

MOS FET Relays

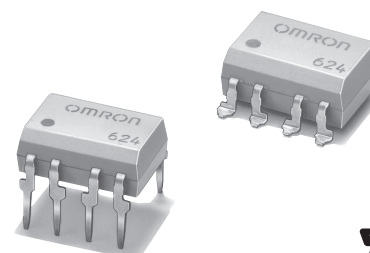
G3VM-402C/F

Analog-switching MOS FET Relays with 400-V Load Voltage with 2 Output Channels.

- A 2-channel Relay 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



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

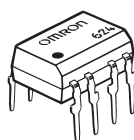
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
DPST-NO	PCB terminals	400 VAC	G3VM-402C	50	---
	Surface-mounting terminals		G3VM-402F		
			G3VM-402F(TR)	---	1,500

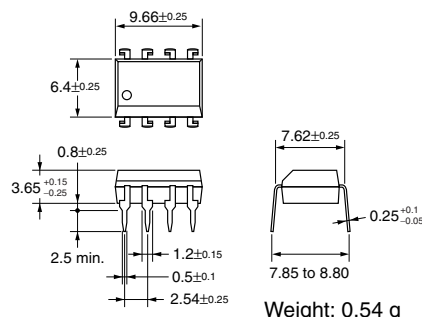
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

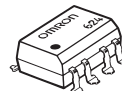
G3VM-402C



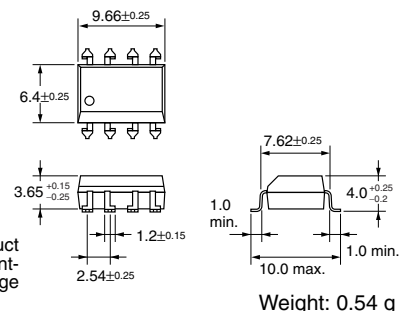
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G3VM-402F

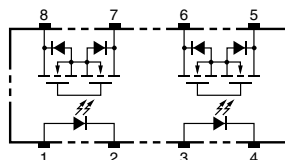


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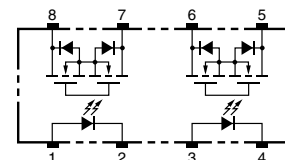


■ Terminal Arrangement/Internal Connections (Top View)

G3VM-402C

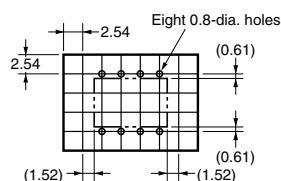


G3VM-402F



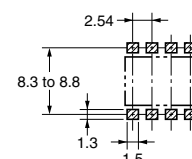
■ PCB Dimensions (Bottom View)

G3VM-402C



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

G3VM-402F



Absolute Maximum Ratings (Ta = 25°C)

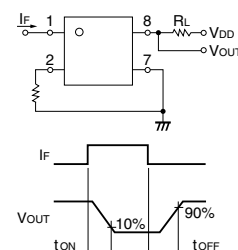
Item		Symbol	Rating	Unit	Measurement conditions
Input	LED forward current	I _F	50	mA	
	Repetitive peak LED forward current	I _{FP}	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	Δ I _F /°C	−0.5	mA/°C	T _a ≥ 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	T _J	125	°C	
Output	Load voltage (AC peak/DC)	V _{OFF}	400	V	
	Continuous load current	I _O	120	mA	
	ON current reduction rate	Δ I _{ON} /°C	−1.2	mA/°C	T _a ≥ 25°C
	Connection temperature	T _J	125	°C	
Dielectric strength between input and output (See note 1.)		V _{I-O}	2,500	V _{rms}	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	1.0	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}	---	0.0008	1.0	μA
	Capacity between terminals	C_{OFF}	---	40	---	pF
Capacity between I/O terminals		C_{I-O}	---	0.8	---	pF
Insulation resistance		R_{I-O}	1,000	---	---	M Ω
Turn-ON time		t_{ON}	---	0.4	1.0	ms
Turn-OFF time		t_{OFF}	---	0.09	1.0	ms

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



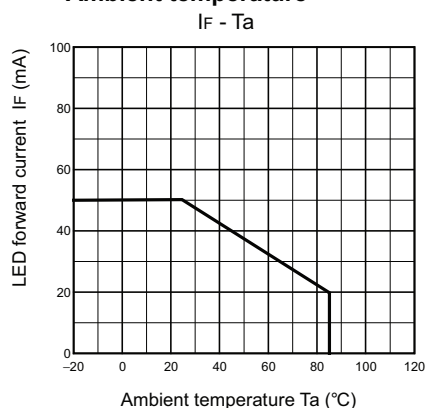
Recommended Operating Conditions

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

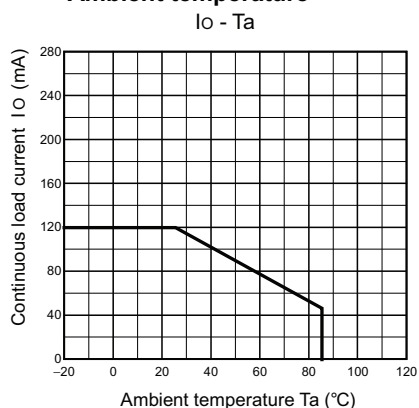
Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}	---	---	320	V
Operating LED forward current	I_F	5	7.5	25	mA
Continuous load current (AC peak/DC)	I_O	---	---	100	mA
Operating temperature	T_a	-20	---	65	°C

