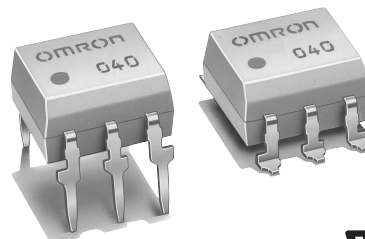


## MOS FET Relays

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.



### Application Examples

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

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

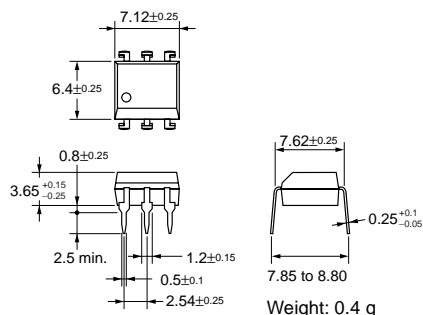
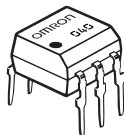
### List of Models

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)	---	

### Dimensions

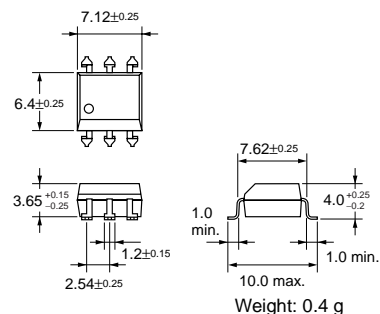
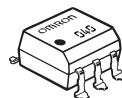
**Note:** All units are in millimeters unless otherwise indicated.

#### G3VM-601BY



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

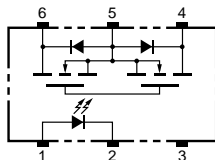
#### G3VM-601EY



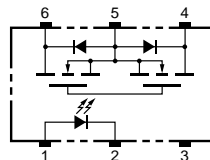
**Note:** The actual product is marked differently from the image shown here.

### Terminal Arrangement/Internal Connections (Top View)

#### G3VM-601BY

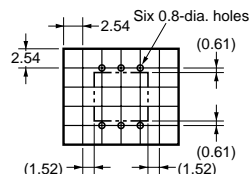


#### G3VM-601EY



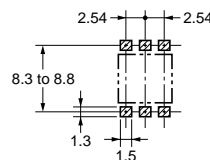
### PCB Dimensions (Bottom View)

#### G3VM-601BY



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

#### G3VM-601EY

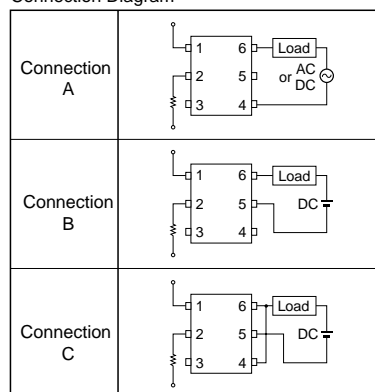


### Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Rating	Unit	Measurement Conditions	
Input	LED forward current	$I_F$	50	mA		
	Repetitive peak LED forward current	$I_{FP}$	1	A	100 $\mu$ 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.)		$V_{I-O}$	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.

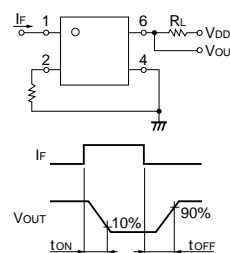
Connection Diagram



### 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	$\mu$ 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	$\Omega$	$I_F = 10$ mA, $I_O = 100$ mA
			---	30	45	$\Omega$	$I_F = 10$ mA, $I_O = 100$ mA	
		Connection B	---	23	35	$\Omega$	$I_F = 10$ mA, $I_O = 100$ mA	
		Connection C	---	12	18	$\Omega$	$I_F = 10$ mA, $I_O = 200$ mA	
	Current leakage when the relay is open	$I_{LEAK}$	---	---	1.0	$\mu$ A	$V_{OFF} = 600$ V	
Capacity between I/O terminals		$C_{I-O}$	---	0.8	---	pF	$f = 1$ MHz, $V_s = 0$ V	
Insulation resistance		$R_{I-O}$	1,000	---	---	M $\Omega$	$V_{I-O} = 500$ VDC, $RoH \leq 60\%$	
Turn-ON time		$t_{ON}$	---	0.2	1.5	ms	$I_F = 5$ mA, $R_L = 200$ $\Omega$ , $V_{DD} = 20$ V (See note 2.)	
Turn-OFF time		$t_{OFF}$	---	0.2	1.0	ms		

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



### Recommended Operating Conditions

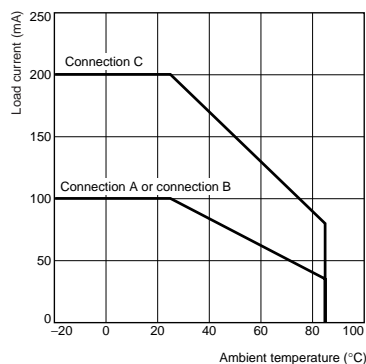
Use the G3VM under the following conditions so that the Relay will operate properly.

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)



### Safety Precautions

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