

G3VM-61KR

MOSFET Relays Slim SOP 4-pin, High-current and Low-ON-resistance Type

MOSFET Relay in slim SOP 4-pin package that achieves high switching capacity and low ON resistance

- Load voltage: 60 V
- 60-V Relay: Continuous load current of 1 A
- Mounting area reduced by 30% compared with conventional SOP packages



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

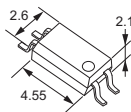
Application Examples

- FA equipment
- PLC
- Security equipment
- Test & Measurement equipment
- Power circuit

Package

(Unit : mm, Average)

Slim SOP 4-pin



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

Model Number Legend

G3VM-
1 2 3 4 5

1. Load Voltage 2. Contact form 3. Package
6 : 60 V 1 : 1a (SPST-NO) K : Slim SOP 4-pin

4. Additional function 5. Other informations
R: Low ON resistance When specifications overlap, serial code is added in the recorded order.

Ordering Information

Package	Contact form	Terminals	Load voltage (peak value) *	Continuous load current (peak value) *	Stick packaging		Tape packaging	
					Model	Minimum package quantity	Model	Minimum package quantity
Slim SOP 4-pin	1a (SPST-NO)	Surface-mounting Terminals	60 V	1 A	G3VM-61KR	175 pcs.	G3VM-61KR (TR)	2,500 pcs.

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

Note: To order tape packaging for Relays with surface-mounting terminals, add "(TR)" to the end of the model number.

Absolute Maximum Ratings (Ta = 25°C)

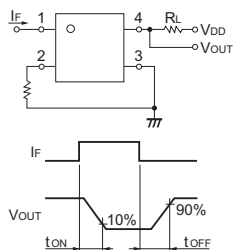
Item		Symbol	G3VM-61KR	Unit	Measurement conditions
Input	LED forward current	IF	30	mA	
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-1	mA/°C	Ta ≥ 95°C
	LED reverse voltage	VR	6	V	
	Connection temperature	TJ	125	°C	
Output	Load voltage (AC peak/DC)	VOFF	60	V	
	Continuous load current (AC peak/DC)	Io	1	A	
	ON current reduction rate	$\Delta I_O/^\circ\text{C}$	-10	mA/°C	Ta ≥ 25°C
	Pulse ON current	Iop	3	A	t=100 ms, Duty=1/10
	Connection temperature	TJ	125	°C	
Dielectric strength between I/O *		Vi-o	3,750	Vrms	AC for 1 min
Ambient operating temperature		Ta	-40 to +110	°C	With no icing or condensation
Ambient storage temperature		Tstg	-55 to +125	°C	
Soldering temperature		—	260	°C	10 s

* 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		G3VM-61KR	Unit	Measurement conditions
Input	LED forward voltage	V _F	Minimum	1.5	V	I _F =10 mA
			Typical	1.65		
			Maximum	1.8		
	Reverse current	I _R	Maximum	10	μA	V _R =6 V
	Capacitance between terminals	C _T	Typical	40	pF	V=0 V, f=1 MHz
	Trigger LED forward current	I _{FT}	Typical	0.6	mA	I _o = Continuous load current ratings
			Maximum	3		
Release LED forward current	I _{FC}	Minimum	0.1	mA	I _{OFF} =10 μA	
Output	Maximum resistance with output ON	R _{ON}	Typical	0.14	Ω	I _F =5mA I _o = Continuous load current ratings t<1s
			Maximum	0.3		
	Current leakage when the relay is open	I _{LEAK}	Typical	1	nA	V _{OFF} = Load current ratings
			Maximum	1,000		
	Capacitance between terminals	C _{OFF}	Typical	95	pF	V=0 V, f=1 MHz
			Maximum	-		
Capacitance between I/O terminals	C _{I-O}	Typical	0.4	pF	V _S =0 V, f=1 MHz	
Insulation resistance between I/O terminals	R _{I-O}	Typical	10 ⁸	MΩ	V _{I-O} =500 VDC, R.H≤60%	
Turn-ON time	t _{ON}	Typical	0.13	ms	I _F =5 mA, R _L =200 Ω, V _{DD} =20 V *	
		Maximum	0.5			
Turn-OFF time	t _{OFF}	Typical	0.04			
		Maximum	0.2			

