

MOS FET Relays

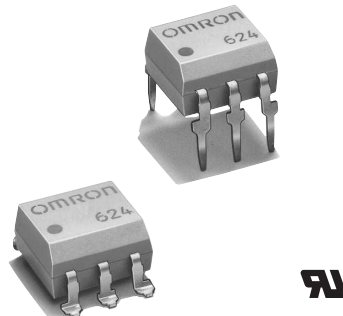
G3VM-3(F)L

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.

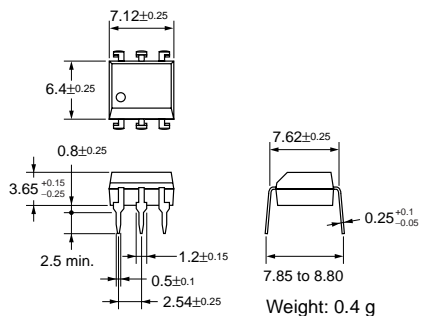
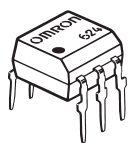
■ List of Models

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)			

■ Dimensions

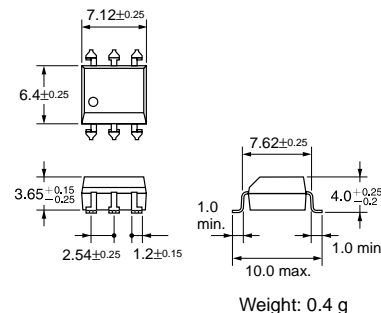
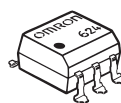
Note: All units are in millimeters unless otherwise indicated.

G3VM-3L



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

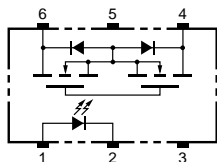
G3VM-3FL



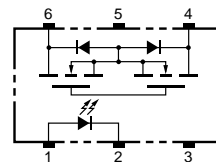
Note: The actual product is marked differently from the image shown here.

■ Terminal Arrangement/Internal Connections (Top View)

G3VM-3L

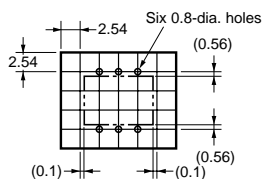


G3VM-3FL



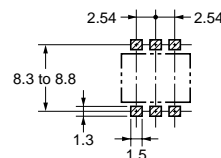
■ PCB Dimensions (Bottom View)

G3VM-3L



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

G3VM-3FL



Absolute Maximum Ratings (Ta = 25°C)

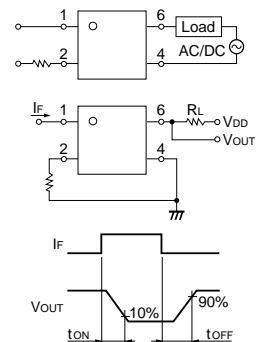
Item	Symbol	Rating	Unit	Measurement Conditions	
Input	LED forward current	I _F	50	mA	
	Repetitive peak LED forward current	I _{FP}	1	A	
	LED forward current reduction rate	Δ I _F /°C	-0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	V _R	5	V	
	Connection temperature	T _j	125	°C	
Output	Output dielectric strength	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	Vrms	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	I _F = 10 mA
	Reverse current	I _R	---	---	10	μA	V _R = 5 V
	Capacity between terminals	C _T	---	30	---	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{FT}	---	---	3	mA	I _O = 120 mA
Output	Maximum resistance with output ON	R _{ON}	---	22	35	Ω	I _F = 5 mA, I _O = 120 mA
	Current leakage when the relay is open	I _{LEAK}	---	---	1.0	μA	V _{OFF} = 350 V
Limit current	I _{LIM}	150	---	300	mA	I _F = 5 mA, V _{DD} = 5 V, t = 5 ms	
Capacity between I/O terminals	C _{I-O}	---	0.8	---	pF	f = 1 MHz, V _s = 0 V	
Insulation resistance	R _{I-O}	1,000	---	---	MΩ	V _{I-O} = 500 VDC, RoH ≤ 60%	
Turn-ON time	t _{ON}	---	---	1.0	ms	I _F = 5 mA, R _L = 200 Ω, V _{DD} = 20 V (See note 2.)	
Turn-OFF time	t _{OFF}	---	---	1.0	ms		

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



Recommended Operating Conditions

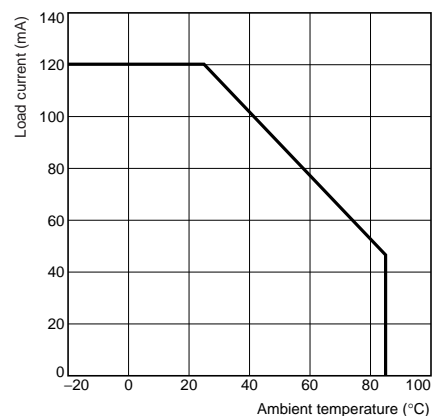
Use the G3VM under the following conditions so that the Relay will operate properly.

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.