OMRON

MOS FET Relay

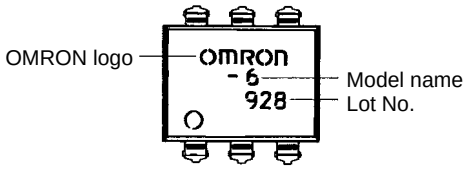
G3VM-6(F)

New Model with Dielectric Strength of 400 V and 5,000 V between Input and Output Terminals

- UL1577 (File No. E67349) pending approval.
- EN60065 (Recognition No. 8318) pending approval.
- EN60950 (Recognition No. 8319) pending approval.
- VDE0884 (Recognition No. 9850781) pending approval.

Ordering Information

■ Appearance



Note: "G3VM" is not printed on the actual product.

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick
SPST-NO	PCB terminals	400 VAC (DC or AC)	G3VM-6	50
	Surface-mounting terminals		G3VM-6F	50

Note: Only available on stick.

Application Examples

- Electronic automatic exchange systems
- Gauging control systems
- Data management systems
- Gauging systems

Specifications

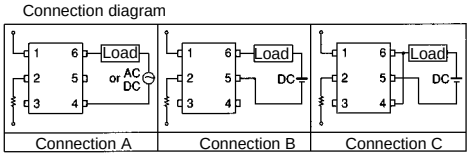
■ Absolute Maximum Ratings (Ta = 25°C)

Item			Symbol	Ratings	Unit
Input	**LED forward current**		I_F	30	mA
	Repetitive peak LED forward current (Duty: 1% max.; pulse width: 100 μs max.)		I_{FP}	1	A
	LED reverse voltage		V_R	5	V
Output	**Output dielectric strength (see note 2)**	**Connection A**	V_{BO}	DC or AC peak value: –400 to 400	V
		Connection B	V_{BO}	DC: 0 to 400	V
		Connection C			
	Continuous load current (see note 1)	**Connection A**	I_O	150	mA
		Connection B		200	
		Connection C		300	
	Dielectric strength between I/O terminals (AC for 1 min, operating ambient humidity ≦ 60%) (see note 2)		$V_{I–O}$	5,000	Vrms
Ambient temperature (with no icing or condensation)			Ta	–40 to +85	°C
Storage temperature (with no icing or condensation)			Tstg	–55 to +125	°C
Soldering temperature (10 s)			---	260	°C

Note: 1. The output load current varies depending on the ambient temperature. Refer to *Engineering Data*.

2. The dielectric strength was checked for each connection by applying a voltage between each pairing of pins 1, 2, and 3 and pins 4, 5, and 6.

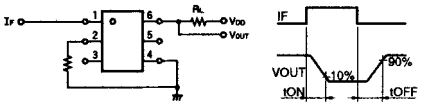
Connection diagram



■ Electrical Characteristics (Ta = 25°C)

Item		Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions
Output ON resistance	**Connection A**	R_{ON}	---	---	12	Ω	I_F=10 mA, I_{ON}=100 mA
	Connection B		---	---	6		
	Connection C		---	---	3		
Current leakage when the relay is closed		I_{LEAK}	---	---	1.0	μA	V_{ON}=V_{BO}
LED forward voltage		V_F	1.2	1.4	1.7	V	I_F=10 mA
Capacity between I/O terminals		C_{I-O}	---	0.8	---	pF	f=1 MHz
Insulation resistance between I/O terminals		R_{I-O}	5 x 10^{10}	---	---	Ω	V_F=0, V_0=0, V_{I-O}=500 VDC
Operating time		T_{ON}	---	---	1	ms	I_F=10 mA, V_{DD}=20 V, R_L=200 Ω (see note)
Release time		T_{OFF}	---	---	1	ms	I_F=10 mA, V_{DD}=20 V, R_L=200 Ω (see note)

Note: Switching Time Measuring Circuit



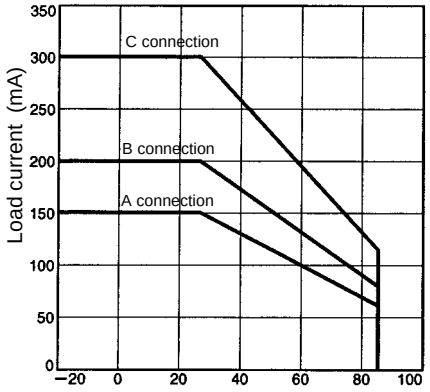
■ Recommended Operating Conditions

Item	Symbol	Minimum	Typical	Maximum	Unit
Operating voltage	V_{DD}	---	---	320	V
Forward current	I_F	10	15	20	mA
ON current	I_{ON}	---	---	150	mA
Operating temperature	T_{opr}	–20	---	80	°C

