

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.
- RoHS Compliant.

Application Examples

- Measurement devices
- Security systems
- Amusement machines

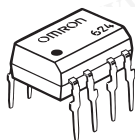
List of Models

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)	---	1,500

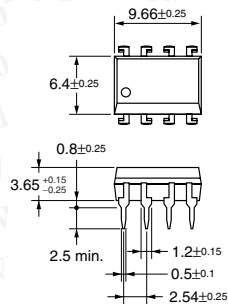
Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-402C

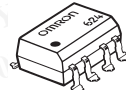


Note: The actual product is marked differently from the image shown here.

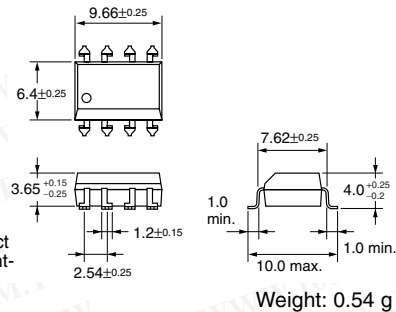


Weight: 0.54 g

G3VM-402F



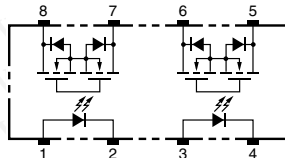
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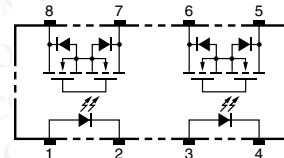
Weight: 0.54 g

Terminal Arrangement/Internal Connections (Top View)

G3VM-402C

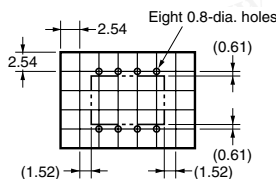


G3VM-402F



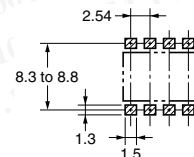
PCB Dimensions (Bottom View)

G3VM-402C



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-402F



Absolute Maximum Ratings (Ta = 25°C)

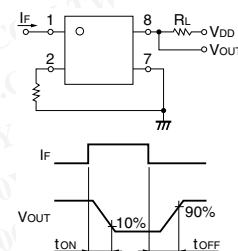
Item		Symbol	Rating	Unit	Measurement conditions
Input	LED forward current	I_F	50	mA	
	Repetitive peak LED forward current	I_{FP}	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	$\Delta I_F/^{\circ}\text{C}$	-0.5	mA/ $^{\circ}\text{C}$	Ta ≥ 25 $^{\circ}\text{C}$
	LED reverse voltage	V_R	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 ≥ 25 $^{\circ}\text{C}$
	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
	Reverse current	I_R	---	---	10	μA
	Capacity between terminals	C_T	---	30	---	pF
	Trigger LED forward current	I_{FT}	---	1	3	mA
Output	Maximum resistance with output ON	R_{ON}	---	18	35	Ω
	Current leakage when the relay is open	I_{LEAK}	---	---	1.0	μA
Capacity between I/O terminals		C_{I-O}	---	0.8	---	pF
Insulation resistance		R_{I-O}	1,000	---	---	MΩ
Turn-ON time		t_{ON}	---	---	1.0	ms
Turn-OFF time		t_{OFF}	---	---	1.0	ms

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



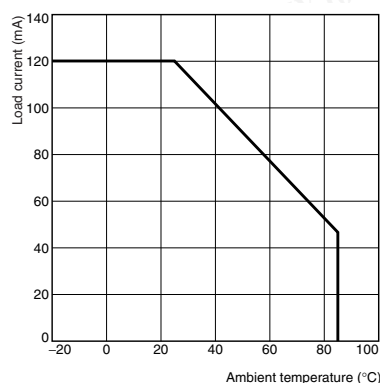
Recommended Operating Conditions

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	°C

Engineering Data

Load Current vs. Ambient Temperature G3VM-402C(F)



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