* Turn-ON and Turn-OFF Times

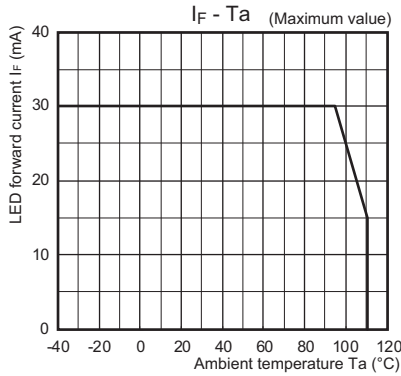


■Spacing and Insulation

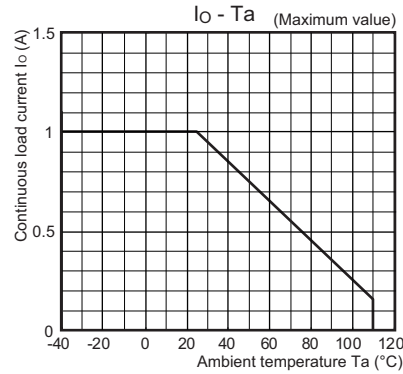
Item	G3VM-61KR	Unit
	Minimum	
Creepage distances	5.0	mm
Clearance distances	5.0	
Internal isolation thickness	0.2	

Engineering Data

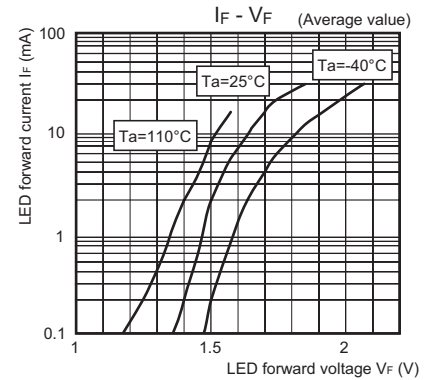
● LED forward current vs. Ambient temperature



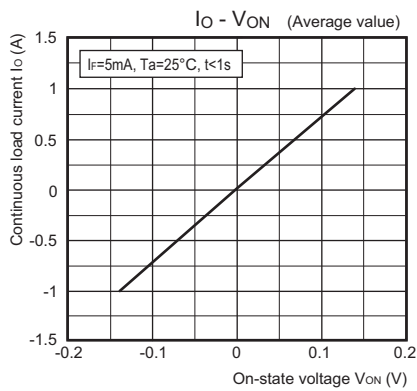
● Continuous load current vs. Ambient temperature



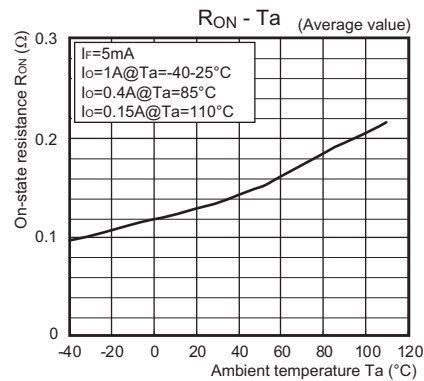
● LED forward current vs. LED forward voltage



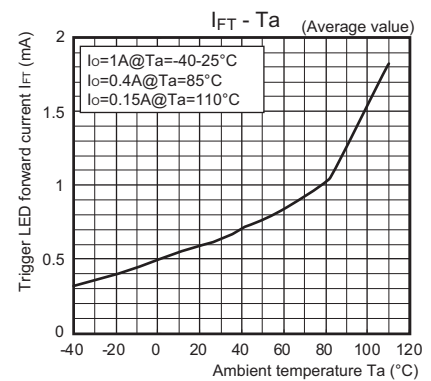
● Continuous load current vs. On-state voltage



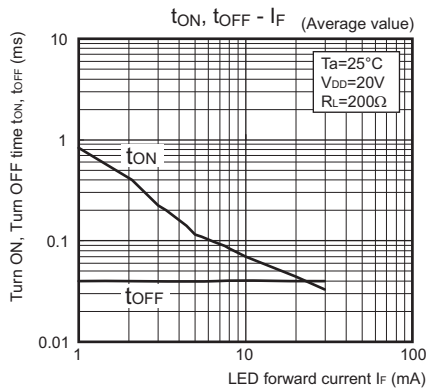
● On-state resistance vs. Ambient temperature



