

MOS FET Relays

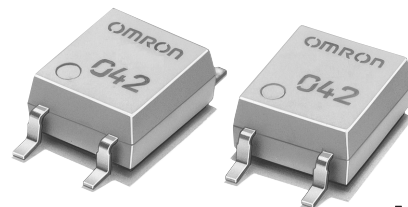
G3VM-41GR6

New MOS FET Relay with Low Output Capacitance and ON Resistance ($C \times R = 10\text{pF} \cdot \Omega$) in a 40-V Load Voltage Model

- Output capacitance of 1 pF (typical) allows high-frequency applications.
- Leakage current of 1.0 nA max. when output relay is open.
- RoHS Compliant.

■ Application Examples

- Semiconductor inspection tools
- Measurement devices
- Broadband systems
- Data loggers



NEW 

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

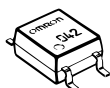
■ List of Models

| Contact form | Terminals | Load voltage (peak value) | Model | Number per stick | Number per tape |
|--------------|----------------------------|---------------------------|----------------|------------------|-----------------|
| SPST-NO | Surface-mounting terminals | 40 VAC | G3VM-41GR6 | 100 | --- |
| | | | G3VM-41GR6(TR) | --- | 2,500 |

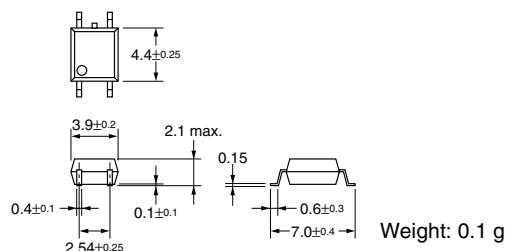
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

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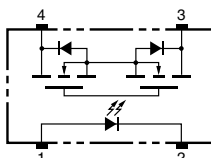


Note: The actual product is marked differently from the image shown here.



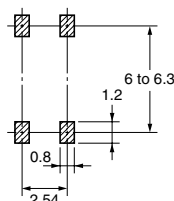
■ Terminal Arrangement/Internal Connections (Top View)

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

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■ Absolute Maximum Ratings (Ta = 25°C)

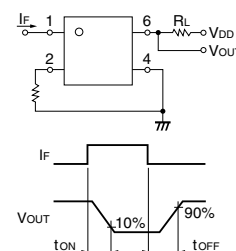
| Item | | Symbol | Rating | Unit | Measurement conditions |
|--|-------------------------------------|----------------------------------|-------------|------------------------|-------------------------------|
| Input | LED forward current | I_F | 50 | mA | |
| | Repetitive peak LED forward current | I_{FP} | 1 | A | 100 μs pulses, 100 pps |
| | LED forward current reduction rate | $\Delta I_F/^{\circ}\text{C}$ | -0.5 | mA/ $^{\circ}\text{C}$ | Ta ≥ 25°C |
| | LED reverse voltage | V_R | 5 | V | |
| | Connection temperature | T_j | 125 | °C | |
| Output | Output dielectric strength | V_{OFF} | 40 | 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 ≥ 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 | -20 to +85 | °C | With no icing or condensation |
| Storage temperature | | T_{sig} | -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 |
| | Reverse current | I_R | --- | --- | 10 | μA |
| | Capacity between terminals | C_T | --- | 15 | --- | pF |
| | Trigger LED forward current | I_{FT} | --- | --- | 4 | mA |
| Output | Maximum resistance with output ON | R_{ON} | --- | 10 | 15 | Ω |
| | Current leakage when the relay is open | I_{LEAK} | --- | --- | 1.0 | nA |
| | Capacity between terminals | C_{OFF} | --- | 1.0 | 2.0 | pF |
| Capacity between I/O terminals | | C_{I-O} | --- | 0.8 | --- | pF |
| Insulation resistance | | R_{I-O} | 1,000 | --- | --- | MΩ |
| Turn-ON time | | t_{ON} | --- | --- | 0.5 | ms |
| Turn-OFF time | | t_{OFF} | --- | --- | 0.5 | ms |

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



■ Recommended Operating Conditions

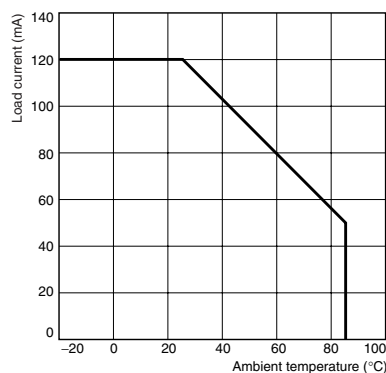
Use the G3VM under the following conditions so that the Relay will operate properly.

| Item | Symbol | Minimum | Typical | Maximum | Unit |
|-------------------------------|----------|---------|---------|---------|------|
| Output dielectric strength | V_{DD} | --- | --- | 32 | V |
| Operating LED forward current | I_F | 10 | --- | 30 | mA |
| Continuous load current | I_O | --- | --- | 120 | mA |
| Operating temperature | T_a | 25 | --- | 60 | °C |

■ Engineering Data

Load Current vs. Ambient Temperature

G3VM-41GR6



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