

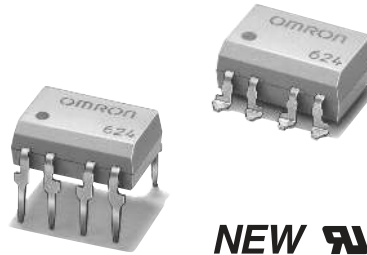
# MOS FET Relays G3VM-61CR/FR

## New High-capacity MOS FET Relay Allowing Switching of a 2-A Continuous Load Current

- Package designed with 1 channel and 8 pins.
- Low ON-resistance of 0.12 Ω max.
- Leakage current of 1.0 nA (typical) between output terminals when they are open.
- RoHS Compliant.

### Application Examples

- Semiconductor testers
- Measurement devices
- Security systems



**NEW** Approval pending

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

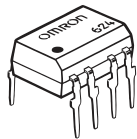
### List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO	PCB terminals	60 VAC	G3VM-61CR	50	---
	Surface-mounting terminals		G3VM-61FR		
				G3VM-61FR(TR)	---

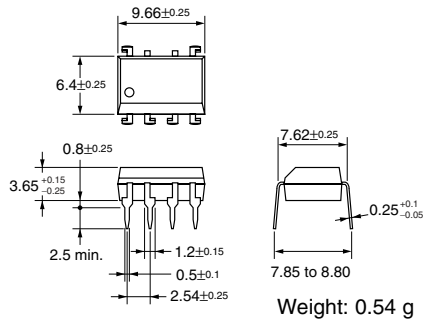
### Dimensions

**Note:** All units are in millimeters unless otherwise indicated.

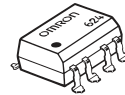
#### G3VM-61CR



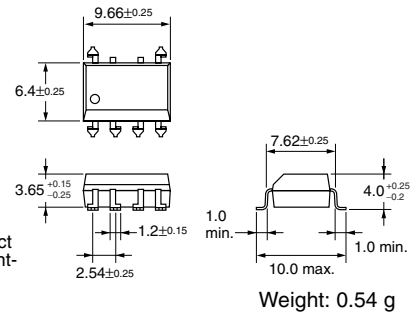
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#### G3VM-61FR

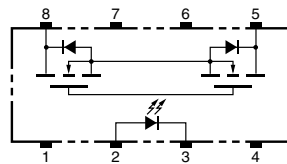


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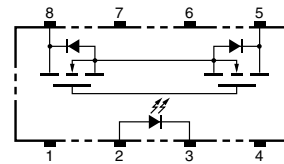


### Terminal Arrangement/Internal Connections (Top View)

#### G3VM-61CR

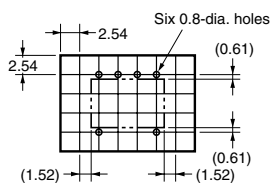


#### G3VM-61FR



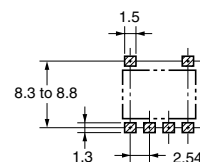
### PCB Dimensions (Bottom View)

#### G3VM-61CR



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

#### G3VM-61FR



■ Absolute Maximum Ratings (Ta = 25°C)

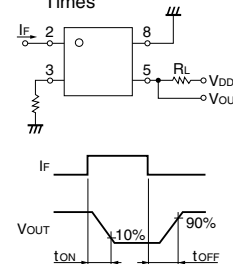
Item	Symbol	Rating	Unit	Measurement conditions	
Input	LED forward current	$I_F$	50	mA	
	Repetitive peak LED forward current	$I_{FP}$	1	A	100 $\mu$ s pulses, 100 pps
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5	mA/°C	Ta $\geq$ 25°C
	LED reverse voltage	$V_R$	6	V	
	Connection temperature	$T_j$	125	°C	
Output	Output dielectric strength	$V_{OFF}$	60	V	
	Continuous load current	$I_O$	2,000	mA	
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	-20	mA/°C	Ta $\geq$ 25°C
	Connection temperature	$T_j$	125	°C	
Dielectric strength between input and output (See note 1.)		$V_{I-O}$	1,500	Vrms	AC for 1 min
Operating temperature		$T_a$	-20 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.

■ Electrical Characteristics (Ta = 25°C)

Item	Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions	
Input	LED forward voltage	$V_F$	1.0	1.2	1.4	V	$I_F = 20$ mA
	Reverse current	$I_R$	---	---	10	$\mu$ A	$V_R = 6$ V
	Capacity between terminals	$C_T$	---	15	---	pF	$V = 0$ , $f = 1$ MHz
	Trigger LED forward current	$I_{FT}$	---	---	5	mA	$I_O = 1$ A
Output	Maximum resistance with output ON	$R_{ON}$	---	---	0.12	$\Omega$	$I_F = 10$ mA, $I_O = 1$ A
	Current leakage when the relay is open	$I_{LEAK}$	---	1.0	4.0	nA	$V_{OFF} = 20$ V Ta = 50°C
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	---	---	M $\Omega$	$V_{I-O} = 500$ VDC, $RoH \leq 60\%$
Turn-ON time		tON	---	---	5.0	ms	$I_F = 10$ mA, $R_L = 200$ $\Omega$ , $V_{DD} = 20$ V (See note 2.)
Turn-OFF time		tOFF	---	---	3.0	ms	

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



■ Recommended Operating Conditions

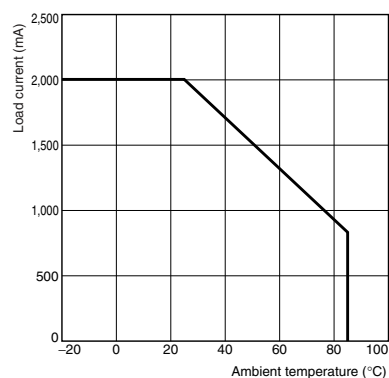
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	$V_{DD}$	---	---	48	V
Operating LED forward current	$I_F$	10	---	30	mA
Continuous load current	$I_O$	---	---	2	A
Operating temperature	$T_a$	25	---	50	°C

■ Engineering Data

Load Current vs. Ambient Temperature

G3VM-61CR(FR)



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