

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

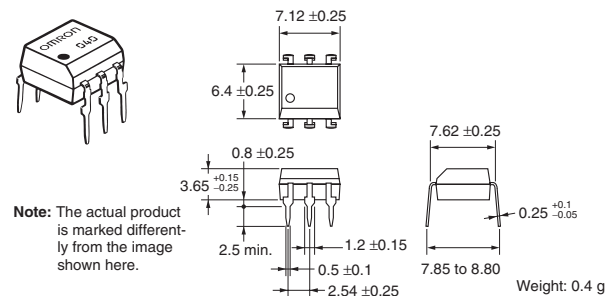
List of Models

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)		

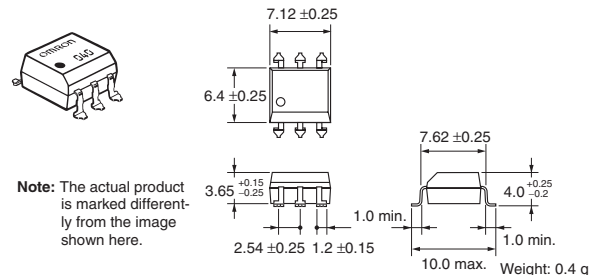
Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-353B/B1

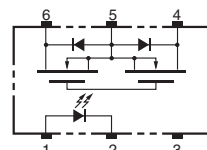


G3VM-353E/E1

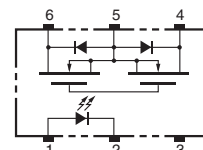


Terminal Arrangement/Internal Connections (Top View)

G3VM-353B/B1

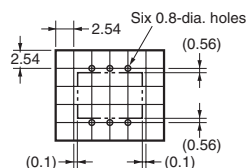


G3VM-353E/E1



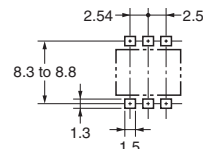
PCB Dimensions (Bottom View)

G3VM-353B/B1



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-353E/E1

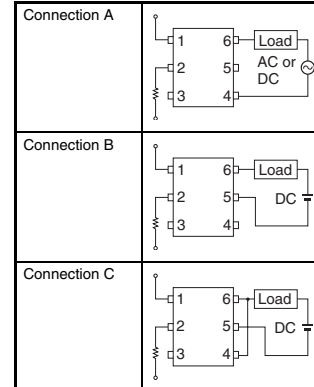


Absolute Maximum Ratings (Ta = 25°C)

Item			Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current		I _F	50	mA	
	Repetitive peak LED forward current		I _{FP}	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate		ΔI _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	150 (100)	mA	
		Connection B		150 (100)		
		Connection C		300 (200)		
	ON current reduction rate	Connection A	ΔI _{ON} /°C	−1.5 (−1)	mA/°C	Ta ≥ 25°C
		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	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



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
	Reverse current	I_R	---	---	10	μA
	Capacity between terminals	C_T	---	30	---	pF
	Trigger LED forward current	I_{FT}	---	1	3	mA
Output	Maximum resistance with output ON	Connection A	R_{ON}	---	15 (27)	Ω
		Connection B		---	8 (20)	Ω
		Connection C		---	4 (10)	Ω
	Current leakage when the relay is open	I_{LEAK}	---	---	1.0	μA
Capacity between I/O terminals		$C_{I,O}$	---	0.8	---	pF
Insulation resistance		$R_{I,O}$	1,000	---	---	MΩ
Turn-ON time		t_{ON}	---	0.1 (0.25)	1.0 (0.5)	ms
Turn-OFF time		t_{OFF}	---	1.0 (0.5)	3.0 (1)	ms

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

Recommended Operating Conditions

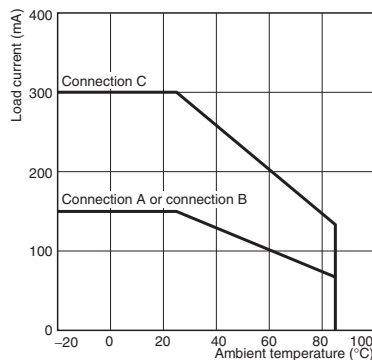
Use the G3VM under the following conditions so that the Relay will operate properly.

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

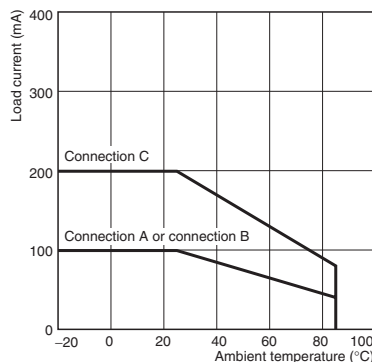
Values inside parentheses () are for G3VM-353B1/E1.

Engineering Data

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



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



Safety Precautions

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