G3VM−353B/E
MOS FET Relays

DIP 6-pin package, Analog-switching MOS FET Relays with SPST-NC Contact.
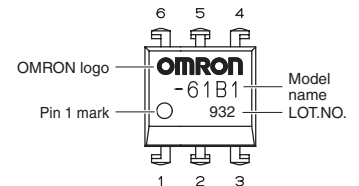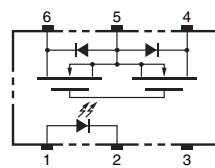
RoHS compliant

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

■ Application Examples

- **Communication equipment**
- **Security systems**
- **FA systems**
- **Test & Measurement equipment**

■ Terminal Arrangement/Internal Connections

OMRON logo
Pin 1 mark
−61B1
932
Model name
LOT.NO.

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

■ List of Models

| Package type	Contact form	Terminals	Load voltage (peak value) ✱	Model	Minimum package quantity	
					Number per tube	Number per tape and reel
DIP6	1b (SPST-NC)	PCB Terminals	350 V	**G3VM-353B**	50	-
		Surface-mounting Terminals		**G3VM-353E**		
				G3VM-353E (TR)	-	1,500

✱ The AC peak and DC value are given for the load voltage.

■ 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	Load voltage (AC peak/DC)	V_{OFF}	350	V	
	Continuous load current — Connection A	I_O	150	mA	Connection A: AC peak/DC
	Continuous load current — Connection B		150		Connection B and C: DC
	Continuous load current — Connection C		300		
	ON current reduction rate — Connection A	$\Delta I_O/°C$	−1.5	mA/°C	Ta ≥ 25°C
	ON current reduction rate — Connection B		−1.5		
	ON current reduction rate — Connection C		−3.0		
	Connection temperature	T_J	125	°C	
	Dielectric strength between I/O (See note 1.)	V_{I-O}	2500	Vrms	AC for 1 min
	Ambient operating temperature	Ta	−40 to +85	°C	With no icing or condensation
	Ambient storage temperature	Tstg	−55 to +125	°C	With no icing or condensation
	Soldering temperature	-	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

Connection A	
Connection B	
Connection C	
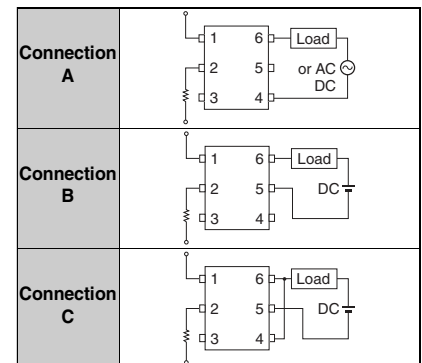
■ Electrical Characteristics (Ta = 25°C)

	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_{FC}	-	1	3	mA	I_{OFF} = 10 μA
Output	Maximum resistance with output ON — Connection A	R_{ON}	-	15	25	Ω	I_O = 150 mA
	Maximum resistance with output ON — Connection B		-	8	14	Ω	I_O = 150 mA
	Maximum resistance with output ON — 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	C_{OFF}	-	85	-	pF	V = 0, f = 1 MHz, I_F = 5 mA
	Capacity between I/O terminals	C_{I-O}	-	0.8	-	pF	f = 1 MHz, V_S = 0 V
	Insulation resistance between I/O terminals	R_{I-O}	1000	-	-	MΩ	V_{I-O} = 500 VDC, RoH ≤ 60%
	Turn-ON time	t_{ON}	-	0.1	1.0	ms	I_F = 5 mA, R_L = 200 Ω,
	Turn-OFF time	t_{OFF}	-	1.0	3.0	ms	V_{DD} = 20 V (See note 2.)

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


1

G3VM−353B/E
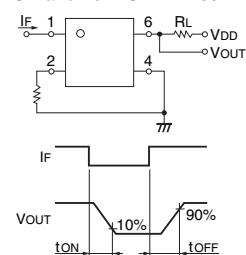
■ Recommended Operating Conditions

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
Ambient operating temperature	Ta	−20	-	65	°C

■ Engineering Data

LED forward current vs. Ambient temperature

I_F - Ta

Continuous load current vs. Ambient temperature

I_O - Ta

Connection C

Connection A and B
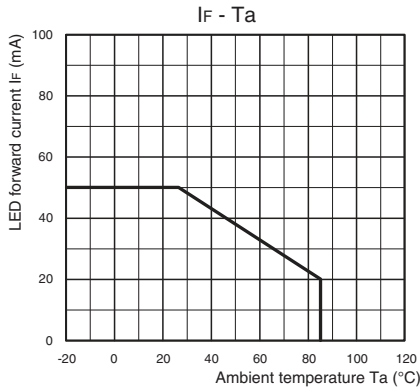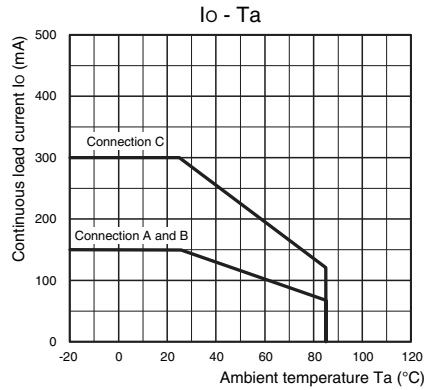
LED forward current vs. LED forward voltage

I_F - V_F

Ta = 25°C
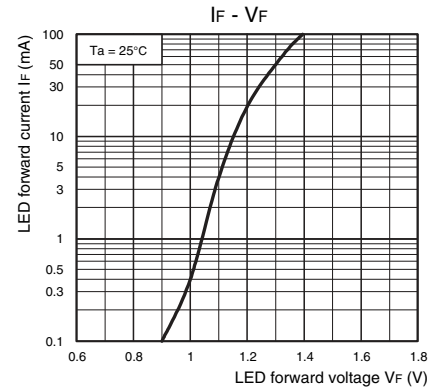
Continuous load current vs. On-state voltage

