

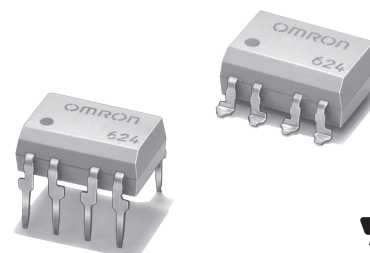
MOS FET Relays G3VM-W(F)L

MOS FET Relay Series with 350-V Load Voltage Current-limiting Models with 2 Outputs.

- Current Limit: 100 to 300 mA
- RoHS Compliant.

■ Application Examples

- Electronic automatic exchange systems
- Multi-functional telephones
- Cordless telephones
- Measurement devices



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

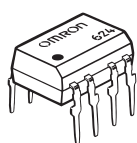
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Current limit	Number per stick	Number per tape
DPST-NO	PCB terminals	350 VAC	G3VM-WL	Yes	50	---
	Surface-mounting terminals		G3VM-WFL			
			G3VM-WFL(TR)		---	1,500

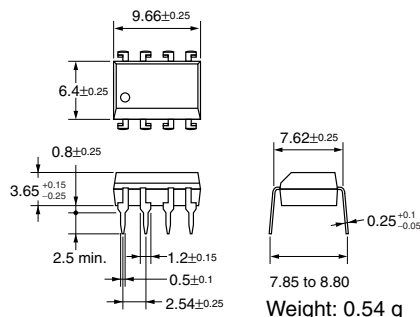
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-WL



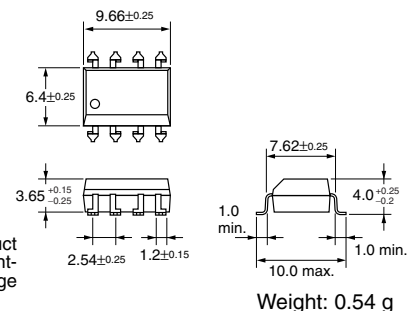
Note: The actual product is marked differently from the image shown here.



G3VM-WFL

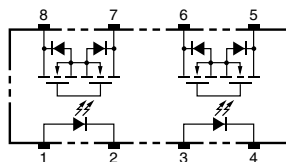


Note: The actual product is marked differently from the image shown here.

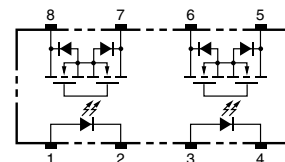


■ Terminal Arrangement/Internal Connections (Top View)

G3VM-WL

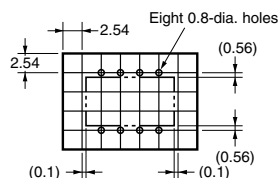


G3VM-WFL



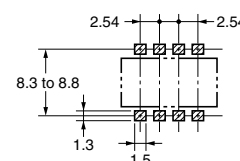
■ PCB Dimensions (Bottom View)

G3VM-WL



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

G3VM-WFL



■ Absolute Maximum Ratings (Ta = 25°C)

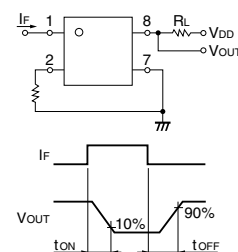
Item		Symbol	Rating	Unit	Measurement conditions
Input	LED forward current	I_F	50	mA	
	Repetitive peak LED forward current	I_{FP}	1	A	100 μ s pulses, 100 pps
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5	mA/ $^\circ\text{C}$	Ta $\geq 25^\circ\text{C}$
	LED reverse voltage	V_R	6	V	
	Connection temperature	T_j	125	$^\circ\text{C}$	
Output	Load voltage (AC peak/DC)	V_{OFF}	350	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 $\geq 25^\circ\text{C}$
	Connection temperature	T_j	125	$^\circ\text{C}$	
Dielectric strength between input and output (See note 1.)		V_{I-O}	2,500	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 (Ta = 25°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}	---	22	35	Ω $I_F = 5 \text{ mA}, I_O = 120 \text{ mA}$
	Current leakage when the relay is open	I_{LEAK}	---	0.0005	1.0	μA $V_{OFF} = 350 \text{ V}$
	Capacity between terminals	C_{OFF}	---	40	---	pF $V = 0, f = 1 \text{ MHz}$
Limit current		I_{LIM}	150	---	300	mA $I_F = 5 \text{ mA}, V_{DD} = 5 \text{ V}, t = 5 \text{ ms}$
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 $V_{I-O} = 500 \text{ VDC}, R_{oH} \leq 60\%$
Turn-ON time		t_{ON}	---	0.25	1.0	ms $I_F = 5 \text{ mA}, R_L = 200 \Omega, V_{DD} = 20 \text{ V}$ (See note 2.)
Turn-OFF time		t_{OFF}	---	0.15	1.0	ms

