

G3VM-61PR□/71PR/81PR/101PR

MOS FET Relays USOP Package with High Load voltage

USOP Package with High Load voltage

• Load voltage 60V/75V/80V/100V

RoHS Compliant



Refer to "Common Precautions".



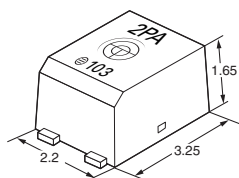
NEW

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

Application Examples

- Semiconductor test equipment
- Communication equipment
- Test & measurement equipment
- Data loggers

Package (Unit : mm, Average)



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

Model Number Legend

G3VM-□□□□□
1 2 3 4 5

1. Load Voltage

6: 60V
7: 75V
8: 80V
10: 100V

3. Package type

P: USOP 4 pin

4. Additional functions

R: Low On-resistance

5. Other informations

When specifications overlap, serial code is added in the recorded order.

2. Contact form

1: 1a (SPST-NO)

Ordering Information

Package type	Contact form	Terminals	Load voltage (peak value) *	Continuous load current (peak value) *	Packing/Tape cut		Packing/Tape & reel	
					Model	Minimum package quantity	Model	Minimum package quantity
USOP4	1a (SPST-NO)	Surface-mounting Terminals	60V	120mA	G3VM-61PR1	1 pc.	G3VM-61PR1(TR05)	500 pcs.
			75V	400mA	G3VM-61PR		G3VM-61PR(TR05)	
			80V	120mA	G3VM-71PR		G3VM-71PR(TR05)	
			100V	100mA	G3VM-81PR		G3VM-81PR(TR05)	
					G3VM-101PR		G3VM-101PR(TR05)	

Note: When ordering tape packing, add "(TR05)" (500pcs/reel) to the model number.
Ask your OMRON representative for orders under 500 pcs. We can supply products with the tape already cut.
Tape-cut USOPs are packaged without humidity resistance. Use manual soldering to mount them.
Refer to common precautions.

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

Absolute Maximum Ratings (Ta = 25°C)

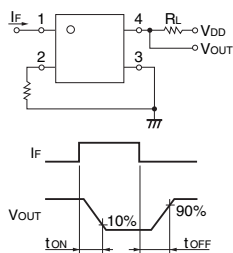
Item		Symbol	G3VM-61PR1	G3VM-61PR	G3VM-71PR	G3VM-81PR	G3VM-101PR	Unit	Measurement conditions
Input	LED forward current	IF	50					mA	
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5					mA/°C	Ta≥25°C
	LED reverse voltage	VR	5					V	
	Connection temperature	TJ	125					°C	
Output	Load voltage (AC peak/DC)	V _{OFF}	60		75	80	100	V	
	Continuous load current (AC peak/DC)	Io	120	400		120	100	mA	
	ON current reduction rate	$\Delta I_o/^\circ\text{C}$	-12	-4		-1.2	-1	mA/°C	Ta≥25°C
	Pulse ON current	I _{op}	360	1,200		360	300	mA	t=100ms, Duty=1/10
Connection temperature		TJ	125					°C	
Dielectric strength between I/O (See note 1.)		Vi-o	500					V _{rms}	AC for 1 min
Ambient operating temperature		Ta	-40~+85					°C	
Ambient storage temperature		T _{stg}	-40~+125					°C	With no icing or condensation
Soldering temperature		-	260					°C	10s

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	G3VM-61PR1	G3VM-61PR	G3VM-71PR	G3VM-81PR	G3VM-101PR	Unit	Measurement conditions	
Input	LED forward voltage	V _F	Minimum	1.0				V	I _F =10mA	
			Typical	1.15						
			Maximum	1.3						
	Reverse current	I _R	Maximum	10				μA	V _R =5V	
	Capacity between terminals	C _T	Typical	15				pF	V=0, f=1MHz	
	Trigger LED forward current	I _{FT}	Typical	1.0	0.5		0.6	0.5	mA	I _o =100mA
			Maximum	3						
Release LED forward current	I _{FC}	Minimum	0.1	0.2	0.1			mA	I _{OFF} =10μA	
Output	Maximum resistance with output ON	R _{ON}	Typical	10	1		7	8	Ω	G3VM-61PR : I _F =5mA, I _o =400mA Others : I _F =5mA, I _o =Continuous load current ratings, t<1s
			Maximum	15	1.5		12	14		
	Current leakage when the relay is open	I _{LEAK}	Maximum	1			0.02	0.2	nA	V _{OFF} =Load voltage ratings
	Capacity between terminals	C _{OFF}	Typical	0.7	20	30	5	6	pF	G3VM-61PR : V=0, f=1MHz, t<1s Others : V=0, f=100MHz, t<1s
			Maximum	1.3	—		7	8		
	Capacity between I/O terminals	C _{I-O}	Typical	0.4	0.3	0.4			pF	f=1MHz, V _S =0V
	Insulation resistance between I/O terminals	R _{I-O}	Maximum	1000					MΩ	V _{I-O} =500VDC, RoH≤60%
Typical			10 ⁸							
Turn-ON time	t _{ON}	Typical	0.04	0.3	0.4	0.14	0.12	ms	I _F =5mA, R _L =200Ω, V _{DD} =20V (See note 2.)	
Maximum		0.2	0.5	2	0.5	0.3				
Turn-OFF time	t _{OFF}	Typical	0.12	0.3	0.2	0.16	0.18			
		Maximum	0.2	0.5	1	0.2	0.3			

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



■Recommended Operating Conditions

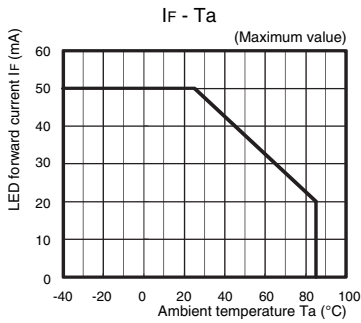
For usage with high reliability, Recommended Operation Conditions is a measure that takes into account the derating of Absolute Maximum Ratings and Electrical Characteristics.

