

G3VM-81G□

MOS FET Relays SOP 4-pin, General-purpose Type

General-purpose MOS FET Relays in SOP 4-pin packages for a wide range of applications

• Load voltage: 80 V

RoHS Compliant



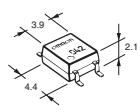
Note: The actual product is marked differently from the image shown here.

Application Examples

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

Package (Unit : mm, Average)

SOP 4-pin



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

Model Number Legend

G3VM-□□□□
1 2 3 4

1. Load Voltage 2. Contact form 3. Package
8: 80 V 1: 1a (SPST-NO) G: SOP 4-pin

4. 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
SOP4	1a (SPST-NO)	Surface-mounting Terminals	80 V	350 mA	G3VM-81G1	100 pcs.	G3VM-81G1(TR)	2,500 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)

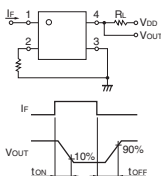
Item		Symbol	G3VM-81G1	Unit	Measurement conditions
Input	LED forward current	If	50	mA	
	LED forward current reduction rate	ΔIf/°C	-0.5	mA/°C	Ta ≥ 25°C
	LED reverse voltage	Vr	5	V	
	Connection temperature	Tj	125	°C	
Output	Load voltage (AC peak/DC)	Voff	80	V	
	Continuous load current (AC peak/DC)	Io	350	mA	
	ON current reduction rate	ΔIo/°C	-3.5	mA/°C	Ta ≥ 25°C
	Pulse ON current	Iop	1.05	mA	t=100 ms, Duty=1/10
	Connection temperature	Tj	125	°C	
Dielectric strength between I/O (See note 1.)		V _{I-O}	1500	V _{rms}	AC for 1 min
Ambient operating temperature		Ta	-20 to +85	°C	With no icing or condensation
Ambient storage temperature		Tstg	-40 to +125	°C	
Soldering temperature		-	260	°C	

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-81G1		Unit	Measurement conditions
LED forward voltage	VF	Minimum	1.0	V	IF=10 mA
		Typical	1.15		
		Maximum	1.3		
Reverse current	IR	Maximum	10	μA	VR=5 V
Capacitance between terminals	CT	Typical	15	pF	V=0, f=1 MHz
Trigger LED forward current	IFT	Typical	1	mA	Io=350 mA
		Maximum	4		
Release LED forward current	IFC	Minimum	0.2	mA	IOFF=10 μA
Maximum resistance with output ON	RON	Typical	1	Ω	IF=5 mA, Io=350 mA
		Maximum	1.2		
		Typical	0.2		
Current leakage when the relay is open	ILEAK	Typical	0.2	nA	Voff=30 V, Ta=50°C
		Maximum	1		
		Typical	30		
Capacitance between terminals	COFF	Typical	30	pF	V=0, f=100 MHz
		Maximum	40		
Capacitance between I/O terminals	CI-O	Typical	0.8	pF	f=1 MHz, VS=0V
Insulation resistance between I/O terminals	RI-O	Minimum	1000	MΩ	VI-O=500 VDC, RoH≤60%
		Typical	10 ⁹		
		Maximum	0.3		
Turn-ON time	tON	Typical	0.3	ms	IF=5 mA, RL=200 Ω, VDD=20 V (See note 2.)
		Maximum	0.5		
Turn-OFF time	tOFF	Typical	0.3	ms	IF=5 mA, RL=200 Ω, VDD=20 V (See note 2.)
		Maximum	0.5		
		Typical	0.5		

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



■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.

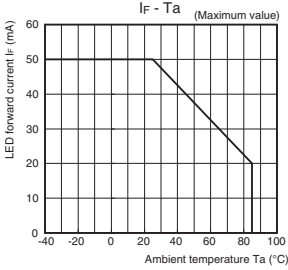
Item	Symbol	G3VM-81G1		Unit
Load voltage (AC peak/DC)	VDD	Maximum	64	V
		Minimum	5	
Operating LED forward current	IF	Maximum	30	mA
		Minimum	0.2	
Continuous load current (AC peak/DC)	Io	Maximum	350	mA
		Minimum	-20	
Ambient operating temperature	Ta	Minimum	-20	°C
		Maximum	60	

