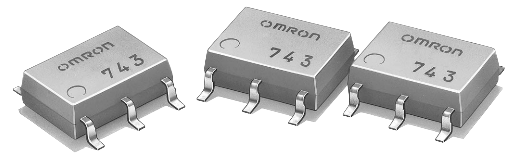
OMRON

MOS FET Relays

G3VM-351H

Slim, 2.1-mm High Relay Incorporating a MOS FET Optically Coupled with an Infrared LED in a Miniature, Flat SOP Package



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

- Upgraded G3VM-S3 Series.
- Continuous load current of 110 mA.
- Dielectric strength of 1,500 Vrms between I/O.

NEW

■ Application Examples

- Broadband systems
- Measurement devices
- Data loggers
- Amusement machines

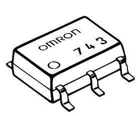
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting terminals	350 VAC	G3VM-351H	75	---
			G3VM-351H(TR)	---	2,500

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-351H



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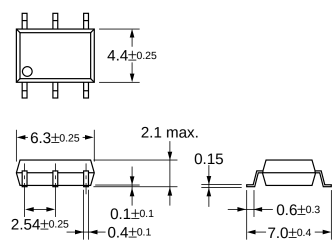
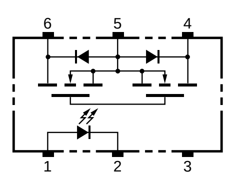


Weight: 0.13 g

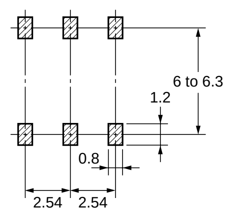
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-351H



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

G3VM-351H

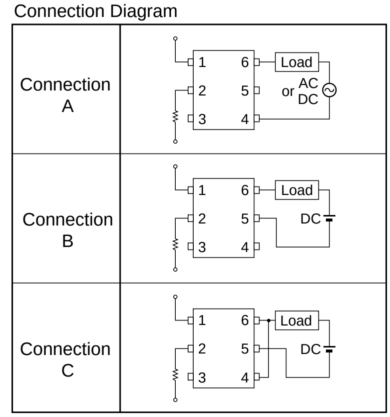


■ Absolute Maximum Ratings (Ta = 25°C)

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		$\Delta I_F/°C$	−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	Connection A	I_O	110	mA	
		Connection B		110		
		Connection C		220		
	ON current reduction rate	Connection A	$\Delta I_{ON}/°C$	−1.1	mA/°C	Ta ≥ 25°C
		Connection B		−1.1		
		Connection C		−2.2		
	Connection temperature		T_j	125	°C	
Dielectric strength between input and output (See note 1.)			V_{I-O}	1,500	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.

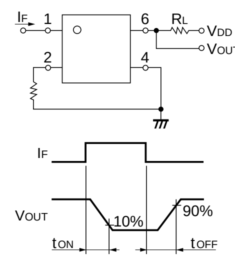
Connection Diagram



■ 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}	---	1	3	mA	I_O = 110 mA
Output	Maximum resistance with output ON	Connection A	R_{ON}	---	25	35	Ω	I_F = 5 mA, I_O = 110 mA, t < 1 s
				---	35	50	Ω	I_F = 5 mA, I_O = 110 mA
		Connection B		---	28	40	Ω	I_F = 5 mA, I_O = 110 mA
		Connection C		---	14	20	Ω	I_F = 5 mA, I_O = 220 mA
	Current leakage when the relay is open		I_{LEAK}	---	---	1.0	µA	V_{OFF} = 350 V
Capacity between I/O terminals			C_{I-O}	---	0.8	---	pF	f = 1 MHz, Vs = 0 V
Insulation resistance			R_{I-O}	1,000	---	---	MΩ	V_{I-O} = 500 VDC, RoH ≤ 60%
Turn-ON time			tON	---	0.3	1.0	ms	I_F = 5 mA, R_L = 200 Ω, V_{DD} = 20 V (See note 2.)
Turn-OFF time			tOFF	---	0.1	1.0	ms	

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



■ Recommended Operating Conditions

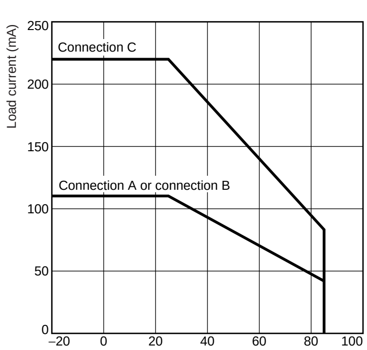
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V_{DD}	---	---	280	V
Operating LED forward current	I_F	5	10	25	mA
Continuous load current	I_O	---	---	100	mA
Operating temperature	T_a	− 20	---	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature

G3VM-351H



■ Safety Precautions

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