

MOS FET Relays

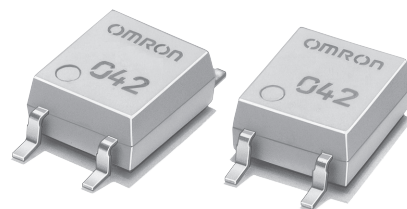
G3VM-61G1

MOS FET Relay Designed for Switching Minute and Analog Signals, SOP Package.

- Upgraded G3VM-S1 Series.
- Continuous load current of 400 mA.
- Dielectric strength of 1,500 Vrms between I/O.
- RoHS Compliant.

■ Application Examples

- Broadband systems
- Measurement devices and Data loggers
- Amusement machines



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

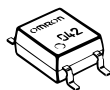
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting terminals	60 VAC	G3VM-61G1	100	---
			G3VM-61G1(TR)	---	2,500

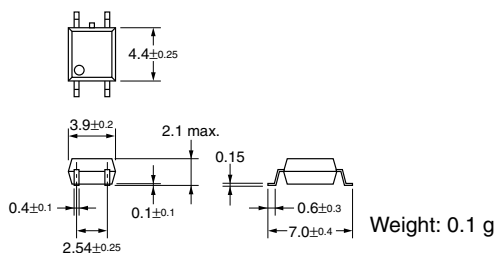
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-61G1

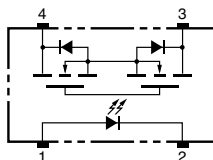


Note: The actual product is marked differently from the image shown here.



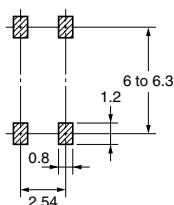
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-61G1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-61G1



Absolute Maximum Ratings (Ta = 25°C)

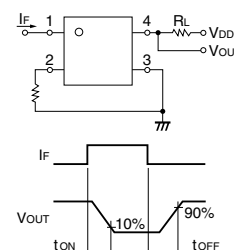
Item		Symbol	Rating	Unit	Measurement conditions
Input	LED forward current	I_F	50	mA	
	Repetitive peak LED forward current	I_{FP}	1	A	100 μ s pulses, 100 pps
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5	mA/ $^\circ\text{C}$	$T_a \geq 25^\circ\text{C}$
	LED reverse voltage	V_R	5	V	
	Connection temperature	T_J	125	$^\circ\text{C}$	
Output	Load voltage (AC peak/DC)	V_{OFF}	60	V	
	Continuous load current	I_O	400	mA	
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	-4.0	mA/ $^\circ\text{C}$	$T_a \geq 25^\circ\text{C}$
	Connection temperature	T_J	125	$^\circ\text{C}$	
Dielectric strength between input and output (See note 1.)		V_{I-O}	1,500	V_{rms}	AC for 1 min
Operating temperature		T_a	-40 to +85	$^\circ\text{C}$	With no icing or condensation
Storage temperature		T_{stg}	-55 to +125	$^\circ\text{C}$	With no icing or condensation
Soldering temperature (10 s)		---	260	$^\circ\text{C}$	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	Minimum	Typical	Maximum	Unit	Measurement conditions
Input	LED forward voltage	V_F	1.0	1.15	1.3	V	$I_F = 10 \text{ mA}$
	Reverse current	I_R	---	---	10	μA	$V_R = 5 \text{ V}$
	Capacity between terminals	C_T	---	30	---	pF	$V = 0, f = 1 \text{ MHz}$
	Trigger LED forward current	I_{FT}	---	1.6	3	mA	$I_O = 400 \text{ mA}$
Output	Maximum resistance with output ON	R_{ON}	---	1	2	Ω	$I_F = 5 \text{ mA}, I_O = 400 \text{ mA}$
	Current leakage when the relay is open	I_{LEAK}	---	0.001	1.0	μA	$V_{OFF} = 60 \text{ V}$
	Capacity between terminals	C_{OFF}	---	130	---	pF	$V = 0, f = 1 \text{ MHz}$
Capacity between I/O terminals		C_{I-O}	---	0.8	---	pF	$f = 1 \text{ MHz}, V_s = 0 \text{ V}$
Insulation resistance		R_{I-O}	1,000	---	---	M Ω	$V_{I-O} = 500 \text{ VDC}, R_{oh} \leq 60\%$
Turn-ON time		t_{ON}	---	0.8	2.0	ms	$I_F = 5 \text{ mA}, R_L = 200 \Omega, V_{DD} = 20 \text{ V}$ (See note 2.)
Turn-OFF time		t_{OFF}	---	0.1	0.5	ms	

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



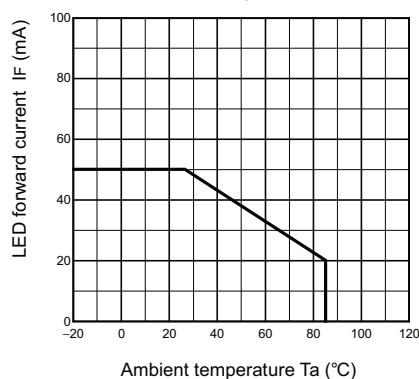
Recommended Operating Conditions

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

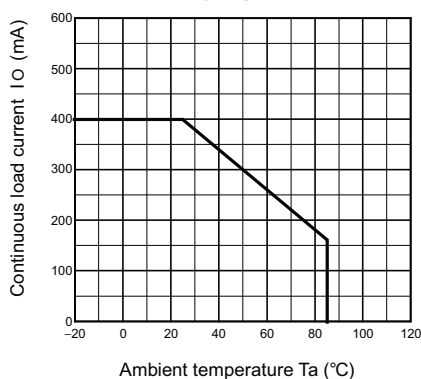
Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}	---	---	48	V
Operating LED forward current	I_F	5	7.5	25	mA
Continuous load current (AC peak/DC)	I_O	---	---	400	mA
Operating temperature	T_a	-20	---	65	$^\circ\text{C}$

