-state voltage
Io - VON



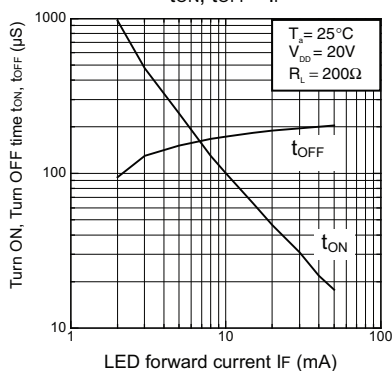
On-state resistance vs. Ambient temperature
RON - Ta



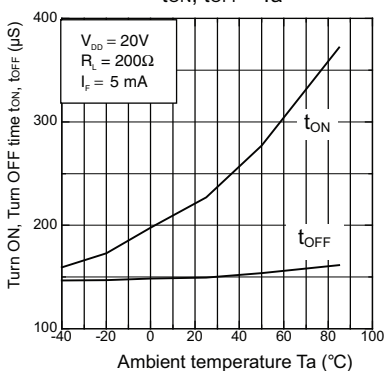
Trigger LED forward current vs. Ambient temperature
IFT - Ta



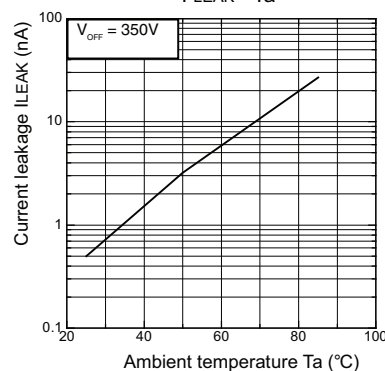
Turn ON, Turn OFF time vs. LED forward current
tON, tOFF - IF



Turn ON, Turn OFF time vs. Ambient temperature
tON, tOFF - Ta



Current leakage vs. Ambient temperature
ILEAK - Ta



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