G3VM-61BR/ER

MOS FET Relays

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

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

RoHS compliant



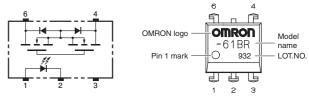
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Note: The actual product is marked differently from the image shown here.

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

 $[\]boldsymbol{\ast}$ The AC peak and DC value are given for the load voltage.

■ Absolute Maximum Ratings (Ta = 25°C)

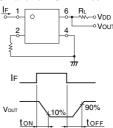
Item		Symbol	Rating	Unit	Measurement conditions
	LED forward current	lF	30	mA	
Ħ	LED forward current reduction rate	ΔIF/°C	-0.3	mA/°C	Ta ≥ 25°C
lnp	LED reverse voltage	VR	5	٧	
	Connection temperature	TJ	125	°C	
	Load voltage (AC peak/DC)	Voff	60	٧	
pal	Continuous load current (AC peak/DC)	lo	2500	mA	
Output	ON current reduction rate	Δlo/°C	-22	mA/°C	Ta ≥ 40°C
	Connection temperature	TJ	125	°C	
Diele	ctric strength between I/O (See note 1.)	V _I -O	2500	Vrms	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	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
	LED forward voltage	VF	1.18	1.33	1.48	V	IF = 10 mA
Input	Reverse current	IR	-	-	10	μА	VR = 5 V
트	Capacity between terminals	Ст	-	70	-	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFT	-	1.0	3	mA	lo = 1 A
Ħ	Maximum resistance with output ON		-	0.065	0.1	Ω	IF = 10 mA, lo = 2 A, t = 10 ms
utput	Current leakage when the relay is open	ILEAK	-	1.0	10	nA	Voff = 60 V
ō	Capacity between terminals	Coff	-	400	600	pF	V = 0, f = 1 MHz
Capacity between I/O terminals		C _I -O	-	0.8	-	pF	f = 1 MHz, Vs = 0 V
Insulation resistance between I/O terminals		Rı-o	1000	-	-	МΩ	Vi-o = 500 VDC, RoH ≤ 60%
Turn-ON time		ton	-	1.0	1.5	ms	IF = 10 mA, RL = 200 Ω ,
Turn-OFF time		toff	-	0.2	0.4	ms	V _{DD} = 20 V(See note 2.)

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



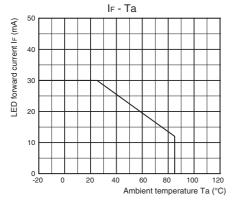
■ Recommended Operating Conditions

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

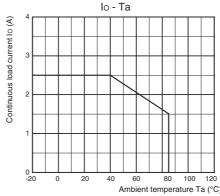
Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V _{DD}	-	-	48	V
Operating LED forward current	lF	10	-	20	mA
Continuous load current (AC peak/DC)	lo	-	-	2500	mA
Ambient operating temperature	Ta	25	-	60	°C

■ Engineering Data

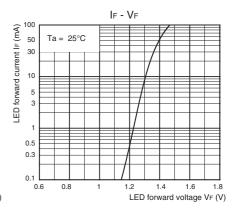
LED forward current vs. Ambient temperature



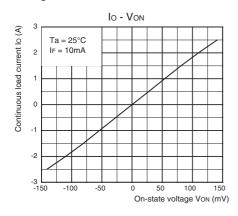
Continuous load current vs. Ambient temperature



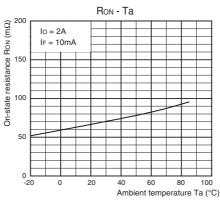
LED forward current vs. LED forward voltage



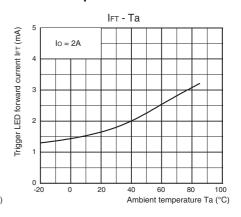
Continuous load current vs. On-state voltage



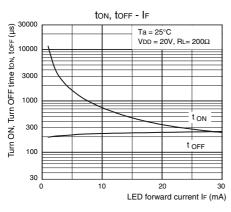
On-state resistance vs. Ambient temperature



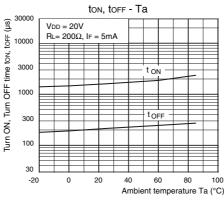
Trigger LED forward current vs. Ambient temperature



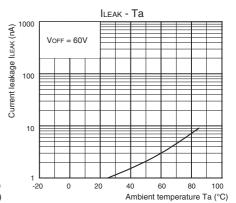
Turn ON, Turn OFF time vs. LED forward current



Turn ON, Turn OFF time vs. Ambient temperature



Current leakage vs. Ambient temperature

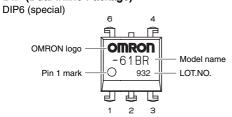


■ Safety Precautions

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

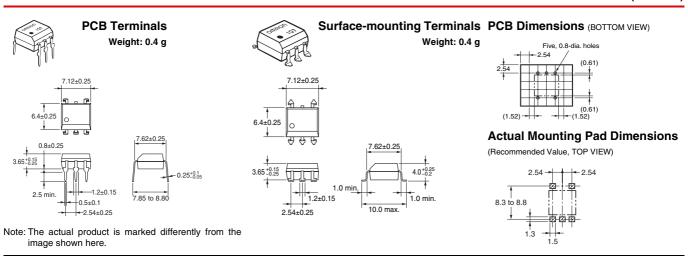
■ Appearance

DIP (Dual Inline Package)



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

■ Dimensions (Unit:mm)



Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

Note: Do not use this document to operate the Unit.

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