## G3VM-352J

**MOS FET Relays** 

# Two Channels and an 8-pin SOP Package in 350-V Load Voltage Series.

- Thin Mini Flat Type and Small Outline Package MOS FET Relay with a Height of 2.1 mm, Incorporating a MOS FET Optically Coupled with an Infrared LED
- Continuous load current of 110 mA.

**RoHS** compliant



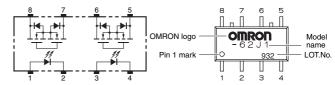
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Note: The actual product is marked differently from the image shown here.

### **■** Application Examples

- Semiconductor test equipment
- Test & Measurement equipment
- Communication equipment
- Data loggers

## ■ Terminal Arrangement/Internal Connections



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

#### **■** List of Models

Package type	Contact form	Terminals	Load voltage	Model	Minimum package quantity	
Package type	Contact form		(peak value) *	Model	Number per tube	Number per tape and reel
SOP8	2a (DPST-NO)	Surface-mounting Terminals	250.1/	G3VM-352J	50	-
			350 V	G3VM-352J (TR)	-	2,500

 $<sup>\</sup>boldsymbol{\ast}$  The AC peak and DC value are given for the load voltage.

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

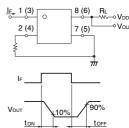
Item		Symbol	Rating Unit		Measurement conditions		
	LED forward current	lF	50	mA			
Input	LED forward current reduction rate	ΔIF/°C	-0.5	mA/°C	Ta ≥ 25°C		
	LED reverse voltage	VR	5	V			
	Connection temperature	TJ	125	ô			
Ħ	Load voltage (AC peak/DC)	Voff	350	V			
t b	Continuous load current (AC peak/DC)	lo	110	mA			
ō	ON current reduction rate	∆lo/°C	-1.1	mA/°C	Ta ≥ 25°C		
	lectric strength between (See note 1.)	V <sub>I</sub> -O	1500	Vrms	AC for 1 min		
Ambient operating temperature		Ta	-40 to +85	ô	With no icing or condensation		
Ambient storage temperature		Tstg	-55 to +125	ô	With no icing or condensation		
Sol	dering temperature	-	260	ô	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.

#### **■ Electrical Characteristics** (Ta = 25°C)

Item		Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions
Input	LED forward voltage	VF	1.0	1.15	1.3	V	IF = 10 mA
	Reverse current	lr	-	-	10	μА	VR = 5 V
	Capacity between terminals	Ст	-	30	-	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFT	-	1	3	mΑ	lo = 110 mA
	Maximum resistance	Ron	-	25	35	Ω	IF = 5 mA, Io = 110 mA, t < 1 s
Output	with output ON	HON	-	35	50	Ω	IF = 5 mA, Io = 110 mA
	Current leakage when the relay is open	ILEAK	-	-	1.0	μΑ	Voff = 350 V
•	Capacity between terminals	Coff	ı	30	-	pF	V = 0, f = 1 MHz
Cap	Capacity between I/O terminals		-	0.8	-	pF	f = 1 MHz, Vs = 0 V
Insulation resistance between I/O terminals		Rı-o	1000	ı	-	$M\Omega$	$V_{I-O} = 500 \text{ VDC}, \text{ RoH} \le 60 \%$
Turn-ON time		ton	1	0.3	1	ms	IF = 5 mA, RL = 200 $\Omega$ ,
Turn-OFF time		toff	ı	0.1	1	ms	V <sub>DD</sub> = 20 V (See note 2.)

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



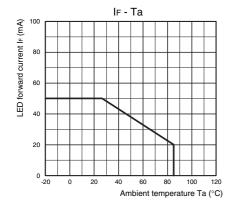
### ■ Recommended Operating Conditions

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

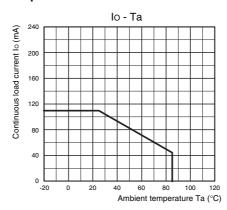
Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V <sub>DD</sub>	-	-	280	V
Operating LED forward current	lF	5	10	25	mA
Continuous load current (AC peak/DC)	lo	-	-	100	mA
Ambient operating temperature	Та	-20	-	65	°C

### **■** Engineering Data

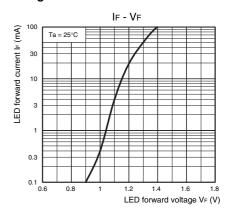
### LED forward current vs. Ambient temperature



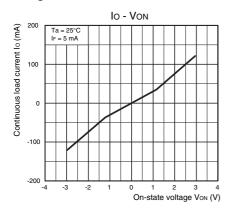
### Continuous load current vs. Ambient temperature



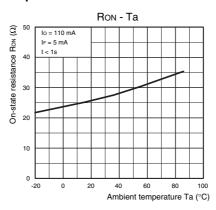
### LED forward current vs. LED forward voltage



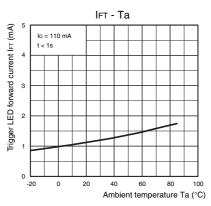
### Continuous load current vs. On-state voltage



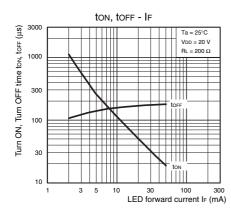
On-state resistance vs. Ambient temperature



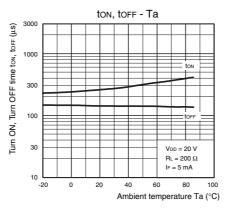
Trigger LED forward current vs. Ambient temperature



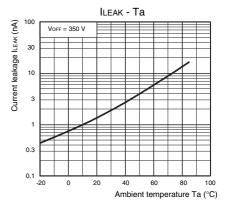
Turn ON, Turn OFF time vs. LED forward current



Turn ON, Turn OFF time vs. Ambient temperature



Current leakage vs. Ambient temperature



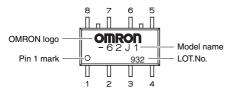
#### **■** Safety Precautions

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

### **■** Appearance

#### SOP (Small Outline Package)

SOP8



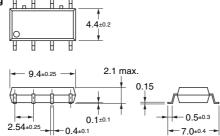
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■ SOP8 (Unit: mm)



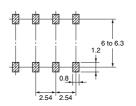
#### **Surface-mounting Terminals**

Weight: 0.2 g



### Actual Mounting Pad Dimensions

(Recommended Value, TOP VIEW)



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

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

Contact: www.omron.com/ecb

Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.