

MOS FET Relays

G3VM-402J

Analog-Switching MOS FET Relays with 400-V Load Voltage

- Two channels and an 8-pin SOP package included in a 400-V load voltage series.
- Continuous load current of 120 mA.
- Dielectric strength of 1,500 Vrms between I/O.
- RoHS Compliant.



■ Application Examples

- Broadband systems
- Measurement devices and Data loggers
- 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	Surface-mounting terminals	400 VAC	G3VM-402J	50	---
			G3VM-402J(TR)	---	2,500

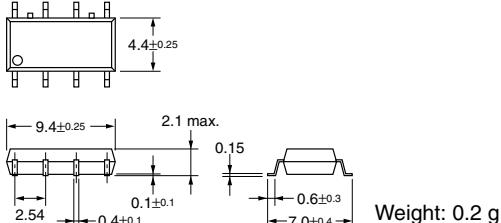
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-402J

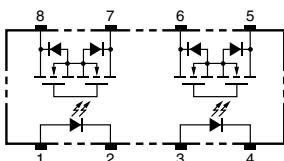


Note: The actual product is marked differently from the image shown here.



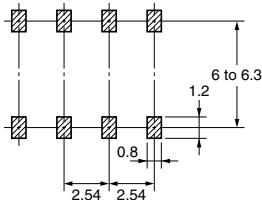
■ Terminal Arrangement/Internal Connections (Top View)

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

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■ Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

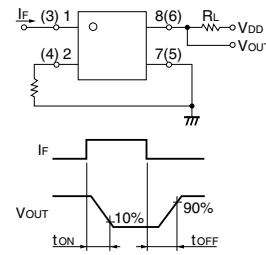
Item	Symbol	Rating	Unit	Measurement conditions
Input	LED forward current	I_F	50	mA
	Repetitive peak LED forward current	I_{FP}	1	A
	LED forward current reduction rate	$\Delta I_F/\text{ }^\circ\text{C}$	-0.5	mA/ $^\circ\text{C}$
	LED reverse voltage	V_R	5	V
	Connection temperature	T_j	125	$^\circ\text{C}$
Output	Load voltage (AC peak/DC)	V_{OFF}	400	V
	Continuous load current	I_O	120	mA
	ON current reduction rate	$\Delta I_{ON}/\text{ }^\circ\text{C}$	-1.2	mA/ $^\circ\text{C}$
Dielectric strength between input and output (See note 1.)	V_{I-O}	1,500	V_{rms}	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 ($T_a = 25^\circ\text{C}$)

Item	Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions
Input	LED forward voltage	V_F	1.0	1.15	1.3	V $I_F = 10 \text{ mA}$
	Reverse current	I_R	---	---	10	μA $V_R = 5 \text{ V}$
	Capacity between terminals	C_T	---	30	---	pF $V = 0, f = 1 \text{ MHz}$
	Trigger LED forward current	I_{FT}	---	1	3	mA $I_O = 120 \text{ mA}$
Output	Maximum resistance with output ON	R_{ON}	---	17	35	Ω $I_F = 5 \text{ mA}, I_O = 120 \text{ mA}$
	Current leakage when the relay is open	I_{LEAK}	---	0.003	1.0	μA $V_{OFF} = 400 \text{ V}$
	Capacity between terminals	C_{OFF}	---	70	---	pF $V = 0, f = 1 \text{ MHz}$
Capacity between I/O terminals	C_{I-O}	---	0.8	---	pF	$f = 1 \text{ MHz}, V_s = 0 \text{ V}$
Insulation resistance	R_{I-O}	1,000	---	---	M Ω	$V_{I-O} = 500 \text{ VDC}, R_{I-O} \leq 60\%$
Turn-ON time	t_{ON}	---	0.3	1	ms	$I_F = 10 \text{ mA}, R_L = 200 \Omega, V_{DD} = 20 \text{ V}$ (See note 2.)
Turn-OFF time	t_{OFF}	---	0.1	1	ms	

