

MOS FET Relays

G3VM-S5

Analog-Switching MOS FET Relay in 200-V Load Voltage Series, SOP Package.

- Ideal replacement for the dial-pulse relay or hook relay for modems and facsimile machines.
- Ideal for application to the line interface blocks of PBX and telephone exchange systems.
- Can be applied to hybrid IC circuits and card-type modems conforming to PCMCIA standards.
- Peak load voltage of 200 V.
- Approved standards: UL1577 (File No. E80555)
- RoHS Compliant.

■ Application Examples

- PBX subscriber interfaces
- Multi-functional telephones
- Card-type modems and fax modems
- Built-in modems in personal computers

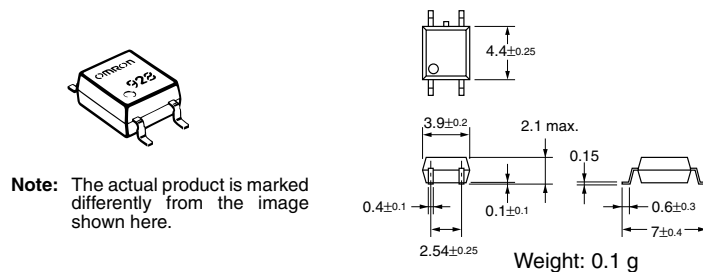
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting terminals	200 VAC	G3VM-S5	100	---
			G3VM-S5(TR)	---	2,500

■ Dimensions

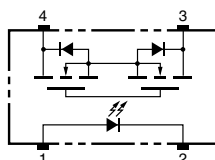
Note: All units are in millimeters unless otherwise indicated.

G3VM-S5



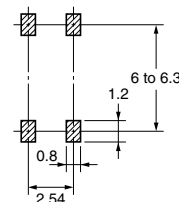
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-S5



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

G3VM-S5



■ Absolute Maximum Ratings (Ta = 25°C)

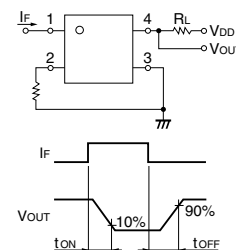
Item	Symbol	Rating	Unit	Measurement conditions
Input	LED forward current	I_F	50	mA
	Repetitive peak LED forward current	I_{FP}	1	A
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5	mA/°C
	LED reverse voltage	V_R	5	V
	Connection temperature	T_J	125	°C
Output	Load voltage (AC peak/DC)	V_{OFF}	200	V
	Continuous load current	I_O	150	mA
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	-1.5	mA/°C
	Connection temperature	T_J	125	°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 +100	°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}	---	5	8	Ω
	Current leakage when the relay is open	I_{LEAK}	---	0.00045	1.0	μA
	Capacity between terminals	C_{OFF}	---	100	---	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}	---	0.6	1.5	ms
Turn-OFF time		t_{OFF}	---	0.1	1.0	ms

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



■ Recommended Operating Conditions

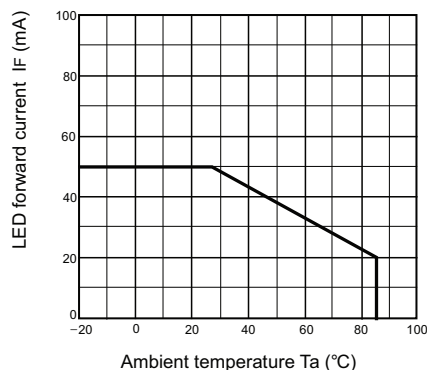
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}	---	150	200	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

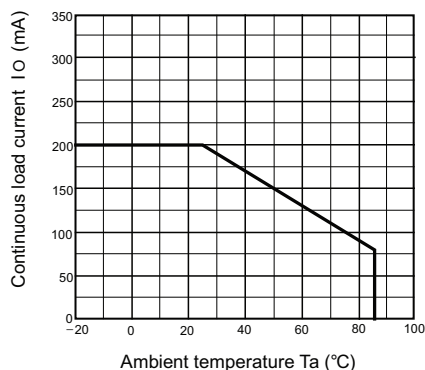
LED forward current vs. Ambient temperature

