

MOS FET Relays

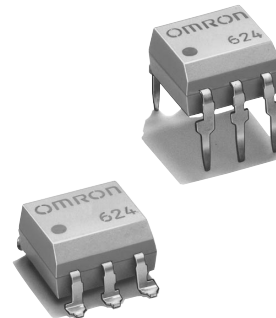
G3VM-3(F)L

Analog-switching MOS FET Relay with 350-V Load Voltage and Current Limit.

- Approved standards: UL1577 (File No. E80555)

■ Application Examples

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



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

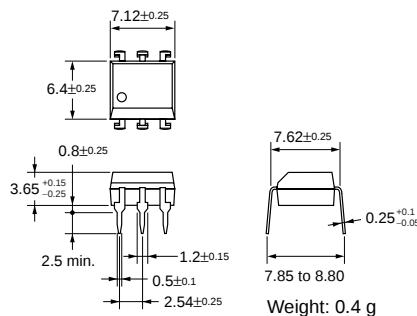
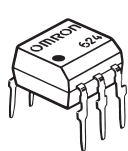
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Current limit	Number per stick	Number per tape
SPST-NO	PCB terminals	350 VAC	G3VM-3L	Yes	50	---
	Surface-mounting terminals		G3VM-3FL			
			G3VM-3FL(TR)		---	1,500

■ Dimensions

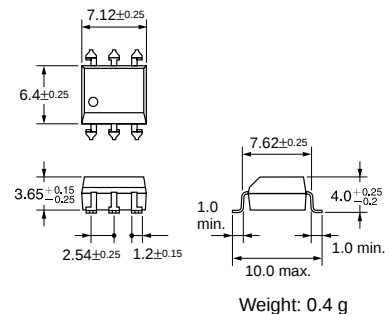
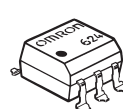
Note: All units are in millimeters unless otherwise indicated.

G3VM-3L



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

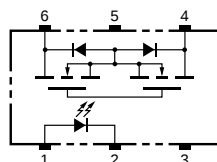
G3VM-3FL



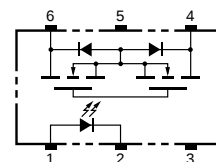
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■ Terminal Arrangement/Internal Connections (Top View)

G3VM-3L

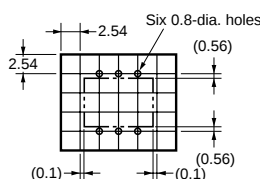


G3VM-3FL



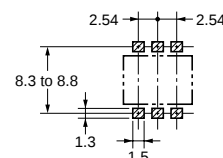
■ PCB Dimensions (Bottom View)

G3VM-3L



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

G3VM-3FL



Absolute Maximum Ratings (Ta = 25°C)

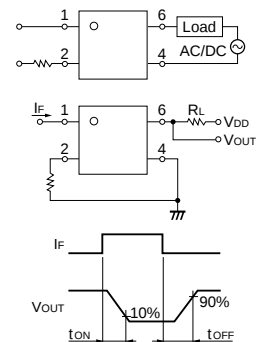
Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I _F	50	mA	
	Repetitive peak LED forward current	I _{FP}	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	Δ I _F /°C	-0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	T _J	125	°C	
Output	Output dielectric strength	V _{OFF}	350	V	
	Continuous load current	I _O	120	mA	
	ON current reduction rate	Δ I _{ON} /°C	-1.2	mA/°C	Ta ≥ 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	$V_R = 5\text{ V}$
	Capacity between terminals	C_T	---	30	pF	$V = 0, f = 1\text{ MHz}$
	Trigger LED forward current	I_{FT}	---	3	mA	$I_O = 120\text{ mA}$
Output	Maximum resistance with output ON	R_{ON}	---	22	35	Ω
	Current leakage when the relay is open	I_{LEAK}	---	1.0	μA	$V_{OFF} = 350\text{ V}$
Limit current		I_{LIM}	150	---	300	mA
Capacity between I/O terminals		C_{I-O}	---	0.8	---	pF
Insulation resistance		R_{I-O}	1,000	---	---	MΩ
Turn-ON time		t_{ON}	---	1.0	ms	$I_F = 5\text{ mA}, R_L = 200\text{ }\Omega, V_{DD} = 20\text{ V}$ (See note 2.)
Turn-OFF time		t_{OFF}	---	1.0	ms	

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



Recommended Operating Conditions

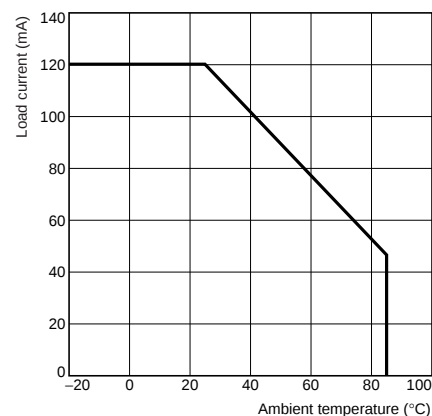
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V_{DD}	---	---	280	V
Operating LED forward current	I_F	5	7.5	25	mA
Continuous load current	I_O	---	---	120	mA
Operating temperature	T_a	-20	---	65	°C

Engineering Data

Load Current vs. Ambient Temperature

G3VM-3(F)L



Safety Precautions

Refer to page 6 for precautions common to all G3VM models.