

# G3VM-61BR/ER

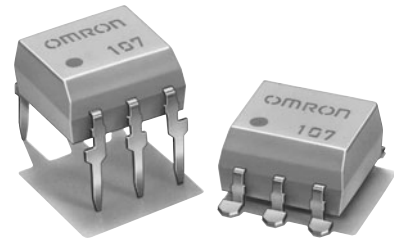
MOS FET Relays

## New Analog-switching MOS FET Relays Featuring a High Capacity of 2.5 A.



- Switches minute analog signals.
- Low ON-resistance of 0.1 Ω max.
- Continuous load current of 2.5 A.

RoHS compliant

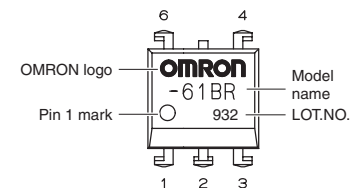
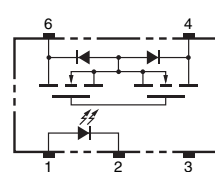


Note: The actual product is marked differently from the image shown here.

### Application Examples

- Test & Measurement equipment
- Security equipment

### Terminal Arrangement/Internal Connections



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

### List of Models

Package type	Contact form	Terminals	Load voltage (peak value) *	Model	Minimum package quantity	
					Number per tube	Number per tape and reel
DIP6	1a (SPST-NO)	PCB Terminals	60 V	G3VM-61BR	50	-
		Surface-mounting Terminals		G3VM-61ER		
				G3VM-61ER(TR)	-	1,500

\* The AC peak and DC value are given for the load voltage.

### Absolute Maximum Ratings (Ta = 25°C)

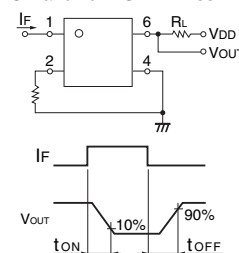
Item	Symbol	Rating	Unit	Measurement conditions	
Input	LED forward current	IF	30	mA	
	LED forward current reduction rate	ΔIF/°C	-0.3	mA/°C	Ta ≥ 25°C
	LED reverse voltage	VR	5	V	
	Connection temperature	TJ	125	°C	
Output	Load voltage (AC peak/DC)	V <sub>OFF</sub>	60	V	
	Continuous load current (AC peak/DC)	Io	2500	mA	
	ON current reduction rate	ΔIo/°C	-22	mA/°C	Ta ≥ 40°C
	Connection temperature	TJ	125	°C	
Dielectric strength between I/O (See note 1.)		V <sub>I-O</sub>	2500	V <sub>rms</sub>	AC for 1 min
Ambient operating temperature		Ta	-20 to +85	°C	With no icing or condensation
Ambient storage temperature		T <sub>stg</sub>	-40 to +125	°C	With no icing or condensation
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	Minimum	Typical	Maximum	Unit	Measurement conditions	
Input	LED forward voltage	V <sub>F</sub>	1.18	1.33	1.48	V	IF = 10 mA
	Reverse current	IR	-	-	10	μA	VR = 5 V
	Capacity between terminals	C <sub>T</sub>	-	70	-	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFT	-	1.0	3	mA	Io = 1 A
Output	Maximum resistance with output ON	-	0.065	0.1	Ω	IF = 10 mA, Io = 2 A, t = 10 ms	
	Current leakage when the relay is open	I <sub>LEAK</sub>	-	1.0	10	nA	V <sub>OFF</sub> = 60 V
	Capacity between terminals	C <sub>OFF</sub>	-	400	600	pF	V = 0, f = 1 MHz
	Capacity between I/O terminals	C <sub>I-O</sub>	-	0.8	-	pF	f = 1 MHz, Vs = 0 V
Insulation resistance between I/O terminals		R <sub>I-O</sub>	1000	-	-	MΩ	V <sub>I-O</sub> = 500 VDC, RoH ≤ 60%
Turn-ON time		t <sub>ON</sub>	-	1.0	1.5	ms	IF = 10 mA, RL = 200 Ω, VDD = 20 V (See note 2.)
Turn-OFF time		t <sub>OFF</sub>	-	0.2	0.4	ms	

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



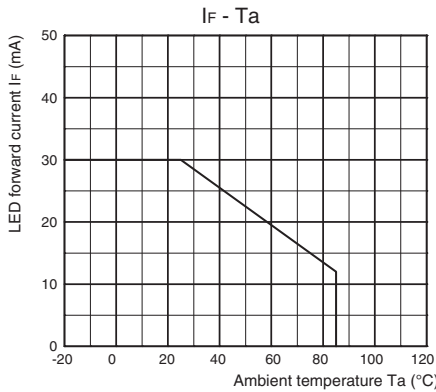
### Recommended Operating Conditions

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

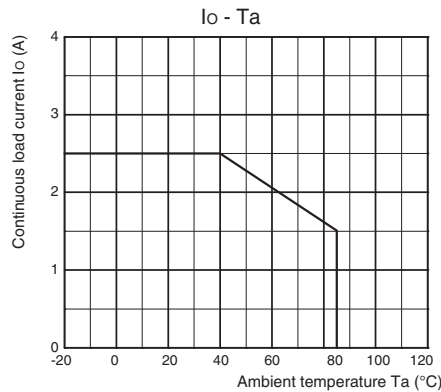
Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V <sub>DD</sub>	-	-	48	V
Operating LED forward current	I <sub>F</sub>	10	-	20	mA
Continuous load current (AC peak/DC)	I <sub>O</sub>	-	-	2500	mA
Ambient operating temperature	T <sub>a</sub>	25	-	60	°C

