

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

List of Models

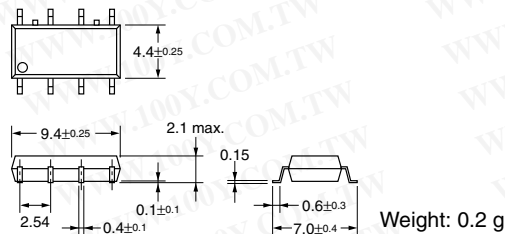
Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
DPST-NO	Surface-mounting terminals	400 VAC	G3VM-402J	50	---
			G3VM-402J(TR)	---	2,500

Dimensions

Note: All units are in millimeters unless otherwise indicated.

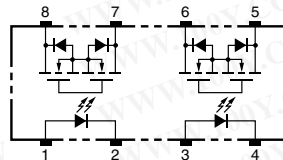
G3VM-402J

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



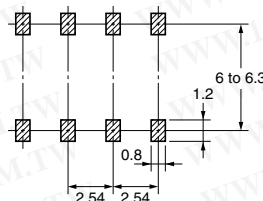
Terminal Arrangement/Internal Connections (Top View)

G3VM-402J



Actual Mounting Pad Dimensions (Recommended Value, Top View)

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■ Absolute Maximum Ratings (Ta = 25°C)

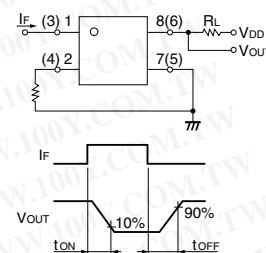
Item	Symbol	Rating	Unit	Measurement conditions
Input	LED forward current	I _F	50	mA
	Repetitive peak LED forward current	I _{FP}	1	A
	LED forward current reduction rate	Δ I _F /°C	-0.5	mA/°C
	LED reverse voltage	V _R	5	V
	Connection temperature	T _j	125	°C
Output	Load voltage (AC peak/DC)	V _{OFF}	400	V
	Continuous load current	I _O	120	mA
	ON current reduction rate	Δ I _{ON} /°C	-1.2	mA/°C
Dielectric strength between input and output (See note 1.)		V _{I-O}	1,500	V _{rms}
Operating temperature		T _a	-40 to +85	°C
Storage temperature		T _{stg}	-55 to +125	°C
Soldering temperature (10 s)		---	260	°C

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}	---	17	35	Ω
	Current leakage when the relay is open	I _{LEAK}	---	0.003	1.0	μA
	Capacity between terminals	C _{OFF}	---	70	---	pF
Capacity between I/O terminals		C _{I-O}	---	0.8	---	pF
Insulation resistance		R _{I-O}	1,000	---	---	MΩ
Turn-ON time		t _{ON}	---	0.3	1	ms
Turn-OFF time		t _{OFF}	---	0.1	1	ms

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



■ Recommended Operating Conditions

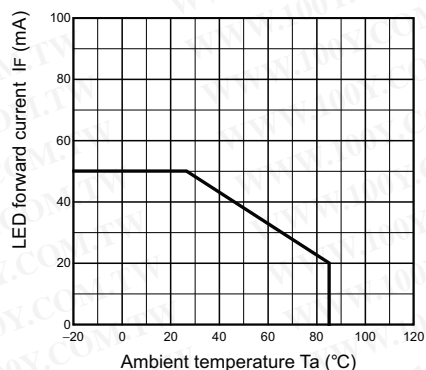
Use the G3VM under the following conditions so that the Relay will operate properly.

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	°C

Engineering Data

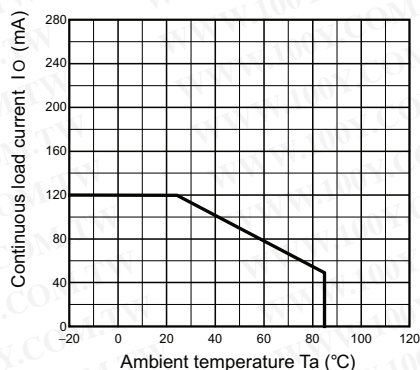
LED forward current vs.
Ambient temperature

