

MOS FET Relays

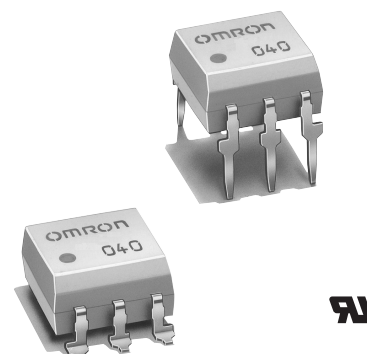
G3VM-353B/E

Analog-switching MOS FET Relay with SPST-NC Contact.

- Switches minute AC and DC analog signals.
- RoHS compliant

■ Application Examples

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



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

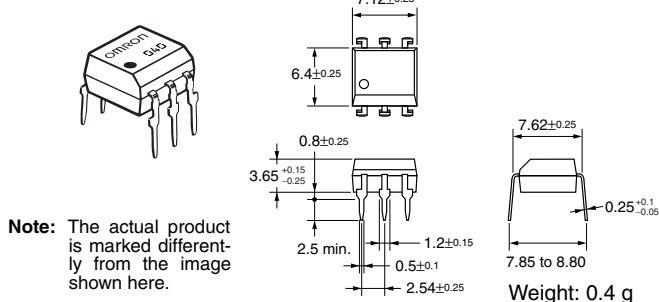
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NC	PCB terminals	350 VAC	G3VM-353B	50	---
	Surface-mounting terminals		G3VM-353E		
			G3VM-353E(TR)	---	1,500

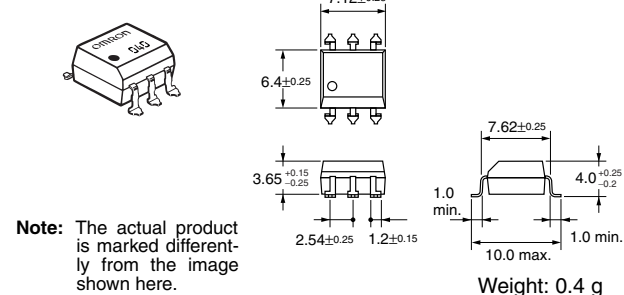
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-353B

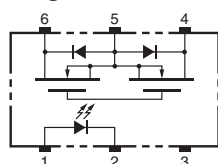


G3VM-353E

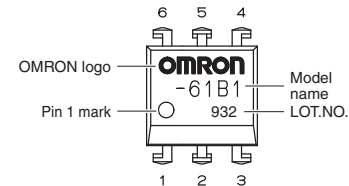
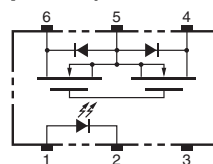


■ Terminal Arrangement/Internal Connections (Top View)

G3VM-353B



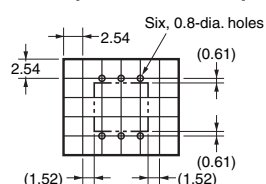
G3VM-353E



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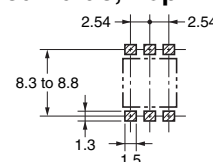
■ PCB Dimensions (Bottom View)

G3VM-353B



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

G3VM-353E

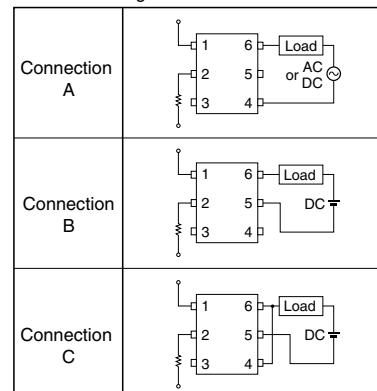


Absolute Maximum Ratings (Ta = 25°C)

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	Δ I _F /°C	− 0.5	mA/°C	T _a ≥ 25°C	
	LED reverse voltage	V _R	5	V		
	Connection temperature	T _j	125	°C		
Output	Load voltage (AC peak/DC)		V _{OFF}	350	V	
	Continuous load current (AC peak/DC)	Connection A	I _O	150	mA	
		Connection B		150		
		Connection C		300		
	ON current reduction rate	Connection A	Δ I _{ON} /°C	− 1.5	mA/°C	T _a ≥ 25°C
		Connection B		− 1.5		
		Connection C		− 3.0		
	Connection temperature		T _j	125	°C	
Dielectric strength between input and output (See note 1.)		V _{I-O}	2,500	V _{rms}	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.

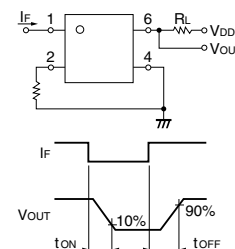
Connection Diagram



Electrical Characteristics (Ta = 25°C)

Item			Symbol	Mini- mum	Typical	Maxi- mum	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	25	Ω	I _O = 150 mA
		Connection B		---	8	14	Ω	I _O = 150 mA
		Connection C		---	4	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 terminals A Connection		C _{OFF}	---	85	---	pF	V = 0, f = 1MHz, I _F = 5 mA
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 VDC, R _{oh} ≤ 60%
Turn-ON time			t _{ON}	---	0.1	1.0	ms	I _F = 5 mA, R _L = 200 Ω, V _{DD} = 20 V (See note 2.)
Turn-OFF time			t _{OFF}	---	1.0	3.0	ms	

