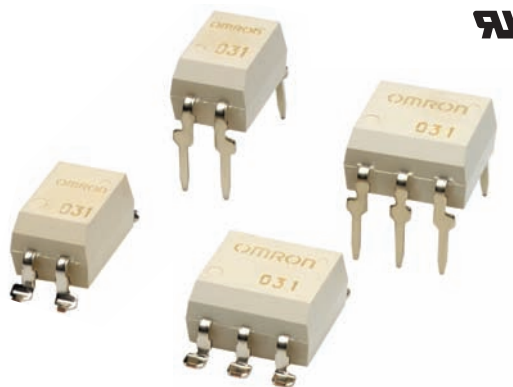


# G3VM-353A/D/B/E

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

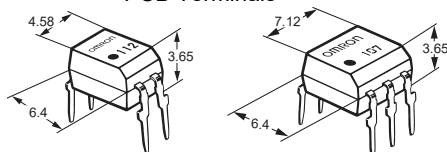
### Package

(Unit : mm, Average)

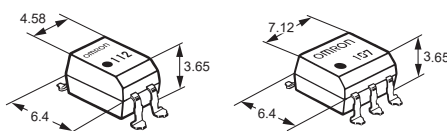
DIP 4-pin

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	
				PCB Terminals	Surface-mounting Terminals		Surface-mounting Terminals	Minimum package quantity
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	
			Connection A, B	Connection C	Model		Minimum package quantity	Model	
					PCB Terminals	Surface-mounting Terminals		Surface-mounting Terminals	Minimum package quantity
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.

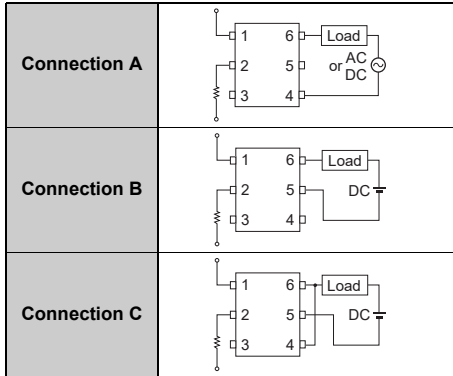
Note: To order tape packaging for Relays with surface-mounting terminals, add "(TR)" to the end of the model number.

### Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	G3VM-353A G3VM-353D	G3VM-353B G3VM-353E	Unit	Measurement conditions
Input	LED forward current	IF	50		mA	
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5		mA/°C	Ta ≥ 25°C
	LED reverse voltage	VR	5		V	
Connection temperature		TJ	125		°C	
Load voltage (AC peak/DC)		V <sub>OFF</sub>	350		V	
Output	Continuous load current (AC peak/DC)	Connection A	150		mA	Connection A: AC peak/DC Connection B and C: DC
		Connection B	150			
		Connection C	300			
	ON current reduction rate	Connection A	-1.5		mA/°C	Ta ≥ 25°C
		Connection B	-1.5			
		Connection C	-3			
Pulse ON current		I <sub>op</sub>	0.45		A	t=100 ms, Duty=1/10
Connection temperature		TJ	125		°C	
Dielectric strength between I/O *		V <sub>I-O</sub>	2,500		V <sub>rms</sub>	AC for 1 min
Ambient operating temperature		Ta	-40 to +85		°C	With no icing or condensation
Ambient storage temperature		T <sub>stg</sub>	-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)