■ Engineering Data

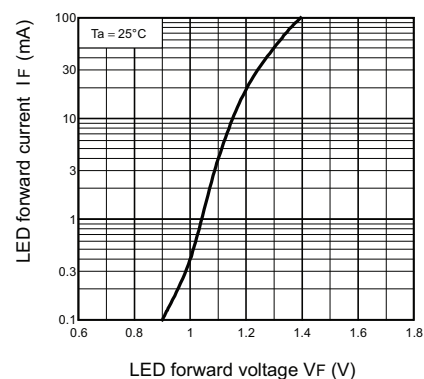
**LED forward current vs.
Ambient temperature**
IF - Ta



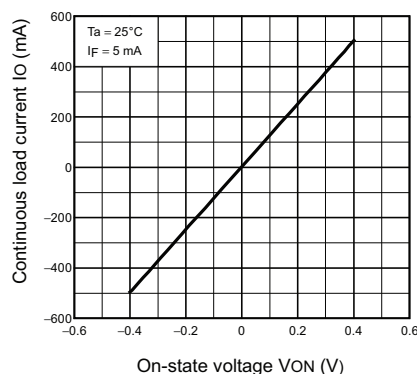
**Continuous load current vs.
Ambient temperature**
IO - Ta



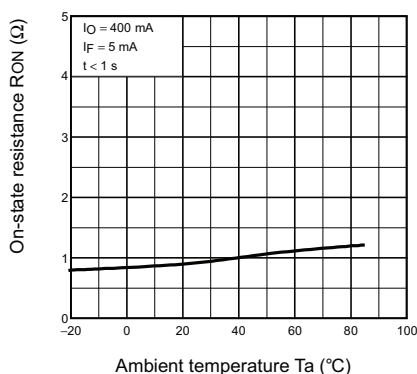
**LED forward current vs.
LED forward voltage**
IF - VF



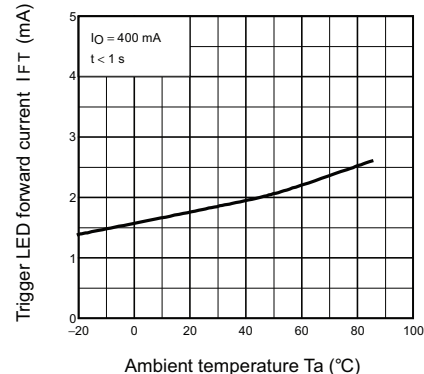
**Continuous load current vs.
On-state voltage**
IO - VON



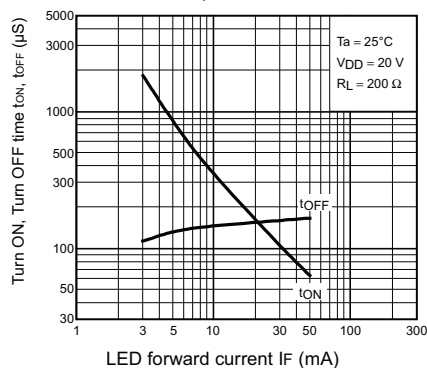
**On-state resistance vs.
Ambient temperature**
RON - Ta



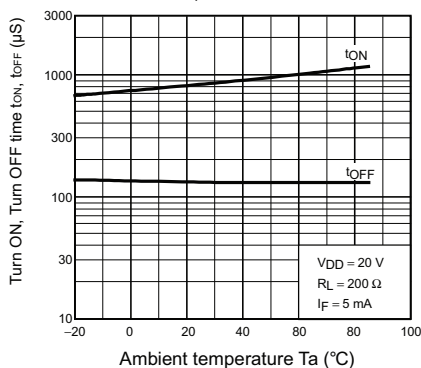
**Trigger LED forward current vs.
Ambient temperature**
IFT - Ta



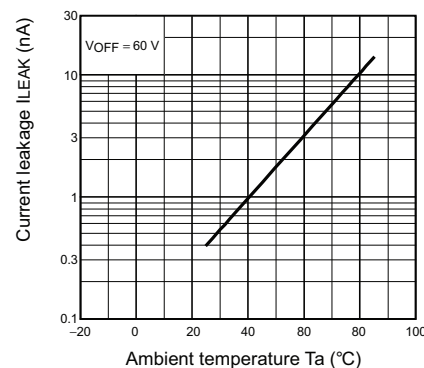
**Turn ON, Turn OFF time vs.
LED forward current**
tON, tOFF - IF



**Turn ON, Turn OFF time vs.
Ambient temperature**
tON, tOFF - Ta



**Current leakage vs.
Ambient temperature**
I LEAK - Ta



All sales are subject to Omron Electronic Components LLC standard terms and conditions of sale, which can be found at http://www.components.omron.com/components/web/webfiles.nsf/sales_terms.html

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

OMRON[®]

**OMRON ELECTRONIC
COMPONENTS LLC**

55 E. Commerce Drive, Suite B
Schaumburg, IL 60173

847-882-2288

OMRON ON-LINE

Global - <http://www.omron.com>

USA - <http://www.components.omron.com>

Cat. No. X302-E-1

12/10

Specifications subject to change without notice

Printed in USA

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Omron:

[G3VM-61G1](#) [G3VM-61G1\(TR\)](#)