

World's Smallest SSOP Package
MOSFET 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.



NEW

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

Note. Information correct as of November 2005, according to data obtained by OMRON.

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

■ Application Examples

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

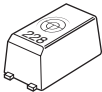
■ List of Models

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

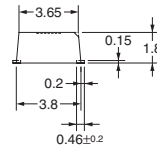
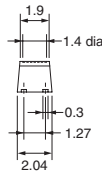
■ Dimensions

Note. All units are in millimeters unless otherwise indicated.

G3VM-61LR



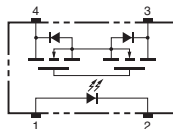
Note. The actual product is marked differently from the image shown here.



Note. A tolerance of ± 0.1 mm applies to all dimensions unless otherwise specified.

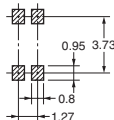
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-61LR



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

G3VM-61LR



Absolute Maximum Ratings (Ta = 25°C)

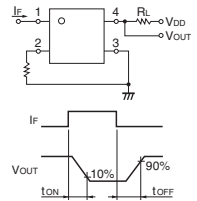
Item	Symbol	Rating	Unit	Measurement Conditions	
Input	LED forward current	I_F	50	mA	
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	V_{RI}	5	V	
	Connection temperature	T_L	125	°C	
Output	Output dielectric strength	V_{OFF}	60	V	
	Continuous load current	I_O	400	mA	
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	-4.0	mA/°C	Ta ≥ 25°C
	Connection temperature	T_L	125	°C	
Dielectric strength between input and output (See note 1.)	V_{I-O}	1,500	Vrms	AC for 1 min	
Ambient operating temperature	T_a	-20 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	$I_F = 10 \text{ mA}$
	Reverse current	I_{RI}	—	—	10	μA	$V_{RI} = 5 \text{ V}$
	Capacity between terminals	C_T	—	15	—	pF	$V = 0, f = 1 \text{ MHz}$
	Trigger LED forward current	I_{FT}	—	2	5	mA	$I_O = 100 \text{ mA}, R_{ON} < 1.5 \Omega$
Output	Maximum resistance with output ON	R_{ON}	—	1.0	1.5	Ω	$I_F = 5 \text{ mA}, I_O = 400 \text{ mA}$
	Current leakage when the relay is open	I_{LEAK}	—	—	1	μA	$V_{OFF} = 60 \text{ V}, T_a = 25^\circ\text{C}$
	Capacity between terminals	C_{OFF}	—	20	—	pF	$V = 0, f = 100 \text{ MHz}, t = < 1 \text{ s}$
Capacity between I/O terminals	C_{I-O}	—	0.3	—	pF	$f = 1 \text{ MHz}, V_s = 0 \text{ V}$	
Insulation resistance between I/O terminals	R_{I-O}	1,000	—	—	MΩ	$V_{I-O} = 500 \text{ VDC}, \text{RoH} \leq 60\%$	
Turn-ON time	t_{ON}	—	0.3	1	ms	$I_F = 5 \text{ mA}, R_L = 200 \Omega, V_{DD} = 20 \text{ V}$ (See note 2.)	
Turn-OFF time	t_{OFF}	—	0.2	1	ms		

Note 2. Turn-ON and Turn-OFF Times



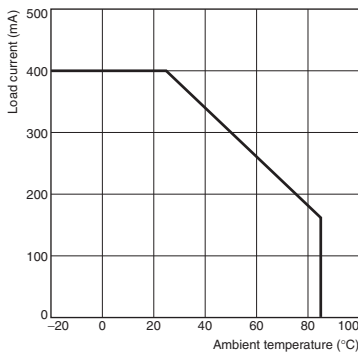
Recommended Operating Conditions

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}	—	—	48	V
Operating LED forward current	I_F	10	—	20	mA
Continuous load current	I_O	—	—	400	mA
Operating temperature	T_a	-20	—	70	°C

Engineering Data

Load Current vs. Ambient Temperature
G3VM-61LR



Safety Precautions

Refer to "Common Precautions" for all G3VM models.