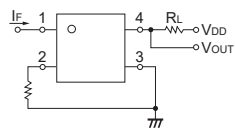


## Electrical Characteristics (Ta = 25°C)

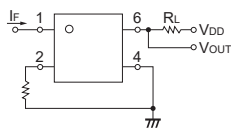
Item		Symbol		G3VM-353A G3VM-353D	G3VM-353B G3VM-353E	Unit	Measurement conditions
Input	LED forward voltage	V <sub>F</sub>	Minimum	1.0		V	I <sub>F</sub> =10 mA
			Typical	1.15			
			Maximum	1.3			
	Reverse current	I <sub>R</sub>	Maximum	10		μA	V <sub>R</sub> =5 V
	Capacitance between terminals	C <sub>T</sub>	Typical	30		pF	V=0 V, f=1 MHz
Trigger LED forward current	I <sub>FC</sub>	Typical	1		mA	I <sub>OFF</sub> =10 μA	
		Maximum	3				
Release LED forward current	I <sub>FT</sub>	Minimum	0.1		mA	I <sub>o</sub> =150 mA	
Output	Maximum resistance with output ON	R <sub>ON</sub>	Typical	Connection A	15	Ω	I <sub>o</sub> =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 <sub>LEAK</sub>	Maximum	1		μA	I <sub>F</sub> =5mA, V <sub>OFF</sub> =350 V	
Capacitance between terminals	C <sub>OFF</sub>	Typical	85		pF	V=0, f=1 MHz	
Capacitance between I/O terminals	C <sub>I-O</sub>	Typical	0.8		pF	V <sub>S</sub> =0 V, f=1 MHz	
Insulation resistance between I/O terminals	R <sub>I-O</sub>	Minimum	1,000		MΩ	V <sub>I-O</sub> =500 VDC, R <sub>oH</sub> ≤60%	
		Typical	10 <sup>8</sup>				
Turn-ON time	t <sub>ON</sub>	Typical	0.1		ms	I <sub>F</sub> =5 mA, R <sub>L</sub> =200 Ω, V <sub>DD</sub> =20 V *1	
		Maximum	1				
Turn-OFF time	t <sub>OFF</sub>	Typical	1		ms	I <sub>F</sub> =5 mA, R <sub>L</sub> =200 Ω, V <sub>DD</sub> =20 V *1	
		Maximum	3				

\*1. Turn-ON and Turn-OFF Times

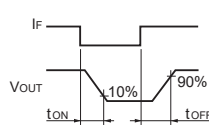
DIP 4-pin



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.

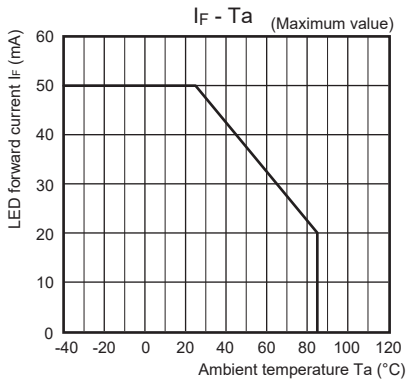
Item		Symbol		G3VM-353A G3VM-353D	G3VM-353B G3VM-353E	Unit
Load voltage (AC peak/DC)	V <sub>DD</sub>	Maximum	280			V
Operating LED forward current	I <sub>F</sub>	Minimum	5		mA	
		Typical	-			
		Maximum	25			
Continuous load current (AC peak/DC)	I <sub>o</sub>	Maximum	150			
Ambient operating temperature	T <sub>a</sub>	Minimum	-20		°C	
		Maximum	65			

## Spacing and Insulation

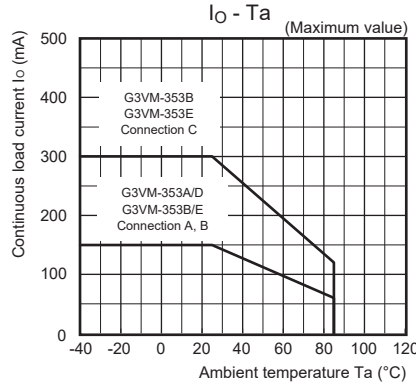
Item	Minimum	Unit
Creepage distances	7.0	mm
Clearance distances	7.0	
Internal isolation thickness	0.4	

## Engineering Data

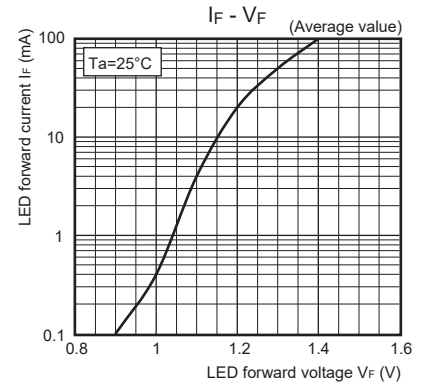
● LED forward current vs. Ambient temperature



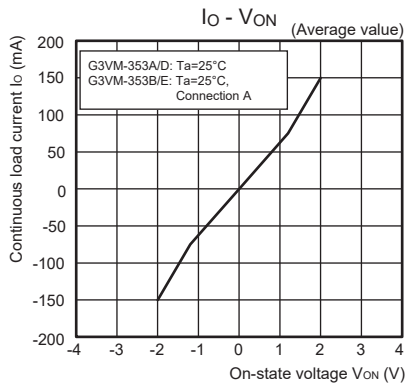
● Continuous load current vs. Ambient temperature



