

MOS FET Relays

G3VM-61PR

Smallest Class in market, USOP Package MOS FET Relays (C_{OFF} (typical): 20 pF, R_{ON} (typical): 1 Ω) with Low Output Capacitance and ON Resistance ($C \times R = 20 \text{ pF} \cdot \Omega$) in a 60-V Load Voltage Model.

- ON resistance of 1 Ω (typical) suppresses output signal attenuation.



NEW

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

RoHS compliant

Application Examples

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

List of Models (Ask your OMRON representative for delivery times.)

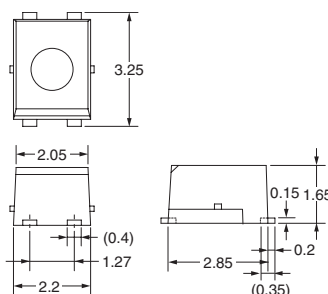
Contact form	Terminals	Load voltage (peak value) (See note)	Model	Minimum packaging unit
				Number per tape
SPST-NO	Surface-mounting terminals	60 V	G3VM-61PR	---
			G3VM-61PR(TR)	1,500

- Note:**
1. Ask your OMRON representative for orders under 1,500 pcs.
 2. Tape-cut USOPs are packaged without humidity resistance. Use manual soldering to mount them. Refer to common precautions.
 3. The AC peak and DC value is given for the load voltages.

Dimensions

Note: All units are in millimeters unless otherwise indicated.

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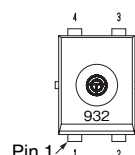
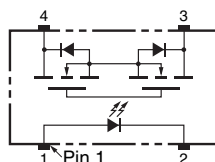
Note: The actual product is marked differently from the image shown here.

Note: A tolerance of ± 0.2 mm applies to all dimensions unless otherwise specified.

Weight: 0.03 g

Terminal Arrangement/Internal Connections (Top View)

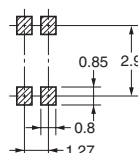
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The actual product is marked differently from the image shown here.
Beveled side is input side.

Actual Mounting Pad Dimensions (Recommended Value, Top View)

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Absolute Maximum Ratings (Ta = 25°C)

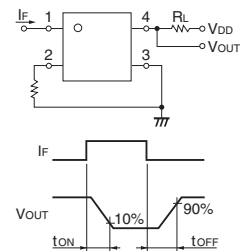
Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I _F	50	mA	
	LED forward current reduction rate	Δ I _F /°C	−0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	T _j	125	°C	
Output	Load voltage (AC peak / DC)	V _{OFF}	60	V	
	Continuous load current (AC peak / DC)	I _O	400	mA	
	ON current reduction rate	Δ I _O /°C	−4.0	mA/°C	Ta ≥ 25°C
	Connection temperature	T _j	125	°C	
Dielectric strength between input and output (See note 1.)		V _{I-O}	500	Vrms	AC for 1 min
Ambient operating temperature		T _a	−40 to +85	°C	With no icing or condensation
Storage temperature		T _{slg}	−40 to +125	°C	With no icing or condensation
Soldering temperature		---	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	μA	V _R = 5 V
	Capacity between terminals	C _T	---	15	---	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{FT}	---	0.5	3	mA	I _O = 100 mA
Output	Maximum resistance with output ON	R _{ON}	---	1.0	1.5	Ω	I _F = 5 mA, I _O = 400 mA, t < 1 s
	Current leakage when the relay is open	I _{LEAK}	---	---	1	nA	V _{OFF} = 60 V, Ta = 25°C
	Capacity between terminals	C _{OFF}	---	20	30	pF	V = 0, f = 1 MHz, t < 1 s
Capacity between I/O terminals		C _{I-O}	---	0.3	---	pF	f = 1 MHz, Vs = 0 V
Insulation resistance between I/O terminals		R _{I-O}	1,000	---	---	MΩ	V _{I-O} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON	---	0.3	0.5	ms	I _F = 5 mA, R _L = 200 Ω, V _{DD} = 20 V (See note 2.)
Turn-OFF time		tOFF	---	0.3	0.5	ms	

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



Recommended Operating Conditions

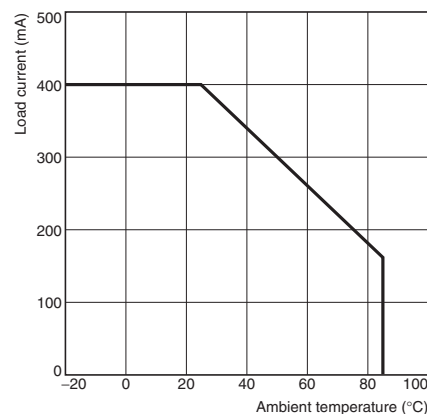
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak / DC)	V_{DD}	---	---	48	V
Operating LED forward current	I_F	5	7.5	20	mA
Continuous load current (AC peak / DC)	I_O	---	---	400	mA
Operating temperature	T_a	-20	---	65	°C

Engineering Data

Load Current vs. Ambient Temperature

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Safety Precautions

Refer to "Common Precautions" for all G3VM models.

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