$I_F - T_a$



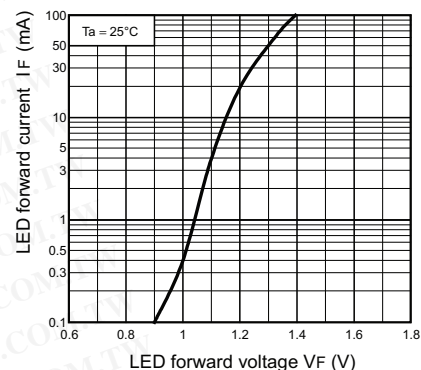
Continuous load current vs.
Ambient temperature

$I_O - T_a$



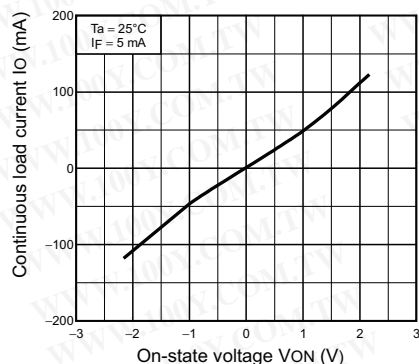
LED forward current vs.
LED forward voltage

$I_F - V_F$



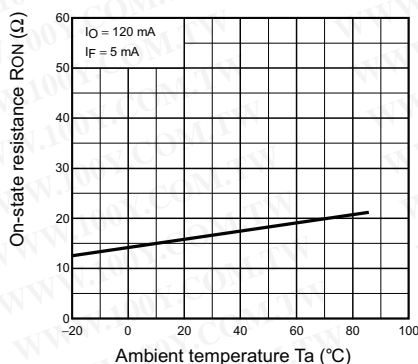
Continuous load current vs.
On-state voltage

$I_O - V_{ON}$



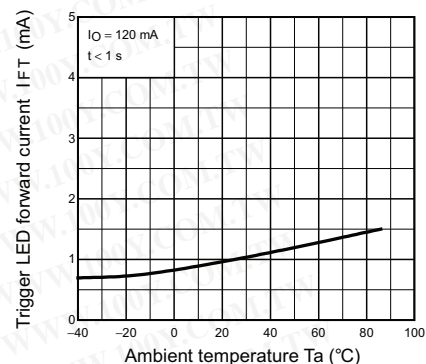
On-state resistance vs.
Ambient temperature

$R_{ON} - T_a$



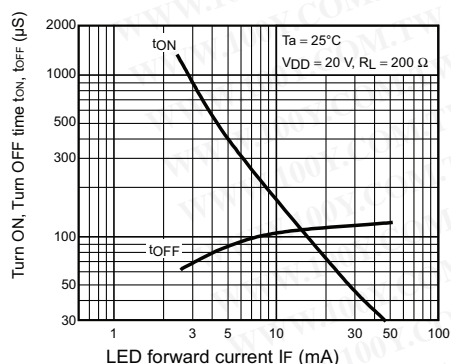
Trigger LED forward current vs.
Ambient temperature

$I_{FT} - T_a$



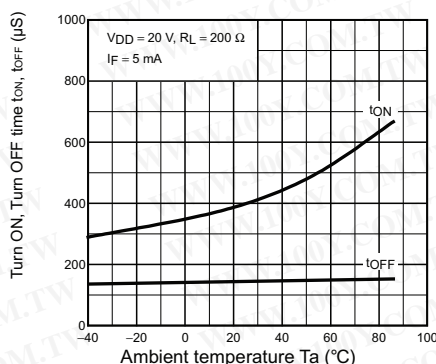
Turn ON, Turn OFF time vs.
LED forward current

$t_{ON}, t_{OFF} - I_F$



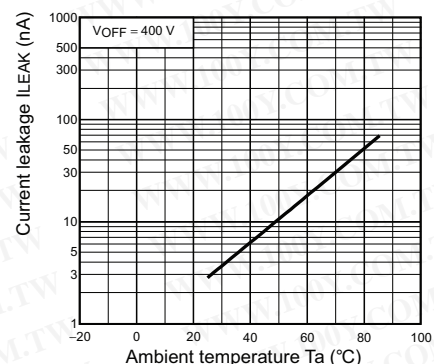
Turn ON, Turn OFF time vs.
Ambient temperature