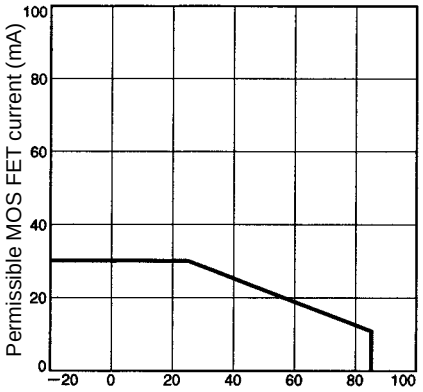
Engineering Data

■ Reference Data

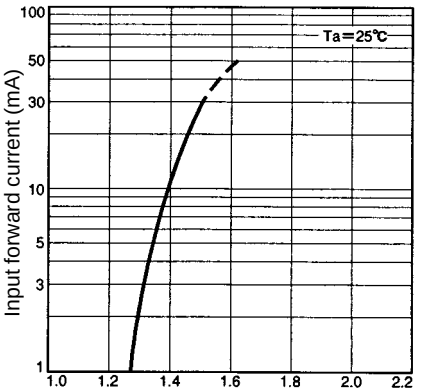
Load Current vs. Ambient Temperature



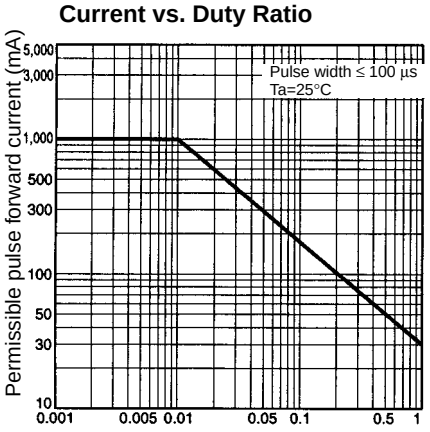
Permissible MOS FET Current vs. Ambient Temperature



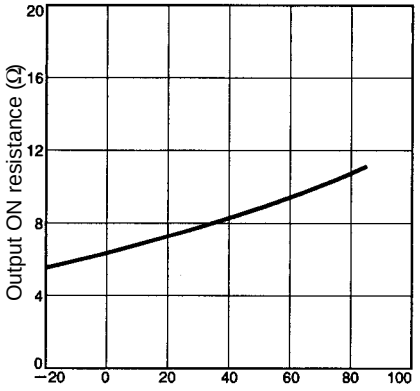
Input Forward Current vs. Input Forward Voltage



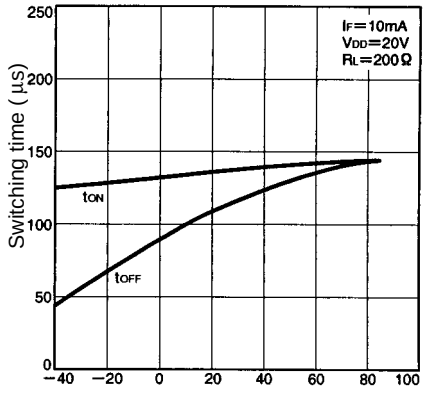
Permissible Pulse Forward Current vs. Duty Ratio



Output ON Resistance vs. Ambient Temperature



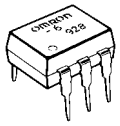
Switching Time vs. Ambient Temperature

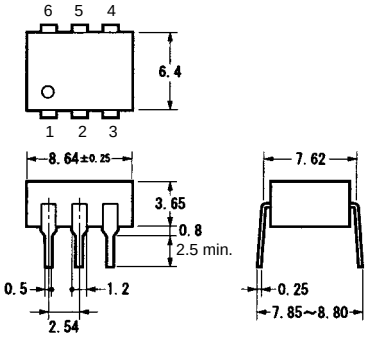


Dimensions

Note: All units are in millimeters unless otherwise indicated.

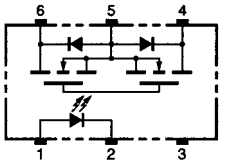
G3VM-6



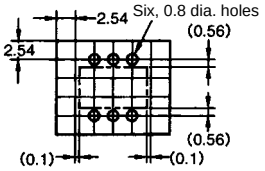


Unit: mm
Weight: 0.49 g

Terminal Arrangement/ Internal Connections (Top View)



Actual Mounting Pad Dimensions (Recommended Value, Top View)



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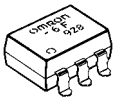
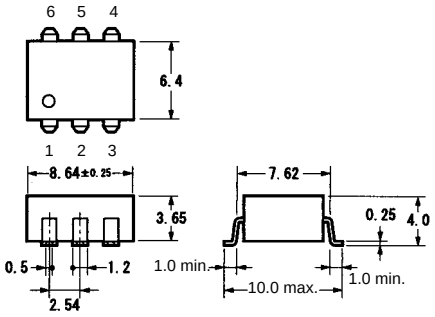
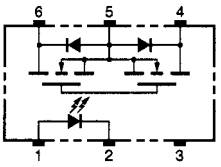
G3VM-6F



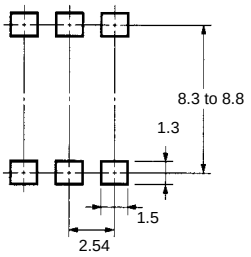


Unit: mm
Weight: 0.49 g

Terminal Arrangement/ Internal Connections (Top View)



Actual Mounting Pad Dimensions (Recommended Value, Top View)



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Precautions

■ Correct Use

Recommended Operating Conditions

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

Item	Min.	Type	Max.
Operating LED forward current	---	1 mA	5 mA
Releasing LED forward voltage	0.1 V	0.5 V	---