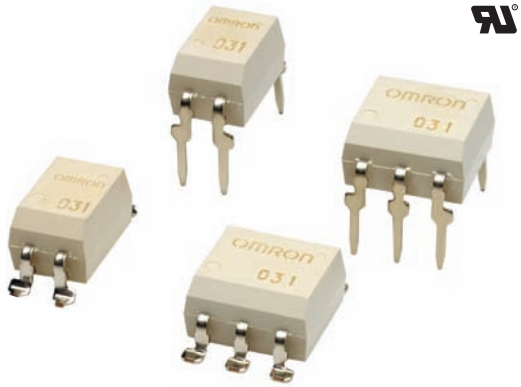
G3VM-353A/D/B/E

MOS FET Relays DIP, General-purpose Type

General-purpose MOS FET Relays in DIP packages

- **Package: DIP 4-pin or DIP 6-pin**
- **Contact form: 1b (SPST-NC)**
- **Load voltage: 350 V**



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

■Application Examples

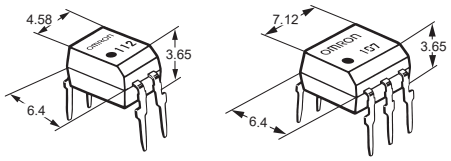
- **Communication equipment**
- **Security equipment**
- **Power circuit**
- **Test & Measurement equipment**
- **Industrial equipment**

■Package

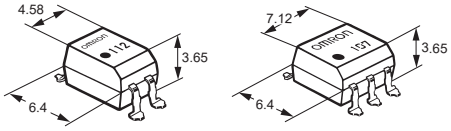
(Unit : mm, Average)

DIP 4-pin DIP 6-pin

PCB Terminals



Surface-mounting Terminals



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

■Model Number Legend

G3VM-□□□□
1 2 3 4

1. Load Voltage
35 : 350 V

2. Contact form
3 : 1b (SPST-NC)

3. Package
A : DIP 4-pin with PCB terminals
B : DIP 6-pin with PCB terminals
D : DIP 4-pin with surface-mounting terminals
E : DIP 6-pin with surface-mounting terminals

4. Other informations
When specifications overlap, serial code is added recorded order.

■Ordering Information

Package	Contact form	Load voltage (peak value) ✻	Continuous load current (peak value) ✻	Stick packaging			Tape packaging	
				Model		Minimum package quantity	Model	Minimum package quantity
				PCB Terminals	Surface-mounting Terminals		Surface-mounting Terminals	
DIP4	1b (SPST-NC)	350 V	150 mA	**G3VM-353A**	**G3VM-353D**	1 pcs.	**G3VM-353D(TR)**	1,500 pcs.

Package	Contact form	Load voltage (peak value) ✻	Continuous load current (peak value) ✻		Stick packaging			Tape packaging	
					Model		Minimum package quantity	Model	Minimum package quantity
			Connection A, B	Connection C	PCB Terminals	Surface-mounting Terminals		Surface-mounting Terminals	
DIP6	1b (SPST-NC)	350 V	150 mA	300 mA	**G3VM-353B**	**G3VM-353E**	50 pcs.	**G3VM-353E(TR)**	1,500 pcs.

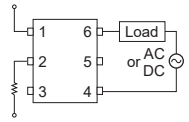
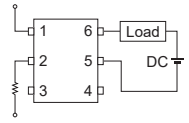
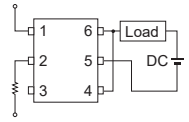
✻ The AC peak and DC value are given for the load voltage and continuous load current.
Note: To order tape packaging for Relays with surface-mounting terminals, add “(TR)” to the end of the model number.

■Absolute Maximum Ratings (Ta = 25°C)

Item			Symbol	G3VM-353A G3VM-353D	G3VM-353B G3VM-353E	Unit	Measurement conditions
Input	LED forward current		I_F	50		mA	
	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	Load voltage (AC peak/DC)		V_{OFF}	350		V	
	Continuous load current (AC peak/DC)	Connection A	I_O	150		mA	Connection A: AC peak/DC Connection B and C: DC
		Connection B		–	150		
		Connection C			300		
	ON current reduction rate	Connection A	ΔI_O/°C	-1.5		mA/°C	Ta ≥ 25°C
		Connection B		–	-1.5		
		Connection C			-3		
	Pulse ON current		Iop	0.45		A	t=100 ms, Duty=1/10
	Connection temperature		T_J	125		°C	
Dielectric strength between I/O ✻			V_{I-O}	2,500		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	
Soldering temperature			–	260		°C	10 s