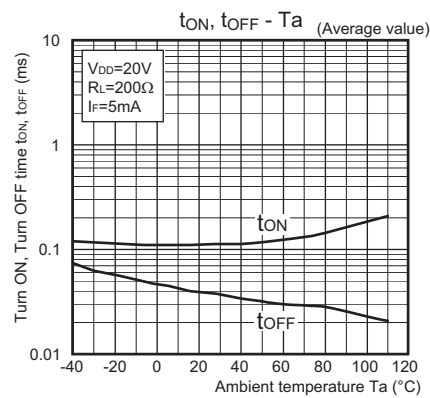
● Trigger LED forward current vs. Ambient temperature



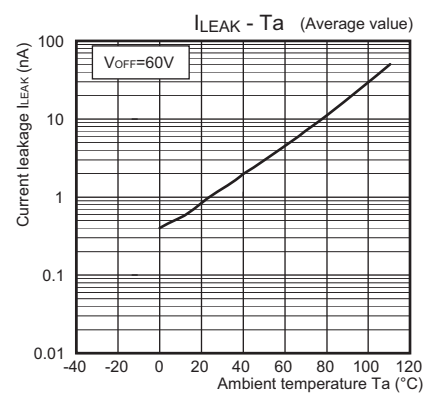
● Turn ON, Turn OFF time vs. LED forward current



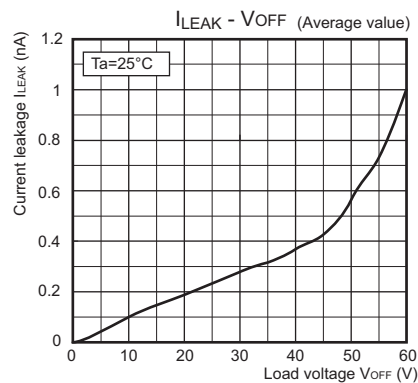
● Turn ON, Turn OFF time vs. Ambient temperature



● Current leakage vs. Ambient temperature



● Current leakage vs. Load voltage

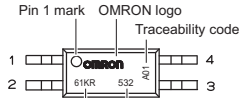


■Appearance / Terminal Arrangement / Internal Connections

●Appearance

SOP (Small Outline Package)

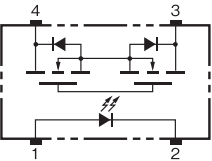
Slim SOP 4-pin (G3VM-61KR)



Model name (See note 2.) LOT.NO.

- Note: 1.** The actual product is marked differently from the image shown here.
Note: 2. "G3VM" does not appear in the model number on the Relay.
Note: 3. The indentation in the corner diagonally opposite from the pin 1 mark is from a pin on the mold.

●Terminal Arrangement/Internal Connections
(Top View)



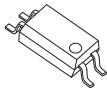
■Dimensions

CAD Data marked products, 2D drawings and 3D CAD models are available.
For CAD information, please visit our website, which is noted on the last page.

(Unit: mm)

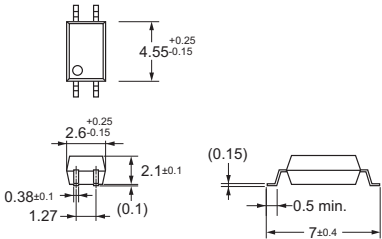
SOP (Small Outline Package)

Slim SOP 4-pin (G3VM-61KR)

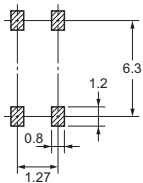


Surface-mounting Terminals

Weight: 0.05 g



Actual Mounting Pad Dimensions
(Recommended Value, Top View)



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

■Approved Standards

UL recognized 

Model	Approved Standards	Contact form	File No.
G3VM-61KR	UL (recognized)	1a (SPST-NO)	E80555

■Safety Precautions

- Refer to the *Common Precautions for All MOSFET Relays* for precautions that apply to all MOSFET Relays.

CAD Data

SOP

G3VM-61KR

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Device & Module Solutions Company

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