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

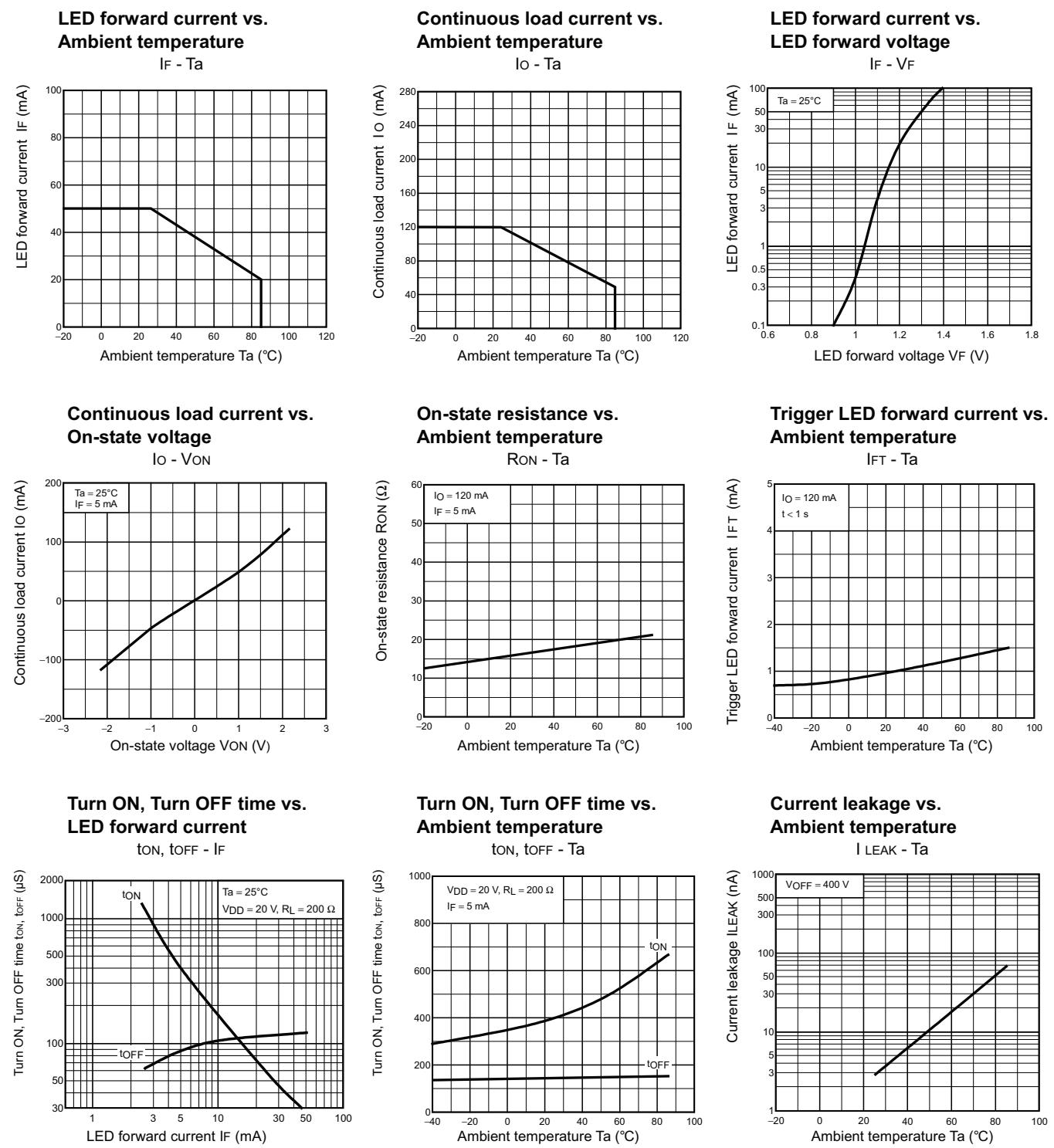


■ Recommended Operating Conditions

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	---	---	120	mA
Operating temperature	T_a	-20	---	65	$^\circ\text{C}$

■ Engineering Data



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ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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



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