$I_F - T_a$



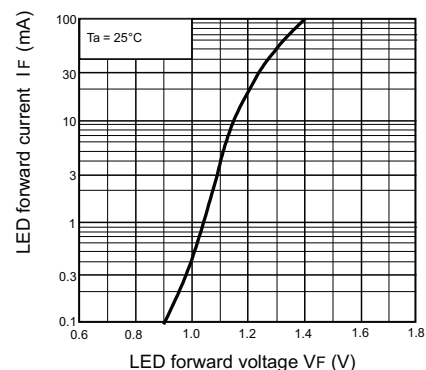
Continuous load current vs. Ambient temperature

$I_O - T_a$



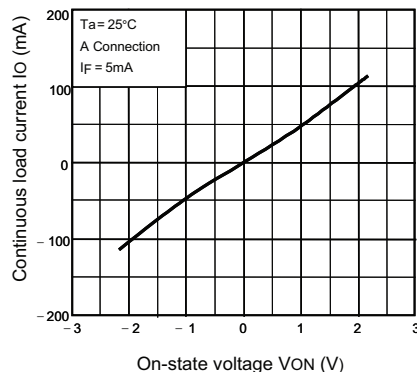
LED forward current vs. LED forward voltage

$I_F - V_F$



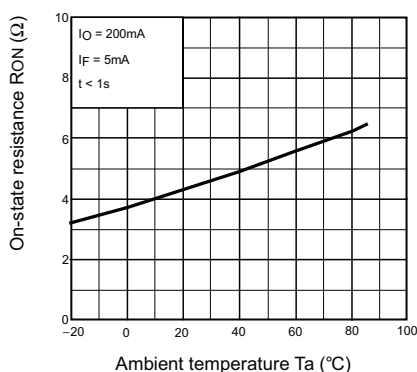
Continuous load current vs. On-state voltage

$I_O - V_{ON}$



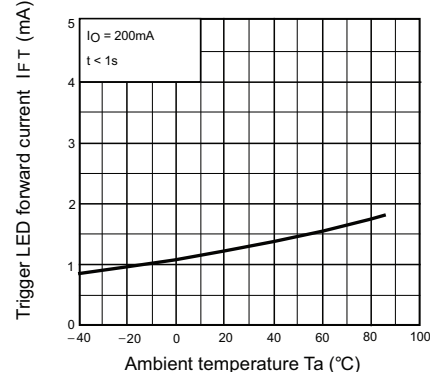
On-state resistance vs. Ambient temperature

$R_{ON} - T_a$



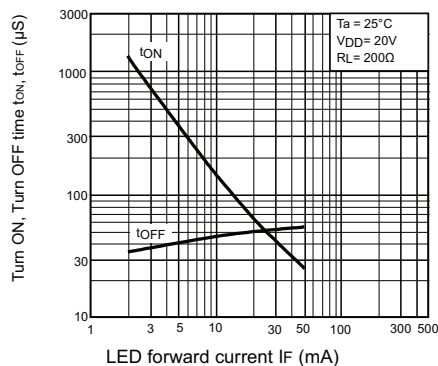
Trigger LED forward current vs. Ambient temperature

$I_{FT} - T_a$



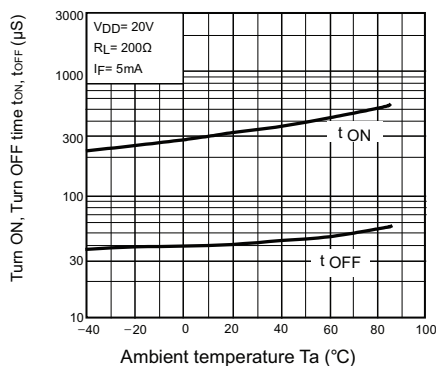
Turn ON, Turn OFF time vs. LED forward current

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



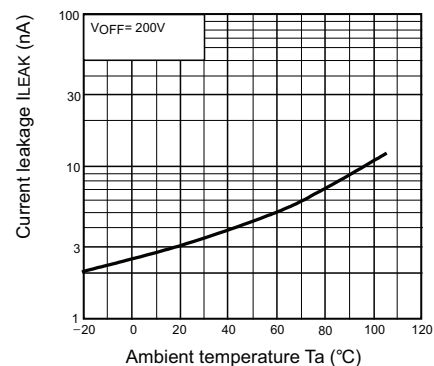
Turn ON, Turn OFF time vs. Ambient temperature

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



Current leakage vs. Ambient temperature

$I_{LEAK} - T_a$



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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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