

MOS FET Relays

G3VM-353B/B1/E/E1

6-pin Analog-switching MOS FET Relay with SPST-NC (Single-pole, Single-throw, Normally Closed) Contacts
General-purpose Series Added

- Switches minute analog signals.
- Switching AC and DC.
- General-purpose series (high ON-resistance) added.

Caution

Refer to "Common Precautions" on page 2.

Application Examples

- Electronic automatic exchange systems
- Security systems
- Datacom (modem) systems
- FA systems
- Measurement devices

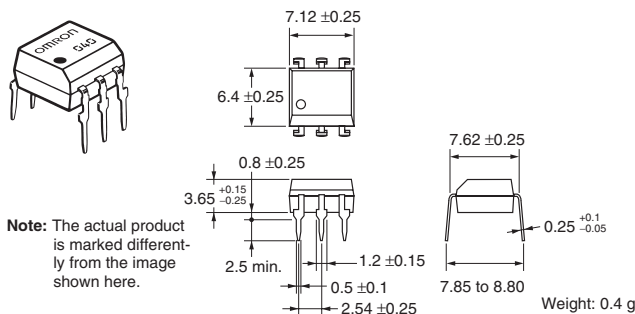
List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Minimum packaging unit	
				Number per stick	Number per tape
SPST-NC	PCB terminals	350 V AC	G3VM-353B	50	---
	Surface-mounting terminals		G3VM-353B1		
			G3VM-353E		
			G3VM-353E1		
			G3VM-353E(TR)	---	1,500
			G3VM-353E1(TR)		

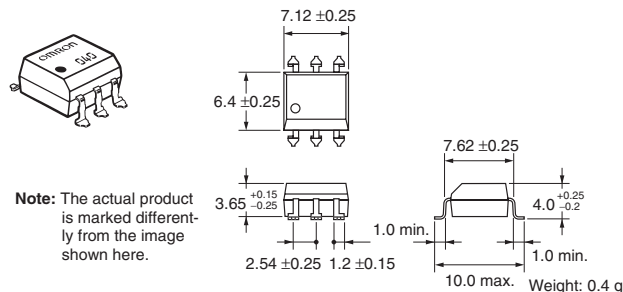
Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-353B/B1

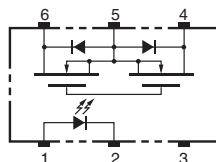


G3VM-353E/E1

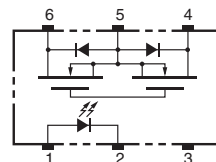


Terminal Arrangement/Internal Connections (Top View)

G3VM-353B/B1

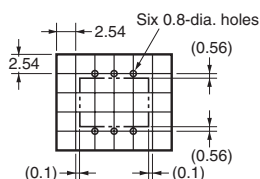


G3VM-353E/E1



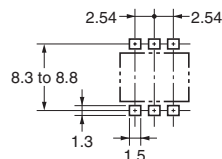
PCB Dimensions (Bottom View)

G3VM-353B/B1



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-353E/E1



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
	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	150 (100)
		Connection B		150 (100)
		Connection C		300 (200)
	ON current reduction rate	Connection A	$\Delta I_{ON}/^\circ\text{C}$	-1.5 (-1)
		Connection B		-1.5 (-1)
		Connection C		-3.0 (-2)
	Connection temperature	T_J	125	°C
Dielectric strength between input and output (See note 1.)		V_{I-O}	2,500	Vrms
Operating temperature		T_a	-40 to 85	°C
Storage temperature		T_{stg}	-55 to 125	°C
Soldering temperature (10 s)		---	260	°C

Values inside parentheses () are for G3VM-353B1/E1.

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 _{OFF} = 10 μA
Output	Maximum resistance with output ON	Connection A	R _{ON}	---	15 (27)	25 (50)	Ω	I _O = 150 mA
		Connection B		---	8 (20)	14 (43)	Ω	I _O = 150 mA
		Connection C		---	4 (10)	7 (---)	Ω	I _O = 300 mA
	Current leakage when the relay is open		I _{LEAK}	---	---	1.0	μA	I _F = 5 mA, V _{OFF} = 350 V
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 V DC, R _{OH} ≤ 60%
Turn-ON time			t _{ON}	---	0.1 (0.25)	1.0 (0.5)	ms	I _F = 5 mA, R _I = 200 Ω,
Turn-OFF time			t _{OFF}	---	1.0 (0.5)	3.0 (1)	ms	V _{DD} = 20 V (See note 2.)

Values inside parentheses () are for G3VM-353B1/E1.

Recommended Operating Conditions

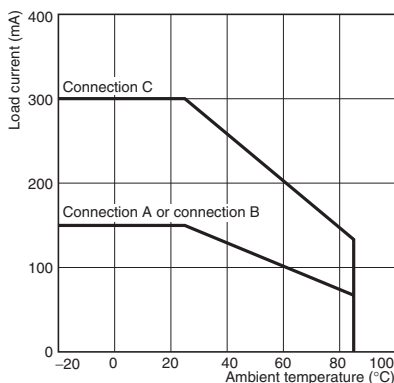
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V_{DD}	---	---	280	V
Operating LED forward current	I_F	5	---	25	mA
Continuous load current	I_O	---	---	150 (100)	mA
Operating temperature	T_a	-20	---	65	°C

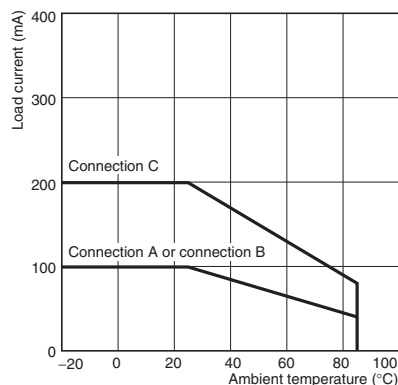
Values inside parentheses () are for G3VM-353B1/E1.

Engineering Data

Load Current vs. Ambient Temperature G3VM-353B/E

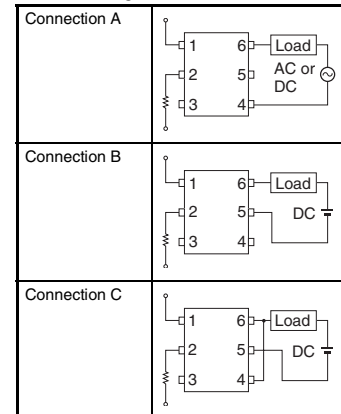


Load Current vs. Ambient Temperature G3VM-353B1/E1

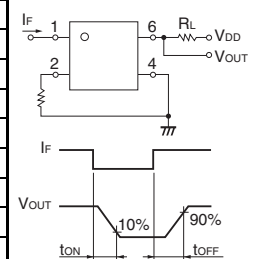


Note 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

Connection Diagram



Note 2. Turn-ON and Turn-OFF Times



Safety Precautions

Refer to page 2 for precautions common to all G3VM models.