

MOS FET Relays

G3VM-402C/F

New Expanded Range of Analog-switching MOS FET Relays with 400-V Load Voltage with 2 Output Channels.

- A 2-channel Relay now included in the 400-V load voltage series.
- Continuous load current of 120 mA.
- Dielectric strength of 2,500 Vrms between I/O.



NEW Approval pending

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

Application Examples

- Measurement devices
- Security systems
- Amusement machines

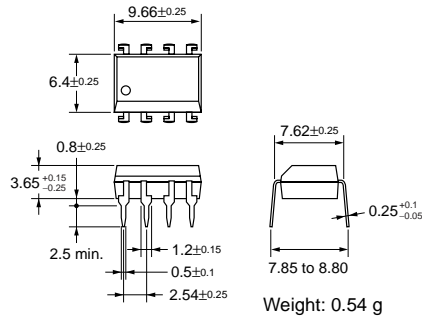
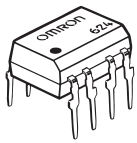
List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
DPST-NO	PCB terminals	400 VAC	G3VM-402C	50	---
	Surface-mounting terminals		G3VM-402F		
			G3VM-402F(TR)	---	

Dimensions

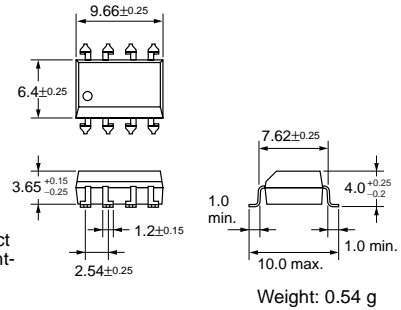
Note: All units are in millimeters unless otherwise indicated.

G3VM-402C



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

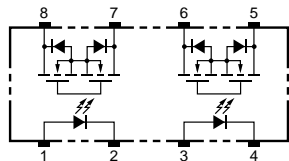
G3VM-402F



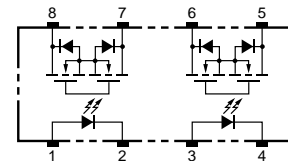
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Terminal Arrangement/Internal Connections (Top View)

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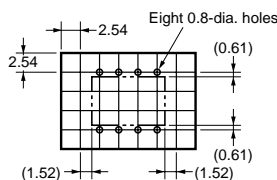


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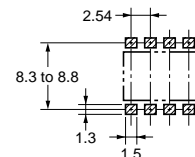
PCB Dimensions (Bottom View)

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Actual Mounting Pad Dimensions (Recommended Value, Top View)

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Absolute Maximum Ratings (Ta = 25°C)

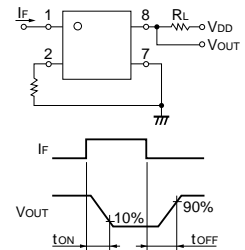
Item	Symbol	Rating	Unit	Measurement Conditions	
Input	LED forward current	I_F	50	mA	
	Repetitive peak LED forward current	I_{FP}	1	A	100 μ s pulses, 100 pps
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5	mA/ $^\circ\text{C}$	Ta \geq 25°C
	LED reverse voltage	V_R	5	V	
	Connection temperature	T_j	125	$^\circ\text{C}$	
Output	Output dielectric strength	V_{OFF}	400	V	
	Continuous load current	I_O	120	mA	
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	-1.2	mA/ $^\circ\text{C}$	Ta \geq 25°C
	Connection temperature	T_j	125	$^\circ\text{C}$	
Dielectric strength between input and output (See note 1.)	V_{I-O}	2,500	Vrms	AC for 1 min	
Operating temperature	T_a	-40 to +85	$^\circ\text{C}$	With no icing or condensation	
Storage temperature	T_{stg}	-55 to +125	$^\circ\text{C}$	With no icing or condensation	
Soldering temperature (10 s)	---	260	$^\circ\text{C}$	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	$I_F = 10$ 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	3	mA	$I_O = 120$ mA
Output	Maximum resistance with output ON	R_{ON}	---	18	35	Ω	$I_F = 5$ mA, $I_O = 120$ mA
	Current leakage when the relay is open	I_{LEAK}	---	---	1.0	μ A	$V_{OFF} = 400$ 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 Ω	$V_{I-O} = 500$ VDC, $RoH \leq 60\%$	
Turn-ON time	t_{ON}	---	---	1.0	ms	$I_F = 5$ mA, $R_L = 200$ Ω , $V_{DD} = 20$ V (See note 2.)	
Turn-OFF time	t_{OFF}	---	---	1.0	ms		

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



Recommended Operating Conditions

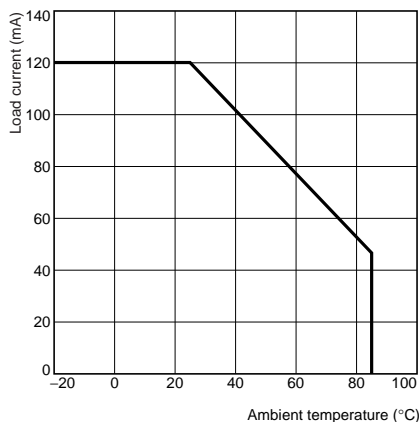
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V_{DD}	---	---	320	V
Operating LED forward current	I_F	5	7.5	25	mA
Continuous load current	I_O	---	---	100	mA
Operating temperature	T_a	-20	---	65	$^\circ\text{C}$

Engineering Data

Load Current vs. Ambient Temperature

G3VM-402C(F)



Safety Precautions

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