■ Engineering Data

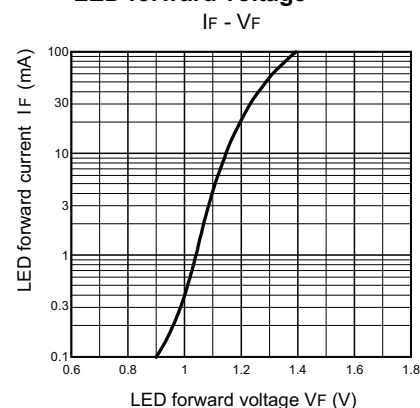
LED forward current vs.
Ambient temperature



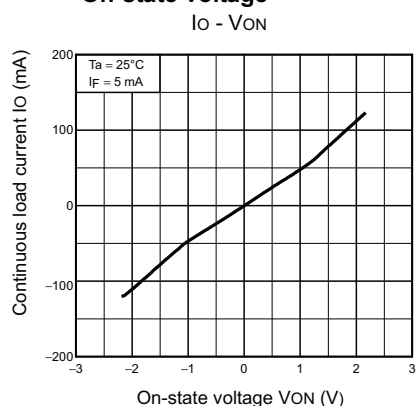
Continuous load current vs.
Ambient temperature



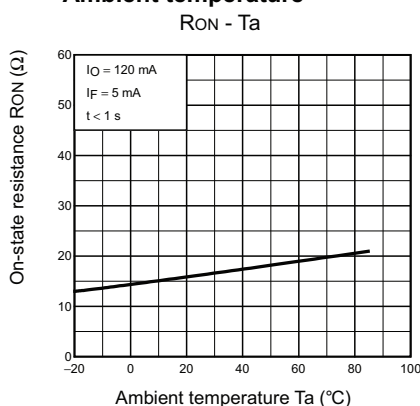
LED forward current vs.
LED forward voltage



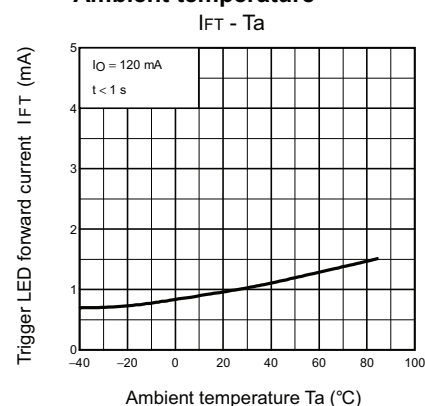
Continuous load current vs.
On-state voltage



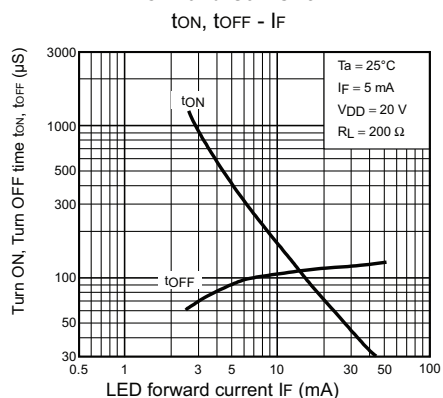
On-state resistance vs.
Ambient temperature



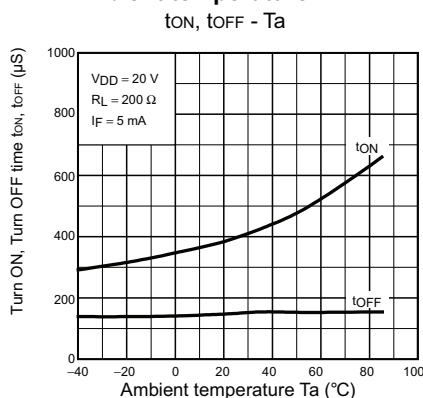
Trigger LED forward current vs.
Ambient temperature



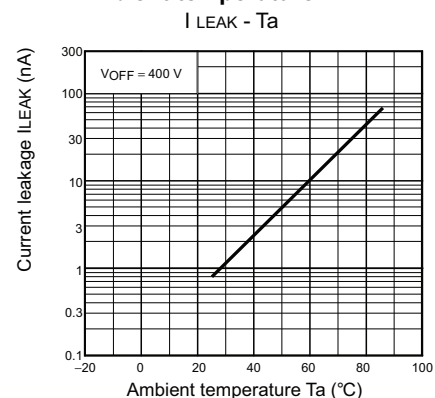
Turn ON, Turn OFF time vs.
LED forward current



Turn ON, Turn OFF time vs.
Ambient temperature



Current leakage vs.
Ambient temperature



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To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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