

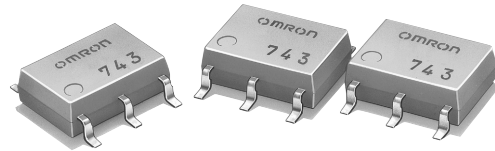
# MOS FET Relays G3VM-351H

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

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

■ **Application Examples**

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



**NEW**

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

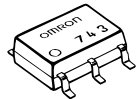
■ **List of Models**

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

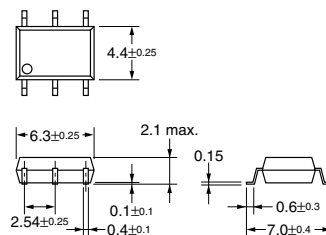
■ **Dimensions**

**Note:** All units are in millimeters unless otherwise indicated.

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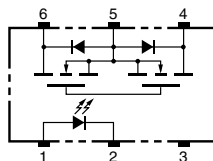
**Note:** The actual product is marked differently from the image shown here.



Weight: 0.13 g

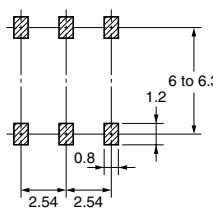
■ **Terminal Arrangement/Internal Connections (Top View)**

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

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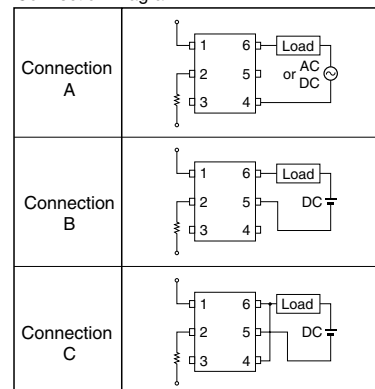


■ Absolute Maximum Ratings (Ta = 25°C)

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	$\Delta I_F/^\circ\text{C}$	-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	$\Delta I_{ON}/^\circ\text{C}$	-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.

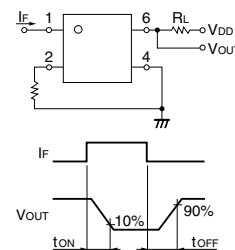
Connection Diagram



■ 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	$I_F = 10 \text{ mA}$	
	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	$I_O = 110 \text{ mA}$	
Output	Maximum resistance with output ON	Connection A	$R_{ON}$	---	25	35	Ω	$I_F = 5 \text{ mA}, I_O = 110 \text{ mA}, t < 1 \text{ s}$
				---	35	50	Ω	$I_F = 5 \text{ mA}, I_O = 110 \text{ mA}$
		Connection B		---	28	40	Ω	$I_F = 5 \text{ mA}, I_O = 110 \text{ mA}$
	Connection C		---	14	20	Ω	$I_F = 5 \text{ mA}, I_O = 220 \text{ mA}$	
	Current leakage when the relay is open	$I_{LEAK}$	---	---	1.0	μA	$V_{OFF} = 350 \text{ V}$	
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	---	---	MΩ	$V_{I-O} = 500 \text{ VDC}, RoH \leq 60\%$		
Turn-ON time	tON	---	0.3	1.0	ms	$I_F = 5 \text{ mA}, R_L = 200 \Omega, V_{DD} = 20 \text{ V}$ (See note 2.)		
Turn-OFF time	tOFF	---	0.1	1.0	ms			

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



■ Recommended Operating Conditions

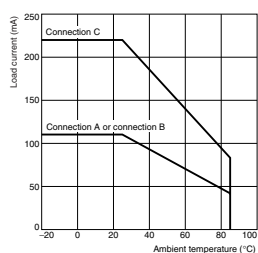
Use the G3VM under the following conditions so that the Relay will operate properly.

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



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