

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



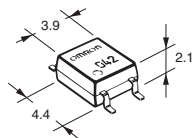
Note: The actual product is marked differently from the image shown here.

Application Examples

- Semiconductor test equipment
- Test & Measurement equipment
- Communication equipment
- Security equipment
- Industrial equipment
- Power circuit
- Amusement 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
8: 80 V
2. Contact form
1: 1a (SPST-NO)
3. Package
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	$\Delta I_F / ^\circ C$	-0.5	mA/ $^\circ C$	Ta $\geq 25^\circ C$
	LED reverse voltage	VR	5	V	
Connection temperature		TJ	125	$^\circ C$	
Output	Load voltage (AC peak/DC)	V _{OFF}	80	V	
	Continuous load current (AC peak/DC)	Io	350	mA	
	ON current reduction rate	$\Delta I_o / ^\circ C$	-3.5	mA/ $^\circ C$	Ta $\geq 25^\circ C$
	Pulse ON current	I _{op}	1.05	mA	t=100 ms, Duty=1/10
Connection temperature		TJ	125	$^\circ C$	
Dielectric strength between I/O *		V _{i-o}	1500	V _{rms}	AC for 1 min
Ambient operating temperature		Ta	-20 to +85	$^\circ C$	With no icing or condensation
Ambient storage temperature		T _{stg}	-40 to +125	$^\circ C$	
Soldering temperature		-	260	$^\circ C$	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.

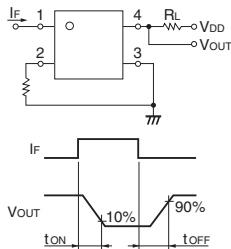
SOP

G3VM-81G

Electrical Characteristics (Ta = 25°C)

Item	Symbol	G3VM-81G1		Unit	Measurement conditions	
Input	LED forward voltage	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
Release LED forward current	IFC	Minimum	0.2	IoFF=10 μA		
Output	Maximum resistance with output ON	Typical	1	Ω	IF=5 mA, Io=350 mA	
		Maximum	1.2			
	Current leakage when the relay is open	Typical	0.2	nA	Voff=30 V, Ta=50°C	
		Maximum	1			
Capacitance between terminals	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 ⁸			
Turn-ON time	tON	Typical	0.3	ms	IF=5 mA, RL=200 Ω, VDD=20 V *	
Turn-OFF time		Maximum	0.5			
		Typical	0.3			
		Maximum	0.5			

* 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.

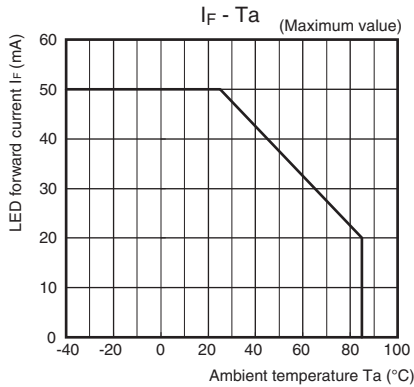
Item	Symbol	G3VM-81G1		Unit
Load voltage (AC peak/DC)	VDD	Maximum	64	V
		Minimum	5	
Operating LED forward current	IF	Maximum	30	mA
		Minimum	5	
Continuous load current (AC peak/DC)	Io	Maximum	350	mA
		Minimum	-20	
Ambient operating temperature	Ta	Maximum	60	°C
		Minimum	-20	

Spacing and Insulation

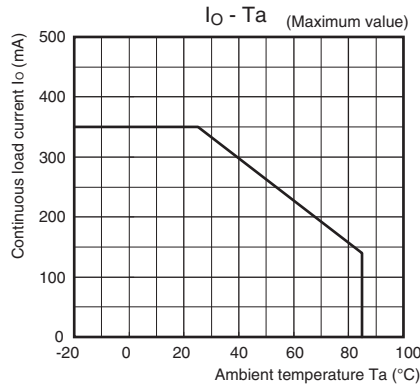
Item	Minimum	Unit
Creepage distances	4.0	mm
Clearance distances	4.0	
Internal isolation thickness	0.1	

Engineering Data

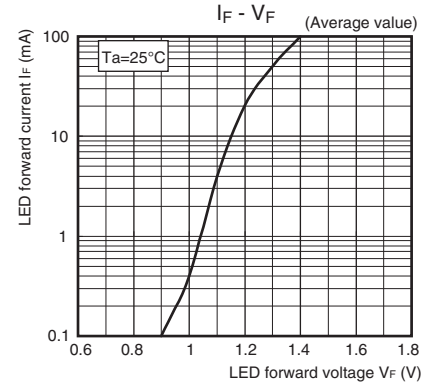
LED forward current vs. Ambient temperature



