OMRON

MOS FET Relays

G3VM-601AY/DY

Compact, General-purpose, Analog-switching MOS FET Relays, with Dielectric Strength of 5 kVAC between I/O Using Optical Isolation.

- Trigger LED forward current of 2 mA (maximum) facilities power saving designs.
- Switches minute analog signals.
- Continuous load current of 90 mA.

RoHS compliant

⚠ Refer to *"Common Precautions"*.

NEW

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

■ Application Examples

- Power meter
- Measurement devices
- Security systems
- Industrial equipment

■ List of Models

Contact form	Terminals	Load voltage (peak value) (See the note.)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	600 V	G3VM-601AY	100	---
	Surface-mounting terminals		G3VM-601DY		
			G3VM-601DY(TR)	---	1,500

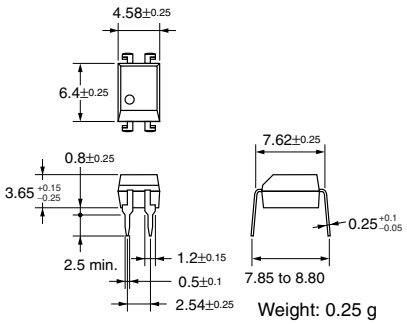
Note: The AC peak and DC value are given for the load voltage.

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-601AY

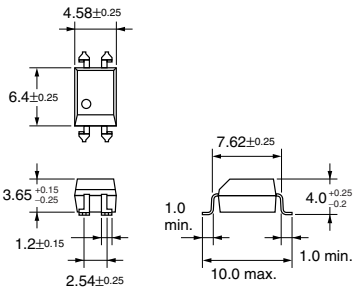
Note: The actual product is marked differently from the image shown here.



Weight: 0.25 g

G3VM-601DY

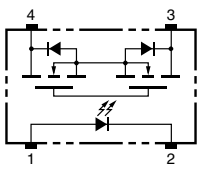
Note: The actual product is marked differently from the image shown here.



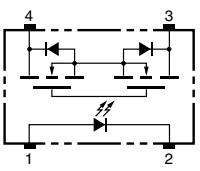
Weight: 0.25 g

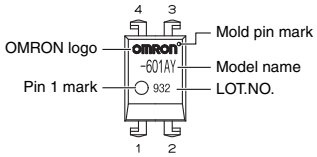
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-601AY



G3VM-601DY

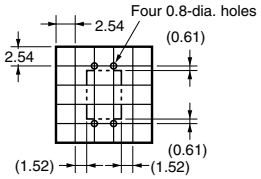




Note: The actual product is marked differently from the image shown here.

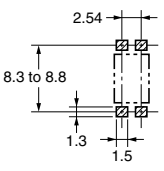
■ PCB Dimensions (Bottom View)

G3VM-601AY



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

G3VM-601DY



■ Absolute Maximum Ratings (Ta = 25°C)

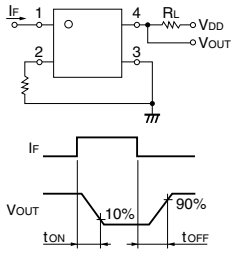
Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I_F	30	mA	
	Repetitive peak LED forward current	I_{FP}	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	Δ I_F/°C	−0.3	mA/°C	Ta ≥ 25°C
	LED reverse voltage	V_R	5	V	
	Connection temperature	T_j	125	°C	
Output	Load voltage (AC peak/DC)	V_{OFF}	600	V	
	Continuous load current (AC peak/DC)	I_O	90	mA	
	ON current reduction rate	Δ I_O/°C	−0.9	mA/°C	Ta ≥ 25°C
	Pulse ON current	I_{op}	0.27	A	t = 100 ms, Duty = 1/10
	Connection temperature	T_j	125	°C	
Dielectric strength between input and output (See note 1.)		V_{I-O}	5,000	Vrms	AC for 1 min
Operating temperature		T_a	−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

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	1.45	1.63	1.75	V	I_F = 10 mA
	Reverse current	I_R	---	---	10	μA	V_R = 5 V
	Capacity between terminals	C_T	---	40	---	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I_{FT}	---	0.3	2	mA	I_O = 90 mA
Output	Maximum resistance with output ON	R_{ON}	---	30	40	Ω	I_F = 5 mA, I_O = 90 mA, t < 1 s
				45	60		I_F = 5 mA, I_O = 90 mA
	Current leakage when the relay is open	I_{LEAK}	---	---	1.0	μA	V_{OFF} = 600 V
	Capacity between terminals	C_{OFF}	---	75	---	pF	V = 0, f = 1 MHz
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 VDC, RoH ≤ 60%
Turn-ON time		tON	---	0.2	1	ms	I_F = 5 mA, R_L = 200 Ω, V_{DD} = 10 V (See note 2.)
Turn-OFF time		tOFF	---	0.2	1	ms	

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



■ Recommended Operating Conditions

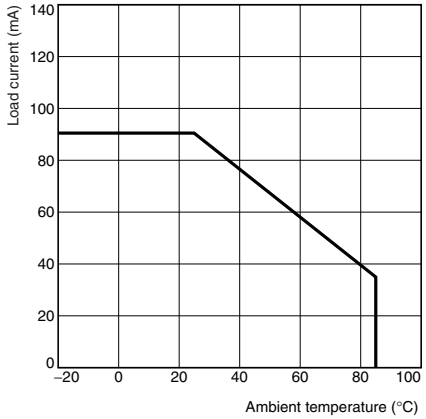
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}	---	---	480	V
Operating LED forward current	I_F	3	5	20	mA
Continuous load current (AC peak/DC)	I_O	---	---	90	mA
Operating temperature	T_a	− 20	---	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature

G3VM-601AY(DY)



■ Safety Precautions

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