

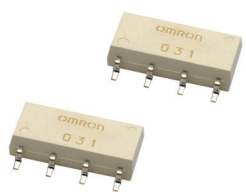
Introduction
General purpose
High-level voltage
Multi-contact pair
(2a, 2b and 1a1b)
High-current and
high-ON resistance
Small and high-
ON resistance
High dielectric
strength
Current-limiting
Low-voltage-resistance
and low-ON resistance
Small and High-
ON resistance
Certified Models with
Standard terminals
DIP
SOP
SSOP
USOP
VSON
G3VM-□□

G3VM-□□J□

MOS FET Relays SOP 8-pin, Multi-contact-pair Type

MOS FET Relays in SOP 8-pin packages with multiple contact pairs for a wide range of circuits

- Contact form: 2a (DPST-NO), 2b (DPST-NC), 1a1b (SPST-NO/SPST-NC)
- Load voltage: 60 V, 200 V, 350 V, or 400 V



RoHS Compliant

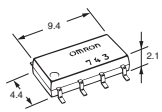
Note: The actual product is marked differently from the image shown here.

Application Examples

- Semiconductor test equipment
- Security equipment
- Amusement equipment
- Test & Measurement equipment
- Industrial equipment
- Power circuit
- Communication equipment

Package (Unit : mm, Average)

SOP 8-pin



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

Model Number Legend

G3VM-□□□□□
1 2 3 4 5

- 1. Load Voltage**
6 : 60 V
20 : 20 V
35 : 350 V
40 : 400 V
- 2. Contact form**
2 : 2a (DPST-NO)
4 : 2b (DPST-NC)
5 : 1a1b (SPST-NO/SPST-NC)
- 3. Package**
J : SOP 8-pin
- 4. Additional functions**
R: Low ON resistance
- 5. Other informations**
When specifications overlap, serial code is added in the recorded order.

Ordering Information

Package	Contact form	Terminals	Load voltage (peak value) *	Continuous load current (peak value) *	Stick packaging		Tape packaging	
					Model	Minimum package quantity	Model	Minimum package quantity
SOP8	2a (DPST-NO)	Surface-mounting Terminals	60 V	400 mA	G3VM-62J1	50 pcs.	G3VM-62J1(TR)	2,500 pcs.
			200 V	200 mA	G3VM-202J1		G3VM-202J1(TR)	
	1a1b (SPST-NO/SPST-NC)		350 V	120 mA	G3VM-355JR		G3VM-355JR(TR)	
	2a (DPST-NO)			110 mA	G3VM-352J		G3VM-352J(TR)	
	2b (DPST-NC)			120 mA	G3VM-354J		G3VM-354J(TR)	
	2a (DPST-NO)		400 V		G3VM-402J		G3VM-402J(TR)	

* 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.

Introduction

General purpose

High-load voltage

Multi-output (2x 20 and 10)

High-current and low-ON resistance

Small and high-dielectric strength

High-dielectric strength

Current-limiting

Low-ON resistance and low-ON resistance

Small and high-load voltage

Certified models with Standards certification

DIP

SOP

SSOP

USOP

VSON

G3VM-□□

G3VM-□□J□

MOS FET Relays

■Absolute Maximum Ratings (Ta = 25°C)

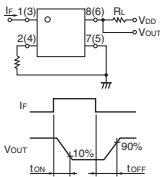
Item		Symbol	G3VM-62J1	G3VM-202J1	G3VM-355JR	G3VM-352J	G3VM-354J	G3VM-402J	Unit	Measurement conditions
Input	LED forward current	IF	50						mA	
	LED forward current reduction rate	ΔIf/°C	-0.5						mA/°C	Ta ≥ 25°C
	LED reverse voltage	Vr	5						V	
	Connection temperature	Tj	125						°C	
Output	Load voltage (AC peak/DC)	VorF	60	200	350			400	V	
	Continuous load current (AC peak/DC)	Io	400	200	120	110	120		mA	
	ON current reduction rate	ΔIo/°C	-4.0	-2.0	-1.2	-1.1	-1.2		mA/°C	Ta ≥ 25°C
	Pulse ON current	Iop	1,200	600	360	330	360		mA	t=100 ms, Duty=1/10
	Connection temperature	Tj	125						°C	
	Dielectric strength between I/O (See note 1.)	Vi-o	1500						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