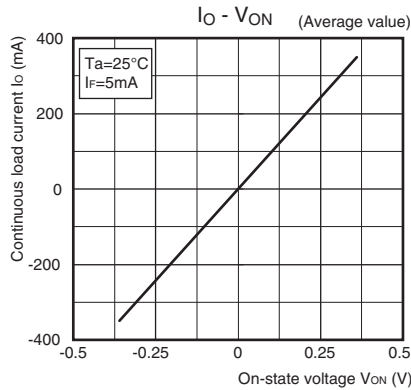
Continuous load current vs. Ambient temperature



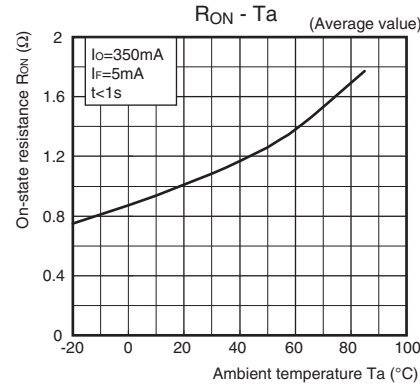
LED forward current vs. LED forward voltage



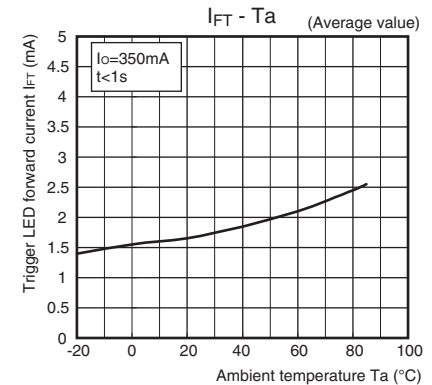
Continuous load current vs. On-state voltage



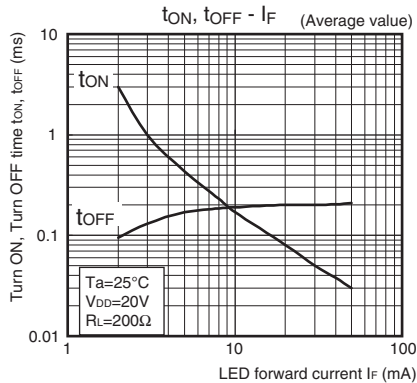
On-state resistance vs. Ambient temperature



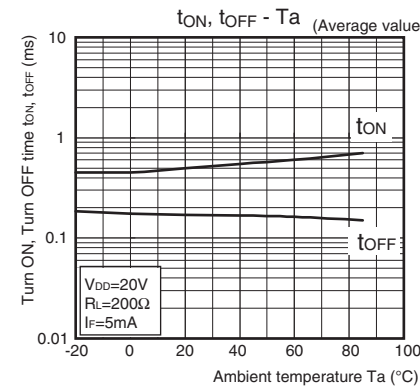
Trigger LED forward current vs. Ambient temperature



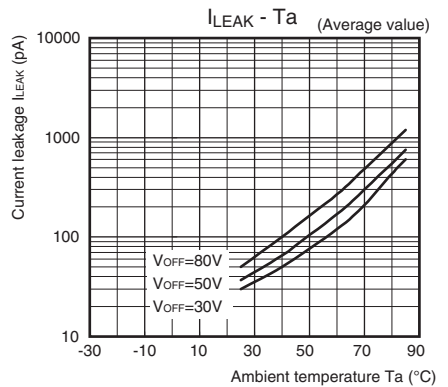
Turn ON, Turn OFF time vs. LED forward current



Turn ON, Turn OFF time vs. Ambient temperature



Current leakage vs. Ambient temperature

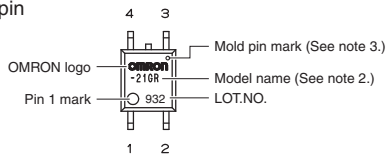


■ Appearance / Terminal Arrangement / Internal Connections

● Appearance

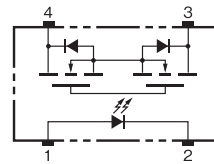
SOP (Small Outline Package)

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)

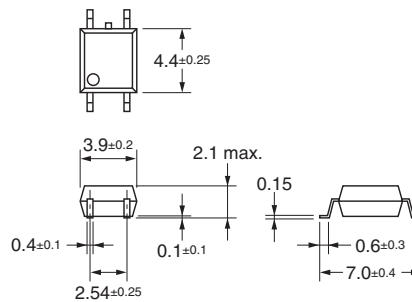


■ Dimensions (Unit: mm)



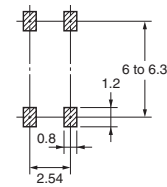
Surface-mounting Terminals

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.

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

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