✻ 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 (DIP 6-pin Relays)

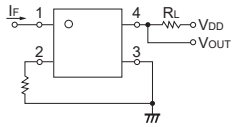
Connection A	
Connection B	
Connection C	

■Electrical Characteristics (Ta = 25°C)

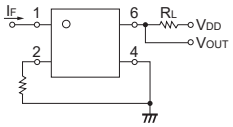
Item		Symbol			G3VM-353A G3VM-353D	G3VM-353B G3VM-353E	Unit	Measurement conditions
Input	LED forward voltage	V_F	Minimum		1.0		V	I_F=10 mA
			Typical		1.15			
			Maximum		1.3			
	Reverse current	I_R	Maximum		10		μA	V_R=5 V
	Capacitance between terminals	C_T	Typical		30		pF	V=0 V, f=1 MHz
	Trigger LED forward current	I_{FC}	Typical		1		mA	I_{OFF}=10 μA
			Maximum		3			
	Release LED forward current	I_{FT}	Minimum		0.1		mA	I_O=150 mA
Output	Maximum resistance with output ON	R_{ON}	Typical	Connection A	15		Ω	I_O=Continuous load current ratings
				Connection B	–	8		
				Connection C		4		
			Maximum	Connection A	25			
				Connection B	–	14		
				Connection C		7		
	Current leakage when the relay is open	I_{LEAK}	Maximum		1		μA	I_F=5mA, V_{OFF}=350 V
	Capacitance between terminals	C_{OFF}	Typical		85		pF	V=0, f=1 MHz
Capacitance between I/O terminals		C_{I-O}	Typical		0.8		pF	V_S=0 V, f=1 MHz
Insulation resistance between I/O terminals		R_{I-O}	Minimum		1,000		MΩ	V_{I-O}=500 VDC, RoH≤60%
			Typical		10^8			
Turn-ON time		t_{ON}	Typical		0.1		ms	I_F=5 mA, R_L=200 Ω, V_{DD}=20 V ✻1
			Maximum		1			
Turn-OFF time		t_{OFF}	Typical		1			
			Maximum		3			

✻1. Turn-ON and Turn-OFF Times

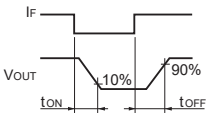
DIP 4-pin



DIP 6-pin



NC contact



■Recommended Operating Conditions

For usage with high reliability, Recommended Operation Conditions is a measure that takes into account the derating of Absolute Maximum Ratings and Electrical Characteristics.
Each item on this list is an independent condition, so it is not simultaneously satisfy several conditions.

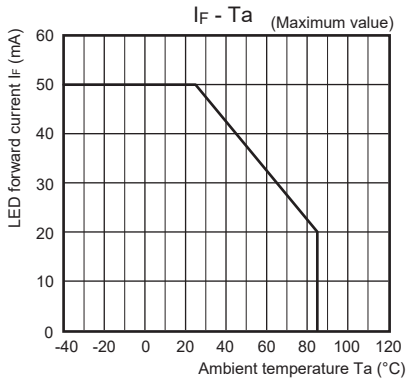
Item	Symbol		G3VM-353A G3VM-353D	G3VM-353B G3VM-353E	Unit
Load voltage (AC peak/DC)	V_{DD}	Maximum	280		V
Operating LED forward current	I_F	Minimum	5		mA
		Typical	–		
		Maximum	25		
Continuous load current (AC peak/DC)	I_O	Maximum	150		
Ambient operating temperature	Ta	Minimum	-20		°C
		Maximum	65		

■Spacing and Insulation

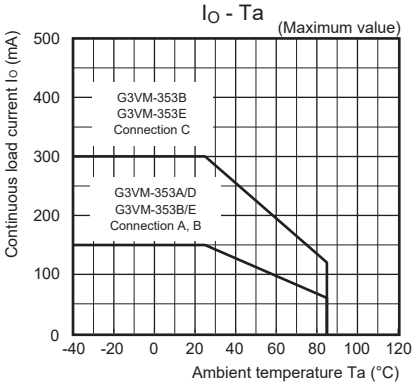
Item	Minimum	Unit
Creepage distances	7.0	mm
Clearance distances	7.0	
Internal isolation thickness	0.4	