### Engineering Data

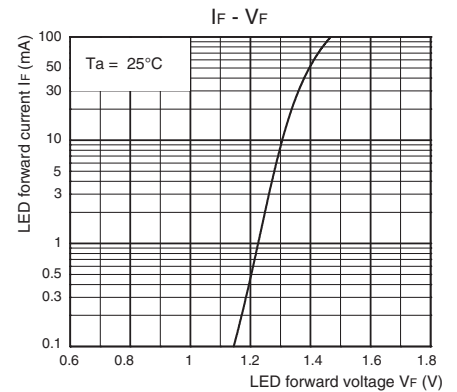
LED forward current vs. Ambient temperature



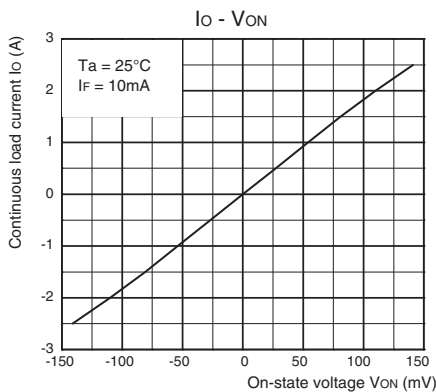
Continuous load current vs. Ambient temperature



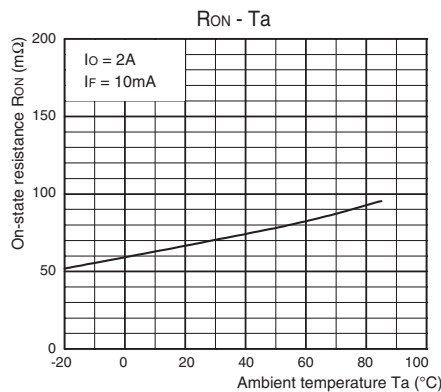
LED forward current vs. LED forward voltage



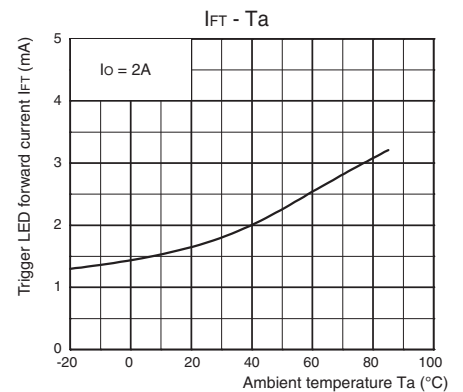
Continuous load current vs. On-state voltage



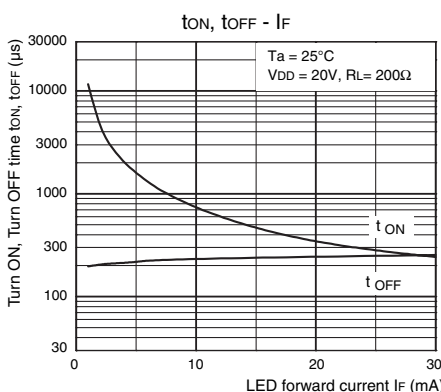
On-state resistance vs. Ambient temperature



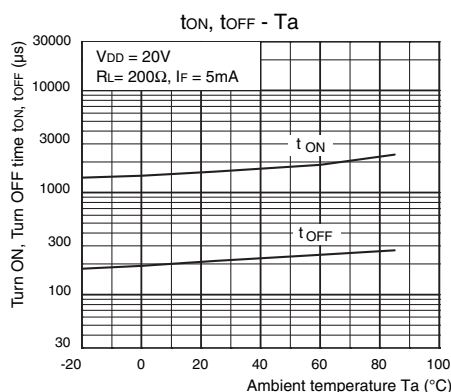
Trigger LED forward current vs. Ambient temperature



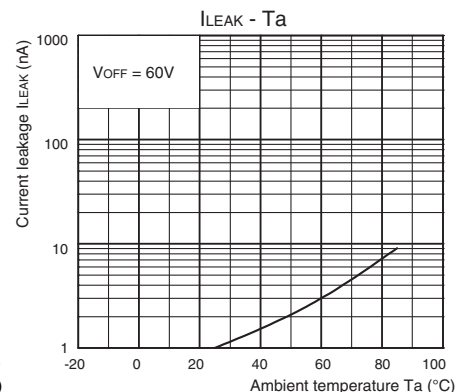
Turn ON, Turn OFF time vs. LED forward current



Turn ON, Turn OFF time vs. Ambient temperature



Current leakage vs. Ambient temperature



### Safety Precautions

- Refer to "Common Precautions" for all G3VM models.



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