

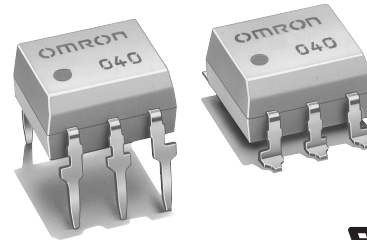
MOS FET Relays G3VM-601BY/EY

Analog-switching MOS FET Relay with a Dielectric Strength of 5 kVAC between I/O Using Optical Isolation

- Switches minute analog signals.
- Switching AC and DC.
- Peak load voltage of 600 V.
- Dielectric strength of 5 kVAC between I/O.
- RoHS Compliant.

Application Examples

- Electronic automatic exchange systems
- FA systems
- Measurement devices
- Security systems



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

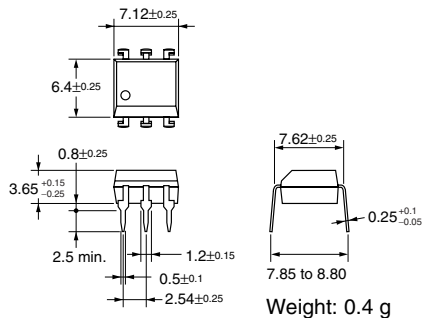
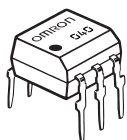
List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	600 VAC	G3VM-601BY	50	---
	Surface-mounting terminals		G3VM-601EY		
			G3VM-601EY(TR)	---	1,500

Dimensions

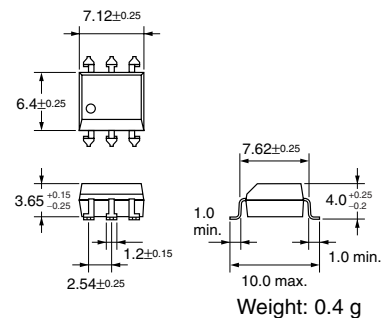
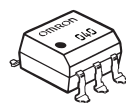
Note: All units are in millimeters unless otherwise indicated.

G3VM-601BY



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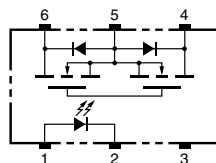
G3VM-601EY



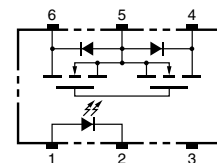
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Terminal Arrangement/Internal Connections (Top View)

G3VM-601BY

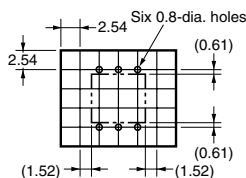


G3VM-601EY



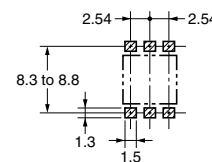
PCB Dimensions (Bottom View)

G3VM-601BY



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-601EY

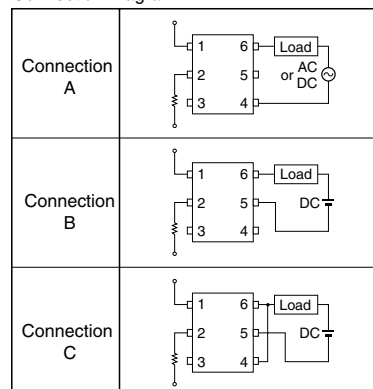


Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Rating	Unit	Measurement conditions	
Input	LED forward current	I_F	50	mA		
	Repetitive peak LED forward current	I_{FP}	1	A	100 μ s pulses, 100 pps	
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5	mA/°C	Ta \geq 25°C	
	LED reverse voltage	V_R	5	V		
	Connection temperature	T_J	125	°C		
Output	Output dielectric strength	V_{OFF}	600	V		
	Continuous load current	Connection A	I_O	100	mA	
		Connection B		100		
		Connection C		200		
	ON current reduction rate	Connection A	$\Delta I_{ON}/^\circ\text{C}$	-1.0	mA/°C	Ta \geq 25°C
		Connection B		-1.0		
Connection C			-2.0			
Connection temperature	T_J	125	°C			
Dielectric strength between input and output (See note 1.)		V_{IO}	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.

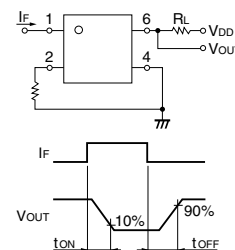
Connection Diagram



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	μ A	$V_R = 5$ V	
	Capacity between terminals	C_T	---	30	---	pF	V = 0, f = 1 MHz	
	Trigger LED forward current	I_{FT}	---	1.6	5	mA	$I_O = 100$ mA	
Output	Maximum resistance with output ON	Connection A	R_{ON}	---	25	35	Ω	$I_F = 10$ mA, $I_O = 100$ mA
				---	30	45	Ω	$I_F = 10$ mA, $I_O = 100$ mA
				---	23	35	Ω	$I_F = 10$ mA, $I_O = 100$ mA
	Current leakage when the relay is open	Connection B	I_{LEAK}	---	12	18	Ω	$I_F = 10$ mA, $I_O = 200$ mA
				---	---	---	1.0	μ A
Capacity between I/O terminals		C_{IO}	---	0.8	---	pF	f = 1 MHz, Vs = 0 V	
Insulation resistance		R_{IO}	1,000	---	---	M Ω	$V_{IO} = 500$ VDC, RoH \leq 60%	
Turn-ON time		tON	---	0.2	1.5	ms	$I_F = 5$ mA, $R_L = 200$ Ω , $V_{DD} = 20$ V (See note 2.)	
Turn-OFF time		tOFF	---	0.2	1.0	ms		

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



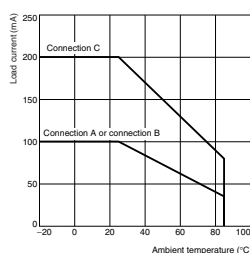
Recommended Operating Conditions

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}	---	---	480	V
Operating LED forward current	I_F	7.5	15	25	mA
Continuous load current	I_O	---	---	100	mA
Operating temperature	T_a	-20	---	65	°C

Engineering Data

**Load Current vs. Ambient Temperature
G3VM-601BY(EY)**



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