OMRON

MOS FET Relays

G3VM-61A1/D1

Compact, General-purpose, Analogswitching MOS FET Relay, with Dielectric Strength of 2.5 kVAC between I/O Using Optical Isolation

- Upgraded G3VM-61 A/D Series.
- Switches minute analog signals.
- Leakage current of 1 μA max. when output relay is open.

■ Application Examples

- Measurement devices
- · Security systems
- Amusement machines



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	PCB terminals	60 VAC	G3VM-61A1	100	
	Surface-mounting		G3VM-61D1	4	
	terminals		G3VM-61D1(TR)	A /A	1,500

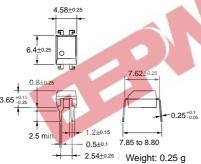
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

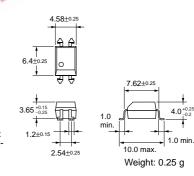
G3VM-61A1

The actual product

Note: is marked different-ly from the image shown here.

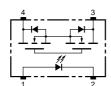


The actual product is marked differently from the image Note:

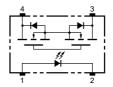


■ Terminal Arrangement/Internal Connections (Top View)

G3VM-61A1

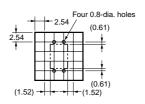


G3VM-61D1



■ PCB Dimensions (Bottom View)

G3VM-61A1



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

G3VM-61D1



Note:

■ Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Rating	Unit	Measurement Conditions
Input	nput LED forward current		50	mA	
	Repetitive peak LED forward current	I _{FP}	1	Α	100 μs pulses, 100 pps
	LED forward current reduction rate	Δ I _F /°C	-0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	V _R	5	٧	
	Connection temperature	Tj	125	°C	
Output	Output dielectric strength	V _{OFF}	60	٧	
	Continuous load current	Io	500	mA	
	ON current reduction rate	Δ I _{ON} /°C	-5.0	mA/°C	Ta ≥ 25°C
	Connection temperature	Tj	125	°C	
	c strength between input and See note 1.)	V _{I-O}	2,500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to +85	°C	With no icing or condensation
Storage temperature		T _{stg}	-55 to +125	°C	With no icing or condensation
Soldering temperature (10 s)			260	°C	10 s

 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	Mini- mum	Typical	Maxi- mum	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	μА	V _R = 5 V
	Capacity between terminals	C _T		30		pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{FT}		1.6	3	mA	I _O = 500 mA
Output	Maximum resistance with output ON	R _{ON}		1	2	Ω	I _F = 5 mA, I _O = 500 mA
	Current leakage when the relay is open	I _{LEAK}			1.0	μА	V _{OFF} = 60 V
Capacity between I/O terminals		C _{I-O}		0.8		pF	f = 1 MHz, Vs = 0 V
Insulation resistance		R _{I-O}	1,000		-	MΩ	$V_{I-O} = 500 \text{ VDC},$ RoH $\leq 60\%$
Turn-ON time		tON		0.8	2.0	ms	I_F = 5 mA, R_L = 200 Ω,
Turn-OFF time		tOFF		0.1	0.5	ms 🥠	$V_{DD} = 20 \text{ V (See note 2.)}$

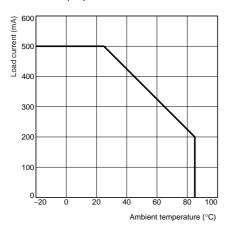
■Recommended Operating Conditions

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	lF	5	7.5	25	mA
Continuous load current	Io			500	mA
Operating temperature	Ta	- 20		65	°C

■ Engineering Data

Load Current vs. Ambient Temperature G3VM-61A1(D1)



■ Safety Precautions

Refer to page 6 for precautions common to all G3VM models.