■Spacing and Insulation

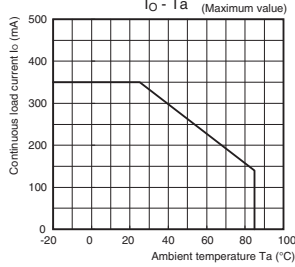
Item	Minimum	Unit
Creepage distances	4.0	mm
Clearance distances	4.0	
Internal isolation thickness	0.1	

Engineering Data

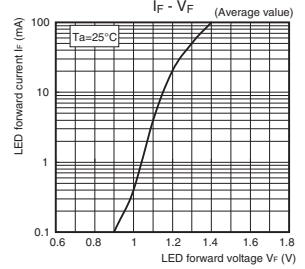
LED forward current vs. Ambient temperature



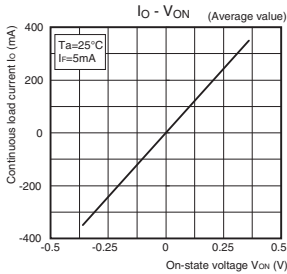
Continuous load current vs. Ambient temperature



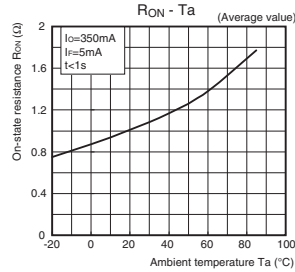
LED forward current vs. LED forward voltage



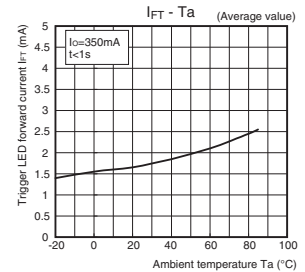
Continuous load current vs. On-state voltage



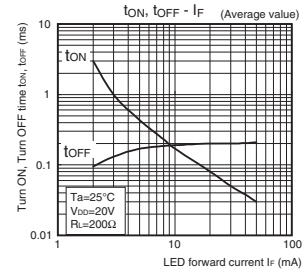
On-state resistance vs. Ambient temperature



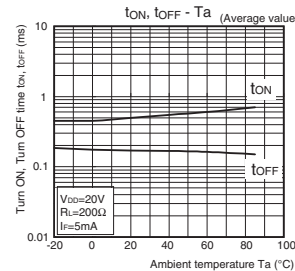
Trigger LED forward current vs. Ambient temperature



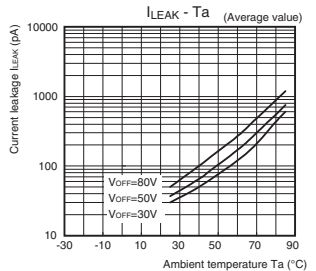
Turn ON, Turn OFF time vs. LED forward current



Turn ON, Turn OFF time vs. Ambient temperature



Current leakage vs. Ambient temperature



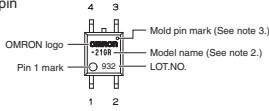
Introduction
 General purpose
 High-side-voltage
 Multi-contact pair
 High-current and
 Low-On-resistance
 Small and high
 and high
 dielectric
 strength
 Current-limiting
 Low-on/off-resistance
 and low-on-resistance
 Small and High-
 side-voltage
 Certified Models with
 Standard Derivation
 DIP
 SOP
 SSOP
 USOP
 VSON
 G3VM-81G

■ Appearance / Terminal Arrangement / Internal Connections

● Appearance

SOP (Small Outline Package)

SOP 4-pin

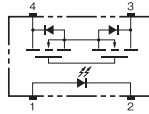


Note: 1. The actual product is marked differently from the image shown here.

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)

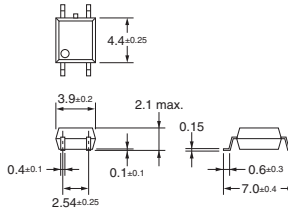


■ Dimensions (Unit: mm)



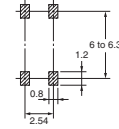
Surface-mounting Terminals

Weight: 0.1 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 

Approved Standards	Contact form	File No.
UL (recognized)	1a (SPST-NO)	E80555

■ Safety Precautions

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