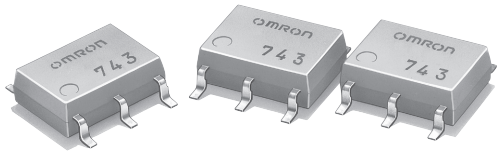
MOS FET Relays
G3VM-61H1

MOS FET Relay Designed for Switching Minute and Analog Signals has a 6-pin SOP Package and 60-V Load Voltage

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



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

■ Application Examples

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

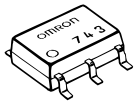
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	Surface-mounting terminals	60 VAC	**G3VM-61H1**	75	---
			G3VM-61H1(TR)	---	2,500

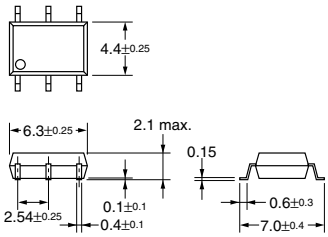
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-61H1



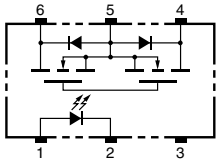
Note: The actual product is marked differently from the image shown here.



Weight: 0.13 g

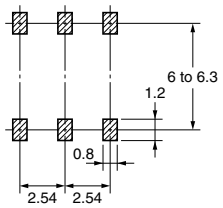
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-61H1



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

G3VM-61H1

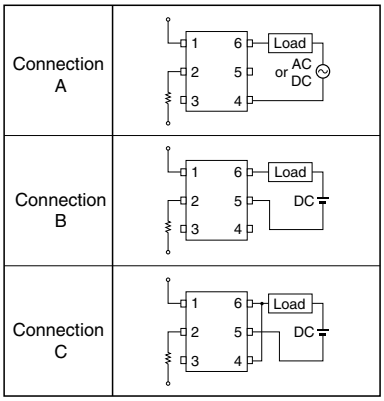


■ Absolute Maximum Ratings (Ta = 25°C)

Item			Symbol	Rating	Unit	Measurement conditions
Input	LED forward current		I_F	50	mA	
	Repetitive peak LED forward current		I_{FP}	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate		Δ I_F/°C	–0.5	mA/°C	$T_a \geq 25°C$
	LED reverse voltage		V_R	5	V	
	Connection temperature		T_j	125	°C	
Output	Load voltage (AC peak/DC)		V_{OFF}	60	V	
	Continuous load current	Connection A	I_O	400	mA	
		Connection B		400		
		Connection C		800		
	ON current reduction rate	Connection A	Δ I_{ON}/°C	–4.0	mA/°C	$T_a \geq 25°C$
		Connection B		–4.0		
		Connection C		–8.0		
	Connection temperature		T_j	125	°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	°C	With no icing or condensation
Storage temperature			T_{stg}	–55 to +125	°C	With no icing or condensation
Soldering temperature (10 s)			---	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.

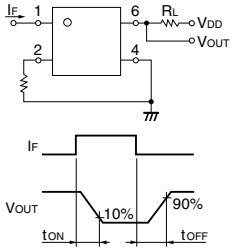
Connection Diagram



■ 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 mA
	Reverse current		I_R	---	---	10	μA	V_R = 5 V
	Capacity between terminals		C_T	---	30	---	pF	V = 0, f = 1 MHz
	Trigger LED forward current		I_{FT}	---	1.6	3	mA	I_O = 400 mA
Output	Maximum resistance with output ON	Connection A	R_{ON}	---	1	2	Ω	I_F = 5 mA, I_O = 400 mA
		Connection B		---	0.5	1	Ω	I_F = 5 mA, I_O = 400 mA
		Connection C		---	0.25	---	Ω	I_F = 5 mA, I_O = 800 mA
	Current leakage when the relay is open		I_{LEAK}	---	0.001	1.0	μA	V_{OFF} = 60 V
	Capacity between terminals A Connection		C_{OFF}	---	130	---	pF	V = 0, f = 1MHz
Capacity between I/O terminals			C_{I-O}	---	0.8	---	pF	f = 1 MHz, V_s = 0 V
Insulation resistance			R_{I-O}	1,000	---	---	MΩ	V_{I-O} = 500 VDC, $R_{oH} \leq 60\%$
Turn-ON time			t_{ON}	---	0.8	2.0	ms	I_F = 5 mA, R_L = 200 Ω, V_{DD} = 20 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

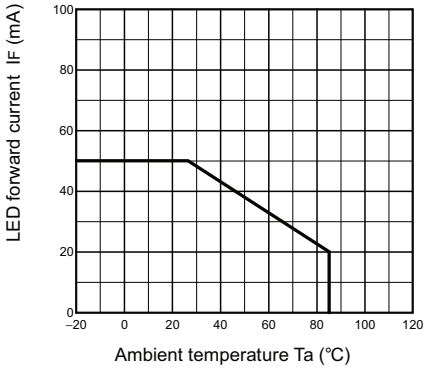
Use the G3VM under the following conditions so that the Relay will operate properly.