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	G3VM-62J1	G3VM-202J1	G3VM-355JR	G3VM-352J	G3VM-354J	G3VM-402J	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, f=1 MHz	
			Maximum	1.6	1				mA	G3VM-62J1/202J1/352J/402J : I _O =Continuous load current ratings G3VM-355JR : 1a : I _O =120 mA, 1b : I _{OFF} =10 μA G3VM-354J : I _{OFF} =10 μA	
TriggerLED forward current	I _{FT} (I _{FC}) (See note 3.)	Maximum	3								
Release LED forward current	I _{FC} (I _{FT}) (See note 3.)	Minimum	0.1					mA			G3VM-62J1/202J1/352J/402J : I _{OFF} =100 μA G3VM-355JR : 1a : I _{OFF} =10 μA, 1b : I _O =120 mA G3VM-354J : I _O =120 mA
Output	Maximum resistance with output ON	R _{ON}	Typical	1	5	15	35 (25)	15	17	Ω	G3VM-62J1/202J1/352J/402J : I _F =5 mA, I _O =Continuous load current ratings G3VM-355JR : 1a : I _F =5 mA, I _O =120 mA, 1b : I _F =0, I _O =120 mA G3VM-352J : I _F =5 mA, I _O =110 mA, Values in parentheses are for t < 1 s. G3VM-354J : I _O =120 mA
			Maximum	2	8	25	50 (35)	25	35		
	Current leakage when the relay is open	I _{LEAK}	Maximum	1					μA	G3VM-62J1/202J1/352J/402J : V _{OFF} =Load voltage ratings G3VM-355JR : 1a : V _{OFF} =350 V, 1b : V _{OFF} =350 V, I _F =5 mA G3VM-354J : V _{OFF} =350 V, I _F =5 mA	
	Capacitance between terminals	C _{OFF}	Typical	130	100	65	30	65	70	pF	G3VM-62J1/202J1/352J/402J : V=0, f=1 MHz G3VM-355JR : 1a : V=0, f=1 MHz, I _F =5 mA G3VM-354J : V=0, f=1 MHz, I _F =5 mA
Capacitance between I/O terminals		C _{I-O}	Typical	0.8					pF	f=1 MHz, V=0 V	
Insulation resistance between I/O terminals		R _{I-O}	Minimum	1000					MΩ	V _{I-O} =500 VDC, RoHS=60%	
			Typical	10 ⁸							
Turn-ON time		t _{ON}	Typical	0.8	0.6	—	0.3	—	0.3	ms	I _F =0.5 mA, R _L =200 Ω, V _{DD} =20 V (See note 2.)
			Maximum	2	1.5	1a : 1 1b : 1	1				
Turn-OFF time		t _{OFF}	Typical	0.1		—	0.1	—	0.1		
			Maximum	0.5	1	1a : 1 1b : 3	1	3	1		

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



Note: 3. These values are for Relays with NC contacts

■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.

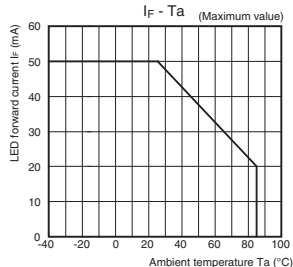
Item	Symbol		G3VM-62J1	G3VM-202J1	G3VM-355JR	G3VM-352J	G3VM-354J	G3VM-402J	Unit	
Load voltage (AC peak/DC)	V _{DD}	Maximum	48	200	280				320	V
Operating LED forward current	I _F	Minimum	5							mA
		Typical	7.5		—	10	—	7.5		
		Maximum	25							
Continuous load current (AC peak/DC)	I _O	Maximum	400	130	120	100	120			
Ambient operating temperature	T _a	Minimum	-20						°C	
		Maximum	65							

■Spacing and Insulation

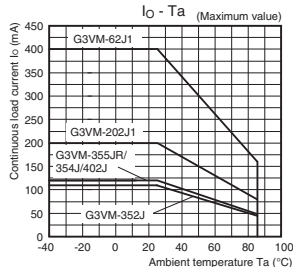
Item	Minimum	Unit
Creepage distances	4.0	mm
Clearance distances	4.0	
Internal isolation thickness	0.1	

■Engineering Data

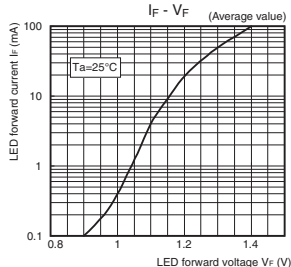
●LED forward current vs. Ambient temperature



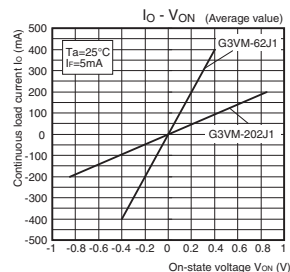
●Continuous load current vs. Ambient temperature



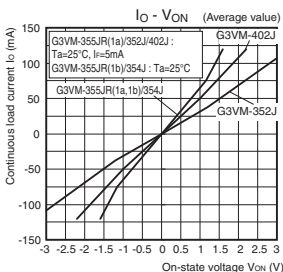
●LED forward current vs. LED forward voltage



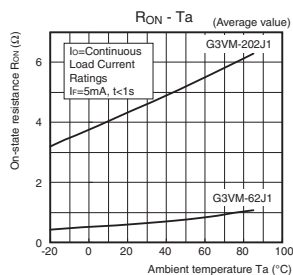
●Continuous load current vs. On-state voltage G3VM-62J1/202J1