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



Recommended Operating Conditions

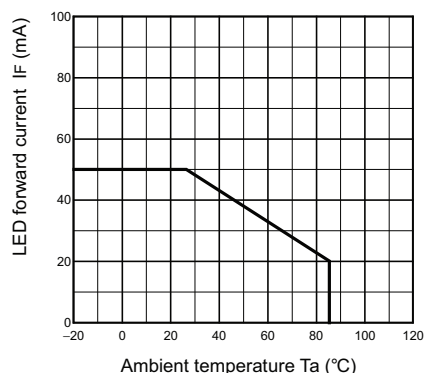
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}	---	---	280	V
Operating LED forward current	I_F	5	---	25	mA
Continuous load current (AC peak/DC)	I_O	---	---	150	mA
Operating temperature	T_a	- 20	---	65	°C

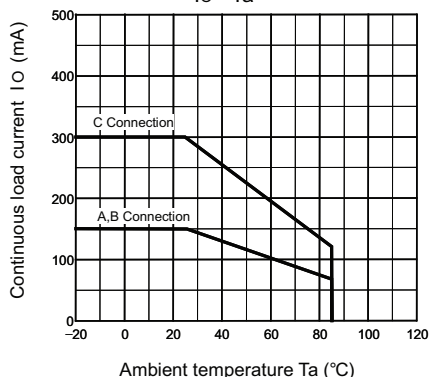
Engineering Data

G3VM-353B/E

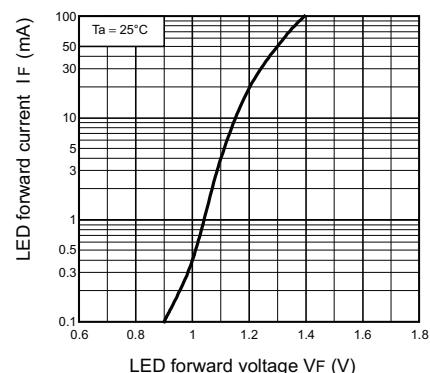
LED forward current vs.
Ambient temperature
 $I_F - T_a$



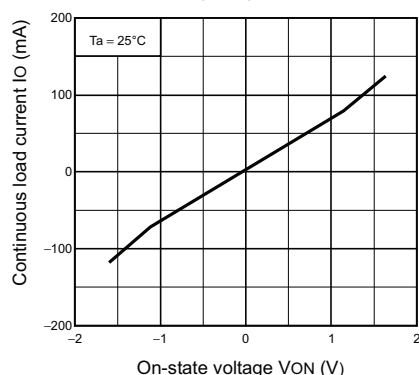
Continuous load current vs.
Ambient temperature
 $I_O - T_a$



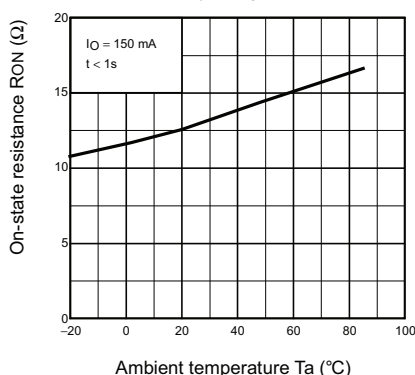
LED forward current vs.
LED forward voltage
 $I_F - V_F$



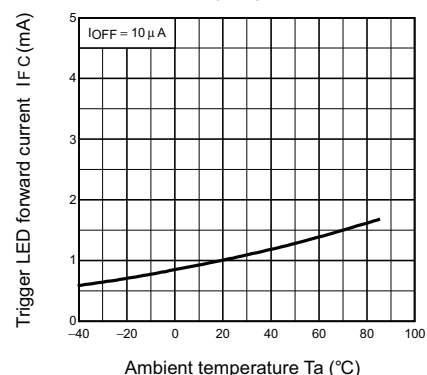
Continuous load current vs.
On-state voltage
 $I_O - V_{ON}$



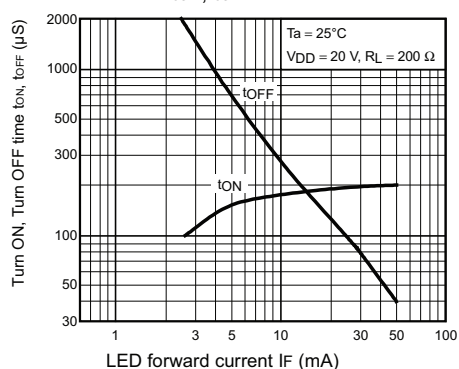
On-state resistance vs.
Ambient temperature
 $R_{ON} - T_a$



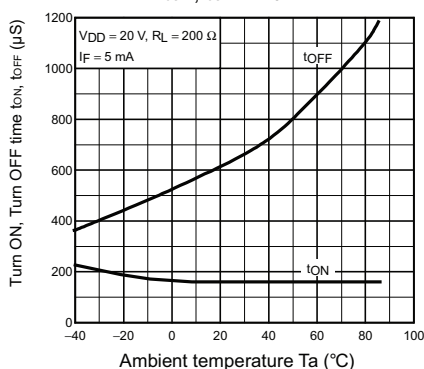
Trigger LED forward current vs.
Ambient temperature
 $I_{FC} - T_a$



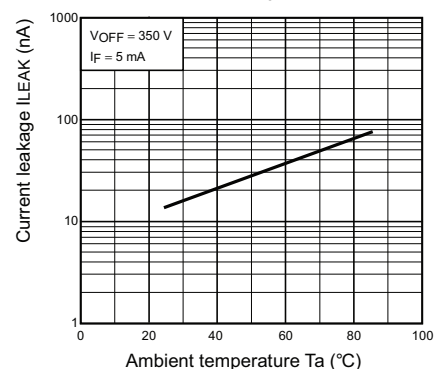
Turn ON, Turn OFF time vs.
LED forward current
 $t_{ON}, t_{OFF} - I_F$



Turn ON, Turn OFF time vs.
Ambient temperature
 $t_{ON}, t_{OFF} - T_a$



Current leakage vs.
Ambient temperature
 $I_{LEAK} - T_a$



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