OMRON

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 × R = 20 pF•Ω) in a 60-V Load Voltage Model.

NEW

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

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.)

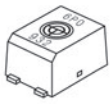
Contact form	Terminals	Load voltage (peak value) (See note)	Model	Minimum packaging unit
				Number per tape
SPST-NO	Surface-mounting terminals	60 V	G3VM-61PR	---
			G3VM-61PR(TR)	1,500

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.

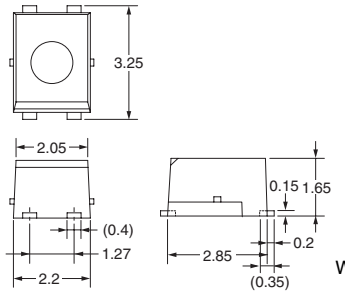
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-61PR



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

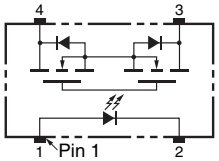


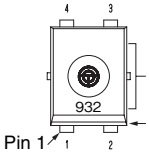
Note: A tolerance of ±0.2 mm applies to all dimensions unless otherwise specified.

Weight: 0.03 g

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-61PR

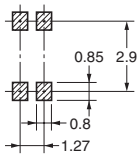




The actual product is marked differently from the image shown here.
Beveled side is input side.

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

G3VM-61PR



■ Absolute Maximum Ratings (Ta = 25°C)

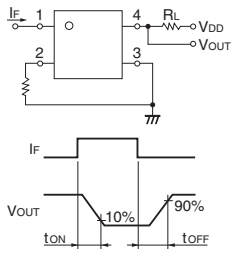
Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I_F	50	mA	
	LED forward current reduction rate	ΔI_F/°C	−0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	V_R	5	V	
	Connection temperature	T_j	125	°C	
Output	Load voltage (AC peak / DC)	V_{OFF}	60	V	
	Continuous load current (AC peak / DC)	I_O	400	mA	
	ON current reduction rate	ΔI_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_{stg}	−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

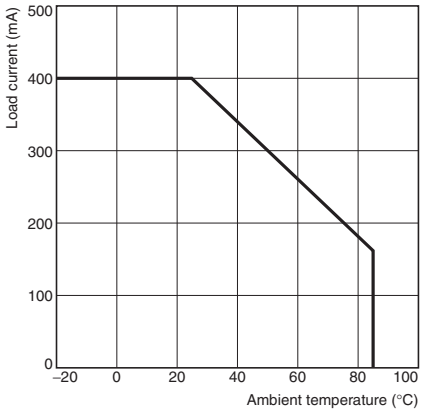
Use the G3VM under the following conditions so that the Relay will operate properly.

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

G3VM-61PR



■ Safety Precautions

Refer to *"Common Precautions"* for all G3VM models.