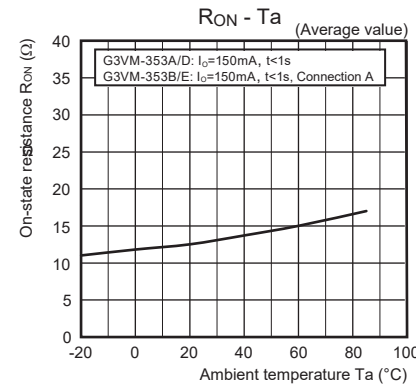
● LED forward current vs. LED forward voltage



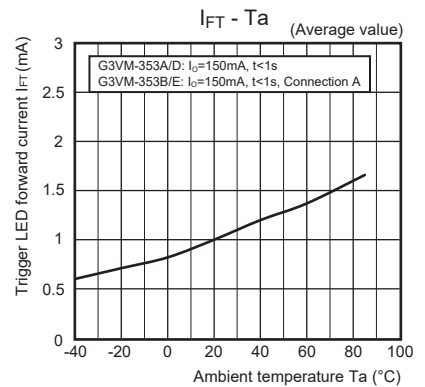
● Continuous load current vs. On-state voltage



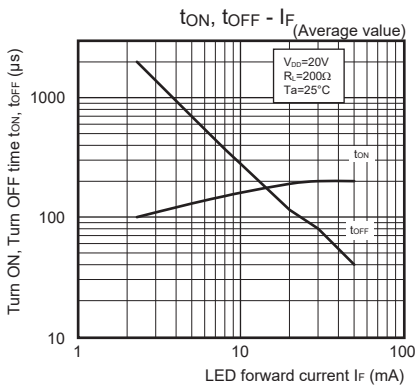
● On-state resistance vs. Ambient temperature



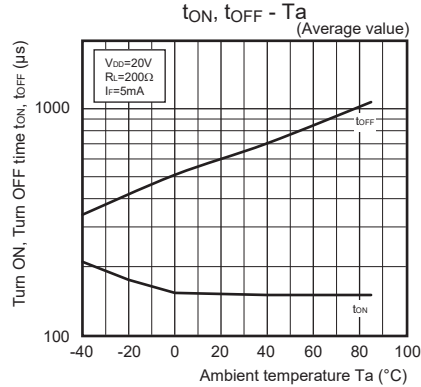
● Trigger LED forward current vs. Ambient temperature



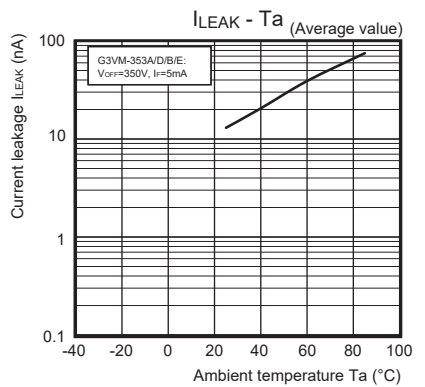
● Turn ON, Turn OFF time vs. LED forward current



● Turn ON, Turn OFF time vs. Ambient temperature



● Current leakage vs. Ambient temperature

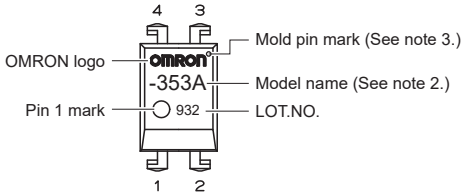


## Appearance / Terminal Arrangement / Internal Connections

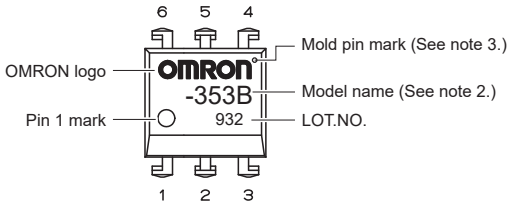
### ● Appearance

#### DIP (Dual Inline Package)

DIP 4-pin

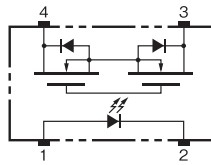


DIP 6-pin

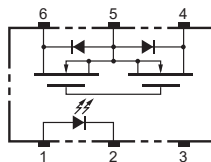


### ● Terminal Arrangement/Internal Connections (Top View)

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.