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	°C

■ Engineering Data

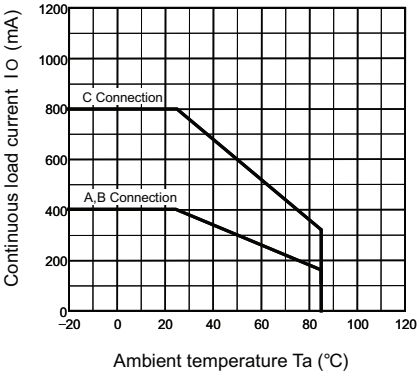
LED forward current vs. Ambient temperature

I_F - Ta



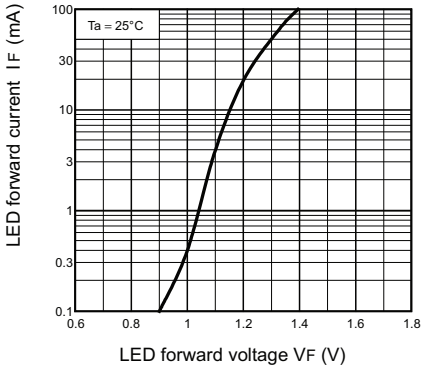
Continuous load current vs. Ambient temperature

I_O - Ta



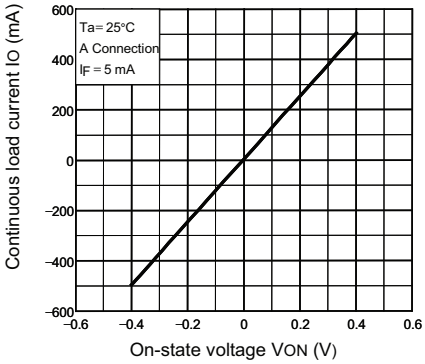
LED forward current vs. LED forward voltage

I_F - V_F



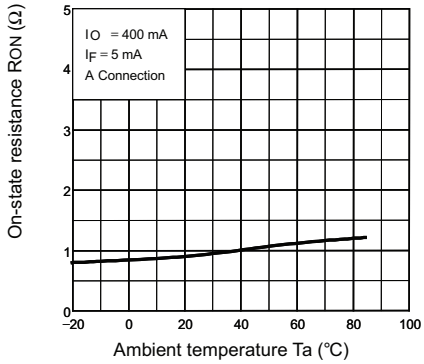
Continuous load current vs. On-state voltage

I_O - V_{ON}



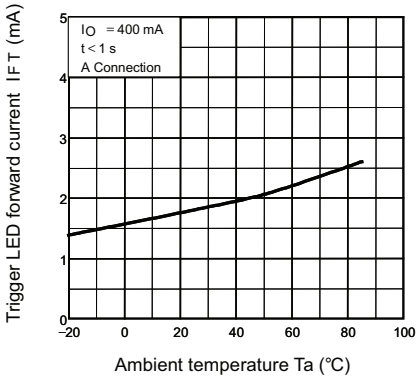
On-state resistance vs. Ambient temperature

R_{ON} - Ta



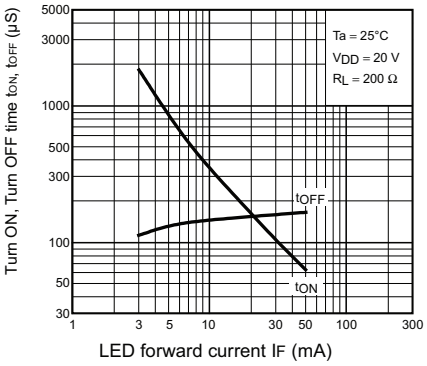
Trigger LED forward current vs. Ambient temperature

I_{FT} - Ta



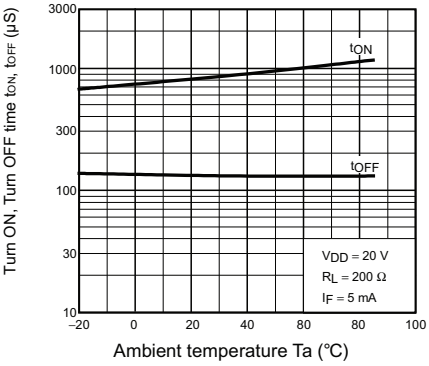
Turn ON, Turn OFF time vs. LED forward current

t_{ON}, t_{OFF} - I_F



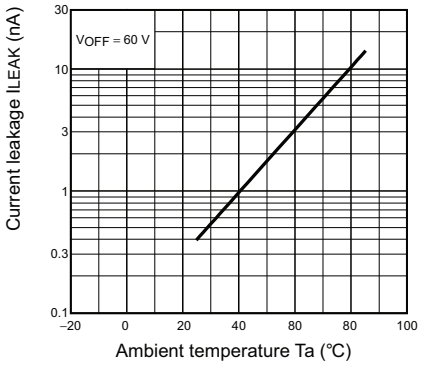
Turn ON, Turn OFF time vs. Ambient temperature

t_{ON}, t_{OFF} - 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 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