■Engineering Data

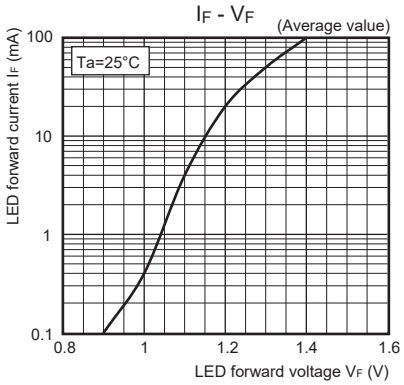
●LED forward current vs. Ambient temperature



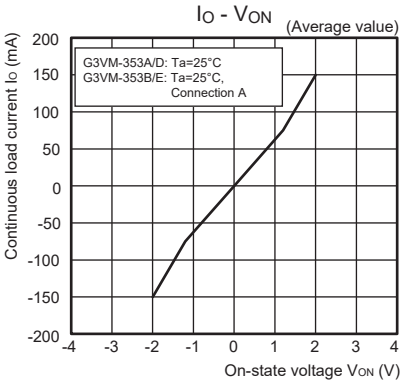
●Continuous load current vs. Ambient temperature



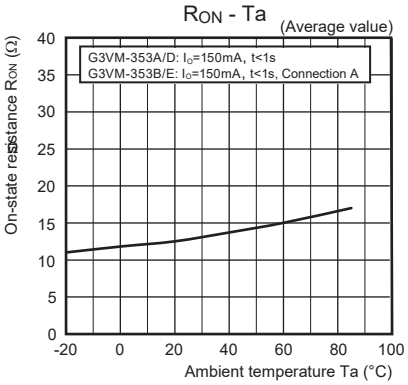
●LED forward current vs. LED forward voltage



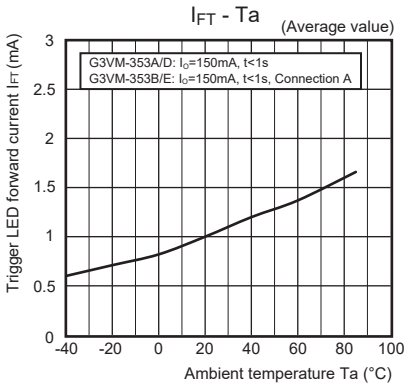
●Continuous load current vs. On-state voltage



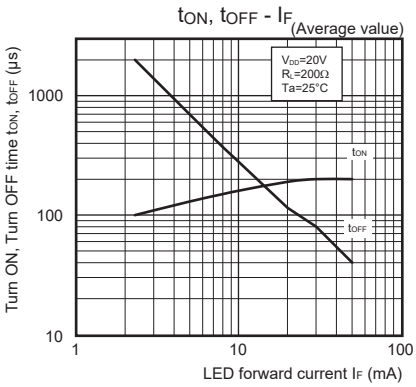
●On-state resistance vs. Ambient temperature



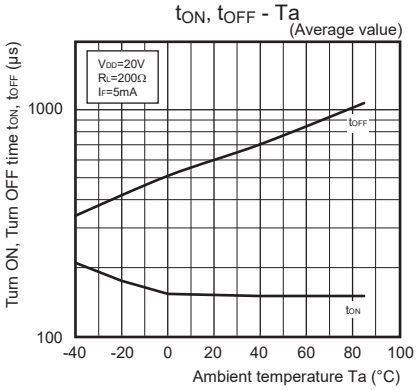
●Trigger LED forward current vs. Ambient temperature



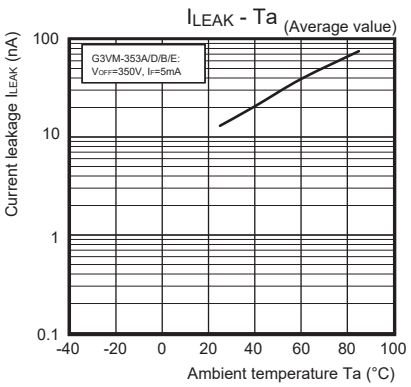
●Turn ON, Turn OFF time vs. LED forward current



●Turn ON, Turn OFF time vs. Ambient temperature



●Current leakage vs. Ambient temperature

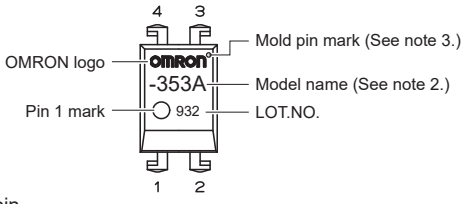


■Appearance / Terminal Arrangement / Internal Connections

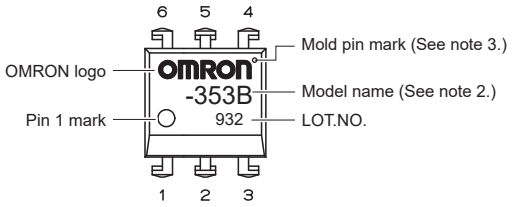
●Appearance

DIP (Dual Inline Package)