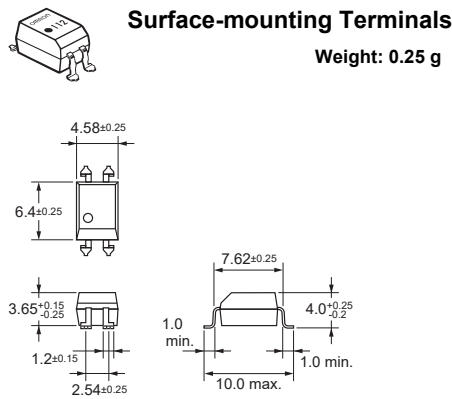
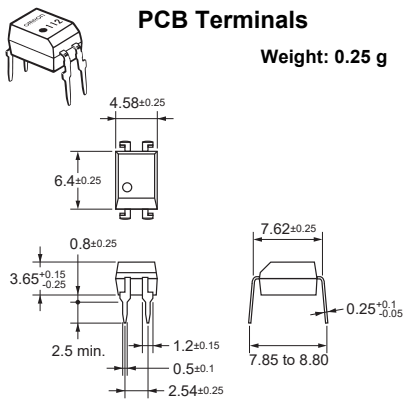
**Note:** 3. The indentation in the corner diagonally opposite from the pin 1 mark is from a pin on the mold.

### Dimensions

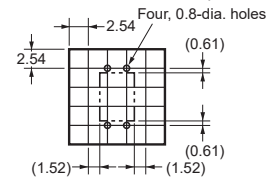
**CAD Data** marked products, 2D drawings and 3D CAD models are available. For CAD information, please visit our website, which is noted on the last page.

(Unit: mm)

#### DIP4

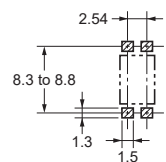


#### PCB Dimensions (BOTTOM VIEW)



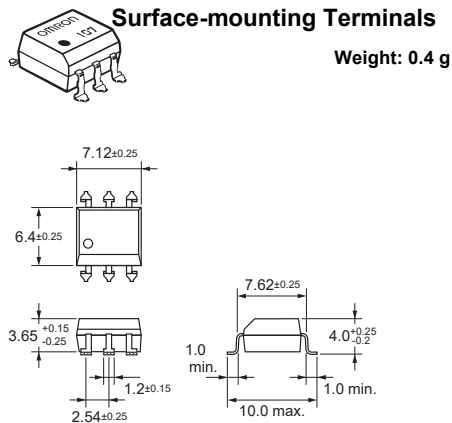
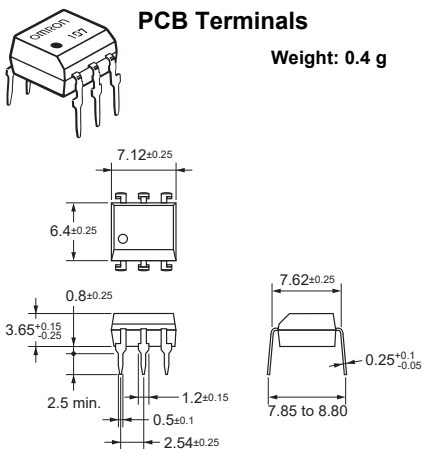
#### Actual Mounting Pad Dimensions

(Recommended Value, Top View)

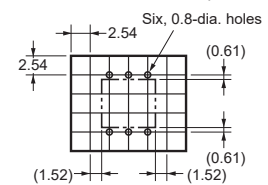


**CAD Data**

#### DIP6

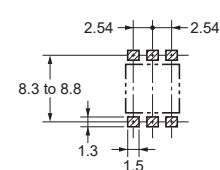


#### PCB Dimensions (BOTTOM VIEW)



#### 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.

DIP

G3VM-353A/D/B/E

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

## OMRON Corporation

Device & Module Solutions Company

### Regional Contact

#### Americas

<https://components.omron.com/us>

#### Asia-Pacific

<https://components.omron.com/ap>

#### Korea

<https://components.omron.com/kr>

#### Europe

<https://components.omron.com/eu>

#### China

<https://components.omron.com.cn>

#### Japan

<https://components.omron.com/jp>