$t_{ON}, t_{OFF} - T_a$

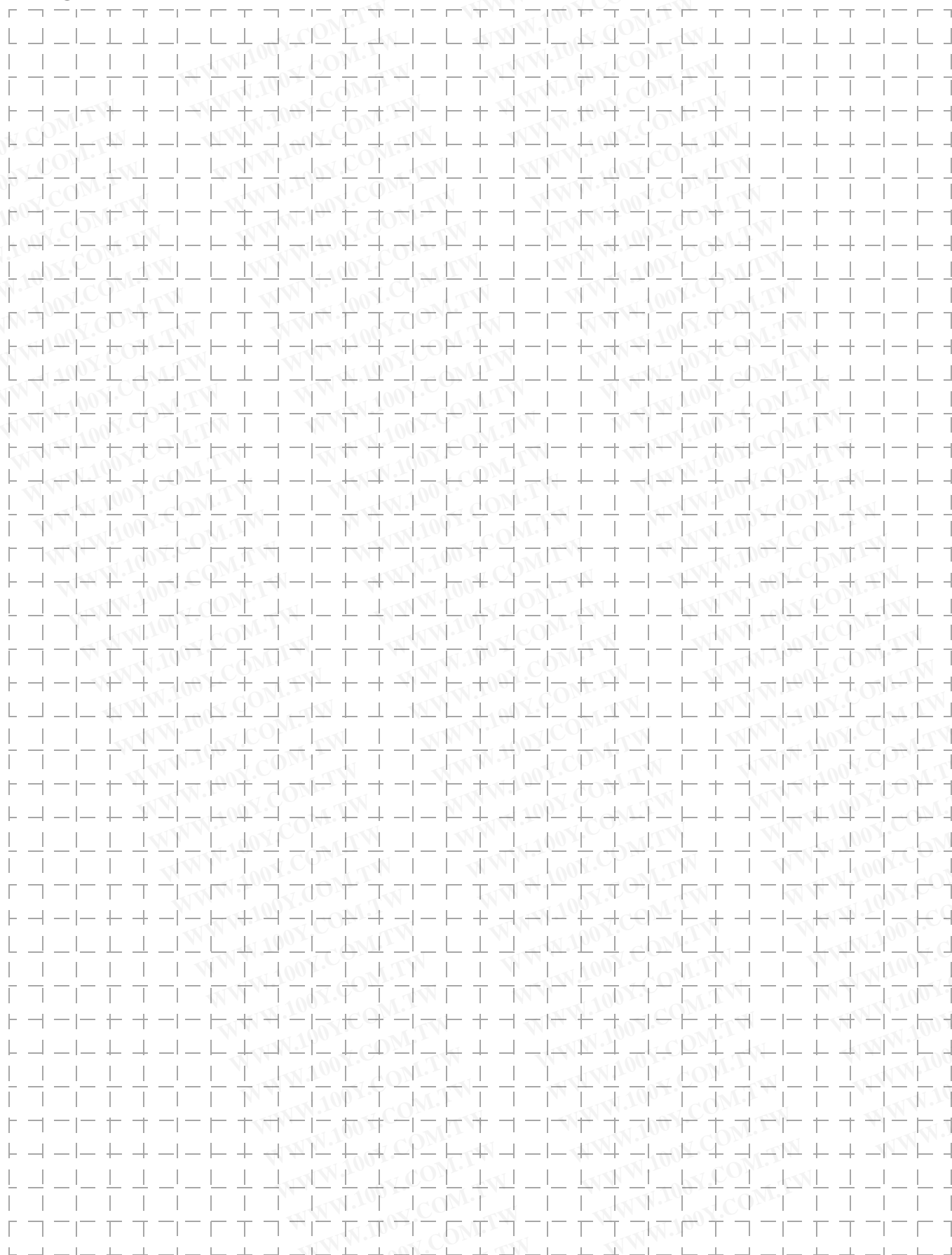


Current leakage vs.
Ambient temperature

$I_{LEAK} - T_a$



NTA



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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.

OMRON

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