DIP 4-pin

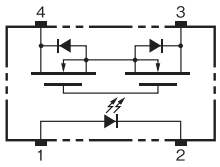


DIP 6-pin

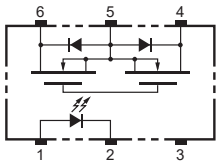


●Terminal Arrangement/Internal Connections (Top View)

G3VM-353A/353D



G3VM-353B/353E



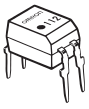
Note: 1. The actual product is marked differently from the image shown here.
Note: 2. "G3VM" does not appear in the model number on the Relay.
Note: 3. The indentation in the corner diagonally opposite from the pin 1 mark is from a pin on the mold.

■Dimensions

CAD Data marked products, 2D drawings and 3D CAD models are available.
For CAD information, please visit our website, which is noted on the last page.

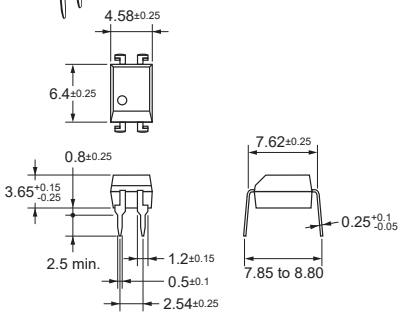
(Unit: mm)

DIP4



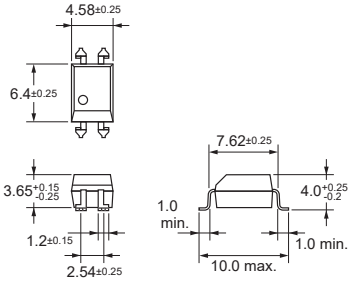
PCB Terminals

Weight: 0.25 g

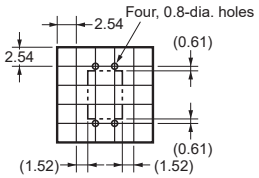


Surface-mounting Terminals

Weight: 0.25 g

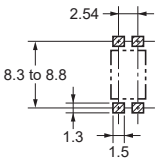


PCB Dimensions (BOTTOM VIEW)



Actual Mounting Pad Dimensions

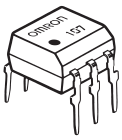
(Recommended Value, Top View)



CAD Data

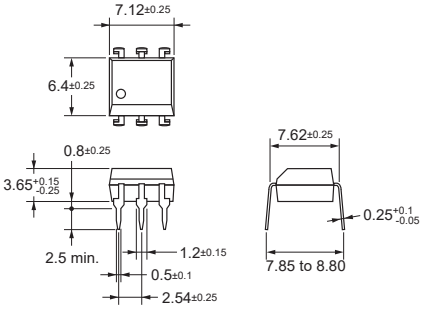
Note: The actual product is marked differently from the image shown here.

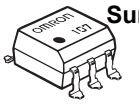
DIP6



PCB Terminals

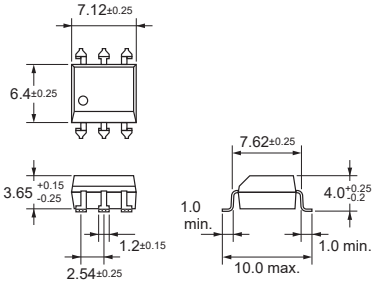
Weight: 0.4 g



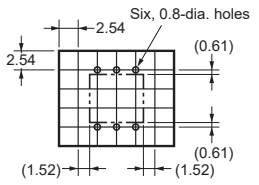


Surface-mounting Terminals

Weight: 0.4 g

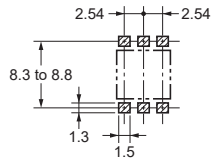


PCB Dimensions (BOTTOM VIEW)



Actual Mounting Pad Dimensions

(Recommended Value, Top View)



CAD Data

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

■Approved Standards

UL recognized

Model				Approved Standards	Contact form	File No.
G3VM-353A	G3VM-353D	G3VM-353B	G3VM-353E	UL (recognized)	1b (SPST-NC)	E80555

■Safety Precautions

Refer to the *Common Precautions for All MOS FET Relays* for precautions that apply to all MOS FET Relays.

Please check each region's Terms & Conditions by region website.

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0924 (0816)