I_O - V_{ON}

Ta = 25°C
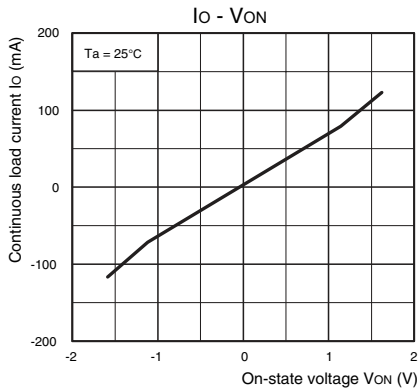
On-state resistance vs. Ambient temperature

R_{ON} - Ta

I_O = 150 mA
t < 1 s

Trigger LED forward current vs. Ambient temperature

I_{FC} - Ta

I_{OFF} = 10 μA
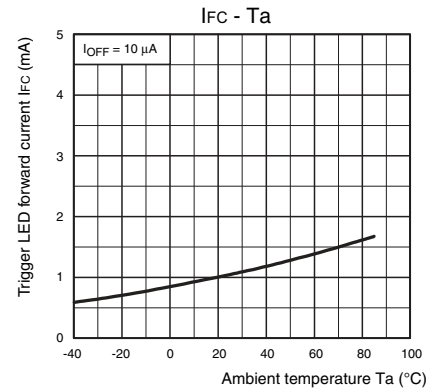
Turn ON, Turn OFF time vs. LED forward current

t_{ON}, t_{OFF} - I_F

Ta = 25°C
V_{DD} = 20 V, R_L = 200 Ω

t_{OFF}

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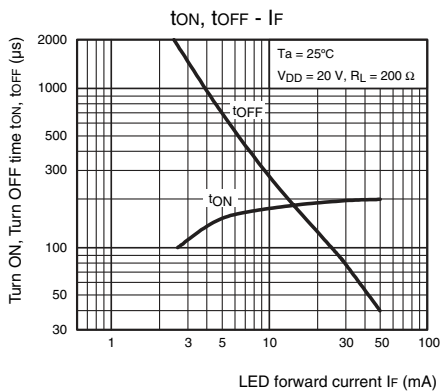
Turn ON, Turn OFF time vs. Ambient temperature

t_{ON}, t_{OFF} - Ta

V_{DD} = 20 V, R_L = 200 Ω
I_F = 5 mA

t_{OFF}

t_{ON}
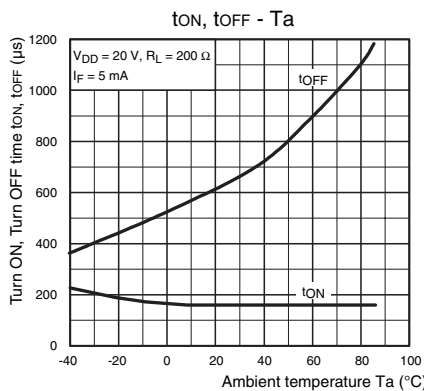
Current leakage vs. Ambient temperature

I_{LEAK} - Ta

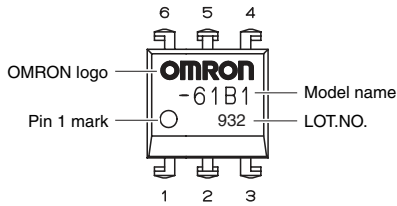V_{OFF} = 350 V
I_F = 5 mA
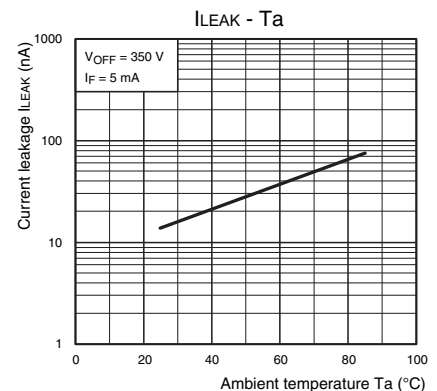
■ Safety Precautions

• Refer to **"Common Precautions"** for all G3VM models.

■ Appearance

DIP (Dual Inline Package)
DIP6

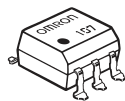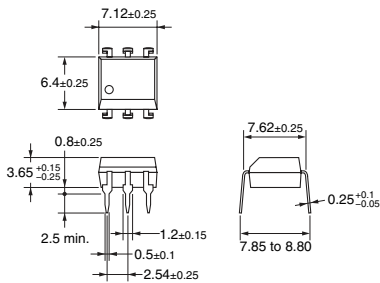Note: The actual product is marked differently from the image shown here.
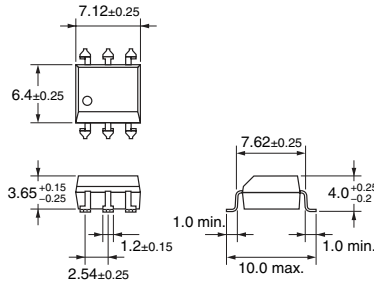
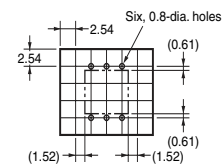## ■ Dimensions

(Unit: mm)

PCB Terminals
Weight: 0.4 g

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

Surface-mounting Terminals
Weight: 0.4 g

PCB Dimensions (BOTTOM VIEW)

Six, 0.8-dia. holes

Actual Mounting Pad Dimensions
(Recommended Value, TOP VIEW)

Note: Do not use this document to operate the Unit.

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