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



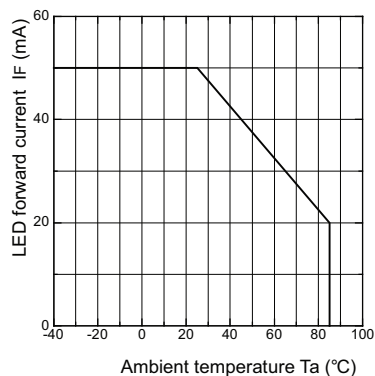
■ Recommended Operating Conditions

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

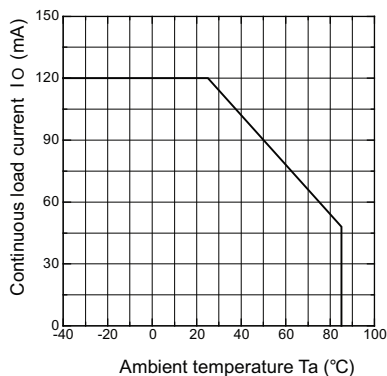
Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}	---	---	280	V
Operating LED forward current	I_F	5	7.5	25	mA
Continuous load current (AC peak/DC)	I_O	---	---	100	mA
Operating temperature	T_a	-20	---	65	$^\circ\text{C}$

■ Engineering Data

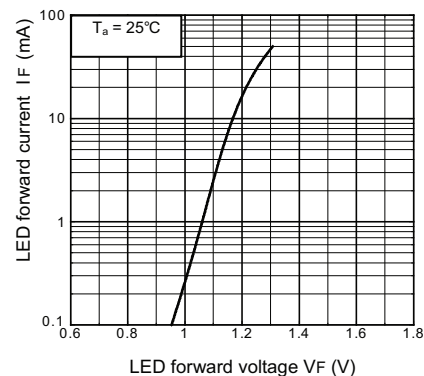
LED forward current vs. Ambient temperature
IF - Ta



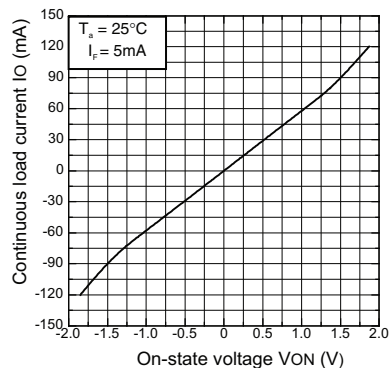
Continuous load current vs. Ambient temperature
IO - Ta



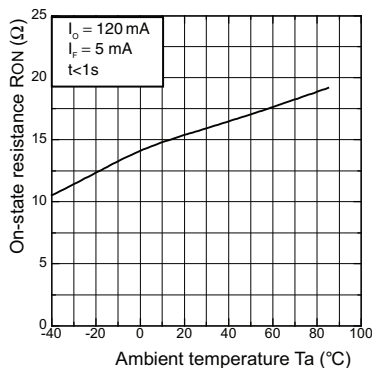
LED forward current vs. LED forward voltage
IF - VF



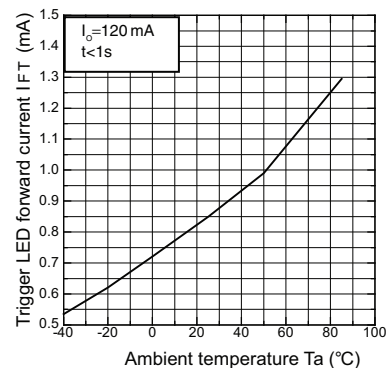
Continuous load current vs. On-state voltage
IO - VON



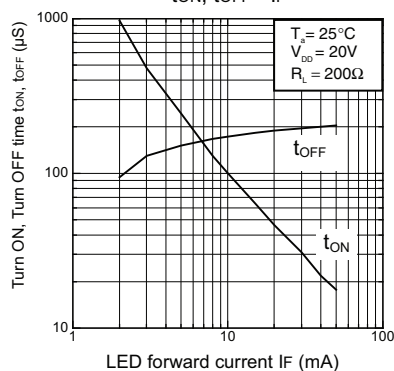
On-state resistance vs. Ambient temperature
RON - Ta



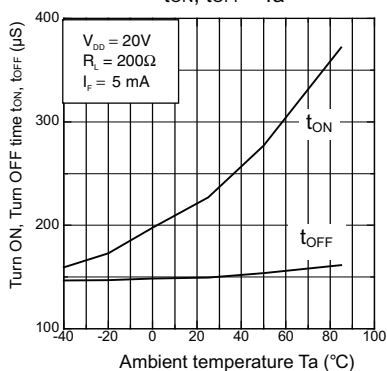
Trigger LED forward current vs. Ambient temperature
IFT - Ta



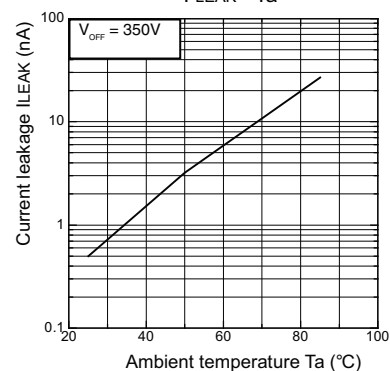
Turn ON, Turn OFF time vs. LED forward current
tON, tOFF - IF



Turn ON, Turn OFF time vs. Ambient temperature
tON, tOFF - Ta



Current leakage vs. Ambient temperature
ILEAK - Ta



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