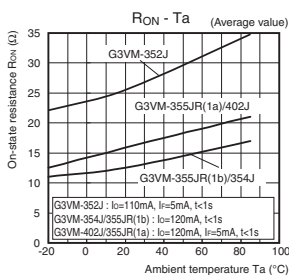
G3VM-355JR/352J/354J/402J



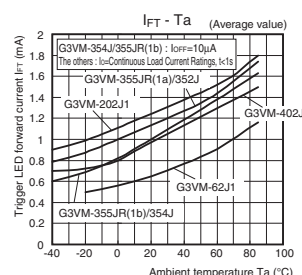
●On-state resistance vs. Ambient temperature G3VM-62J1/202J1



G3VM-355JR/352J/354J/402J

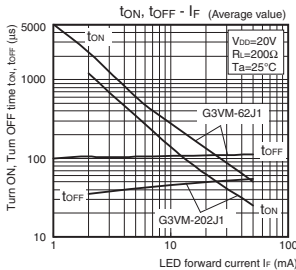


●Trigger LED forward current vs. Ambient temperature

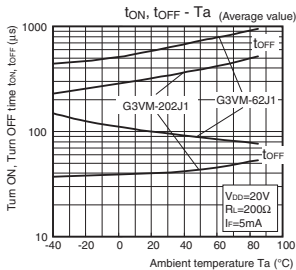


Engineering Data

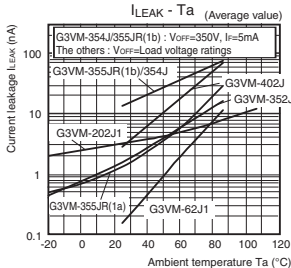
● Turn ON, Turn OFF time vs. LED forward current G3VM-62J1/202J1



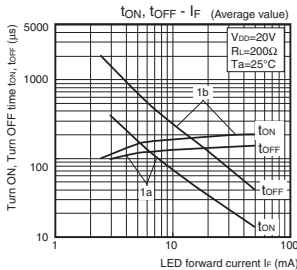
● Turn ON, Turn OFF time vs. Ambient temperature G3VM-62J1/202J1



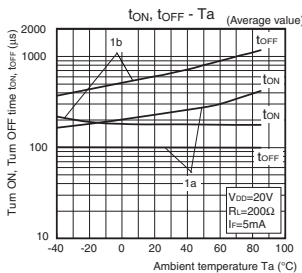
● Current leakage vs. Ambient temperature



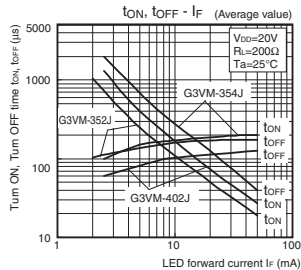
G3VM-355JR



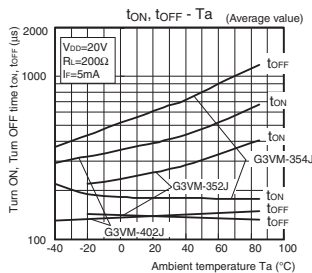
G3VM-355JR



G3VM-352J/354J/402J



G3VM-352J/354J/402J



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Small and high-
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High-electric
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Current-limiting
Low-output resistance
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Small and High-
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Certified Models with
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G3VM-□□

G3VM-□□J□

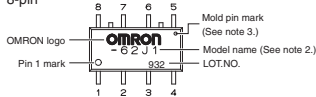
MOS FET Relays

■Appearance / Terminal Arrangement / Internal Connections

●Appearance

SOP (Small Outline Package)

SOP 8-pin

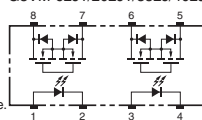


Note: 1. The actual product is marked differently from the image shown here.
Note: 2. "G3VM" does not appear in the model number on the Relay.

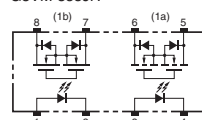
Note: 3. The indentation in the corner diagonally opposite from the pin 1 mark is from a pin on the mold.

●Terminal Arrangement/Internal Connections (Top View)

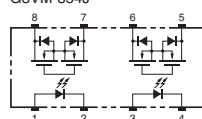
G3VM-62J1/202J1/352J/402J



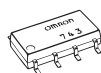
G3VM-355JR



G3VM-354J

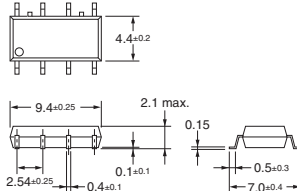


■Dimensions (Unit: mm)



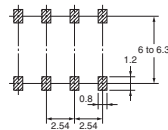
Surface-mounting Terminals

Weight: 0.2 g



Actual Mounting Pad Dimensions

(Recommended Value, Top View)



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

■Approved Standards

UL recognized



Model	Approved Standards	Contact form	File No.
G3VM-62J1	UL (recognized)	2a (DPST-NO)	E80555
G3VM-202J1		1a1b (SPST-NO/SPST-NC)	
G3VM-355JR		2a (DPST-NO)	
G3VM-352J		2b (DPST-NC)	
G3VM-354J		2a (DPST-NO)	

Models Certified by BSI for EN/IEC Standards

Model	Approved Standards	Contact form	File No.
G3VM-402J	EN 60950/EN 60065 (BSI certified)	2a (DPST-NO)	8884 8885

■Safety Precautions

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