Each item on this list is an independent condition, so it is not simultaneously satisfy several conditions.

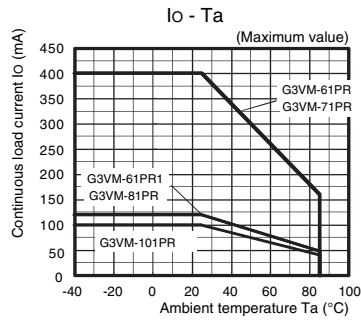
Item	Symbol		G3VM-61PR1	G3VM-61PR	G3VM-71PR	G3VM-81PR	G3VM-101PR	Unit
Load voltage (AC peak/DC)	V _{DD}	Maximum	48		60	64	80	V
Operating LED forward current	I _F	Minimum	5					mA
		Typical	7.5					
		Maximum	20					
Continuous load current (AC peak/DC)	I _O	Maximum	120	400		120	100	
Ambient operating temperature	T _a	Minimum	−20					°C
		Maximum	65					

Engineering Data

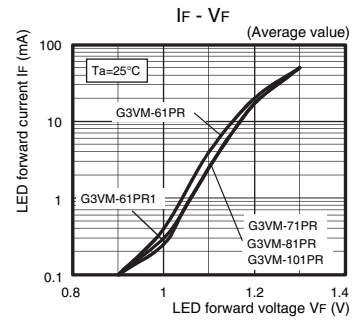
LED forward current vs. Ambient temperature



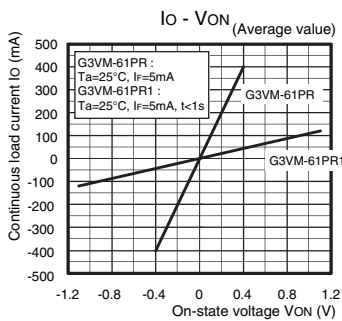
Continuous load current vs. Ambient temperature



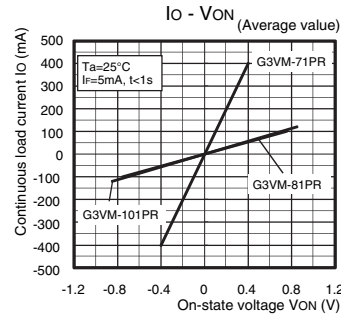
LED forward current vs. LED forward voltage



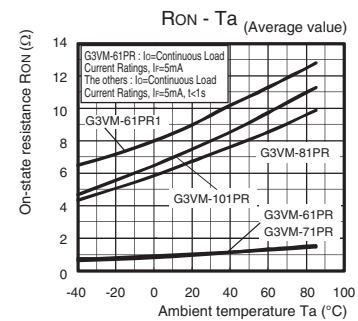
Continuous load current vs. On-state voltage



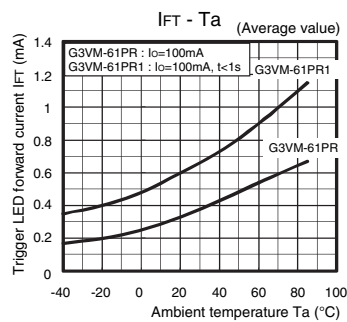
G3VM-71PR/81PR/101PR



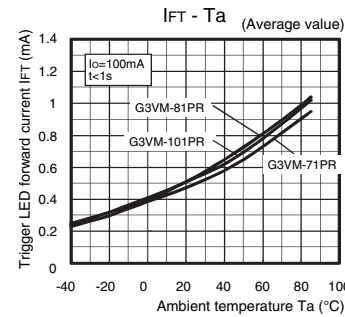
On-state resistance vs. Ambient temperature



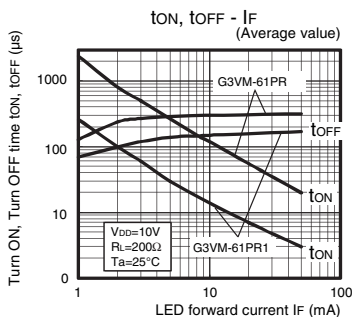
Trigger LED forward current vs. Ambient temperature



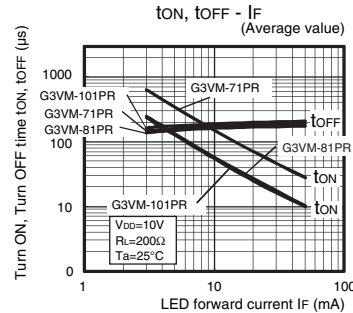
G3VM-71PR/81PR/101PR



Turn ON, Turn OFF time vs. LED forward current



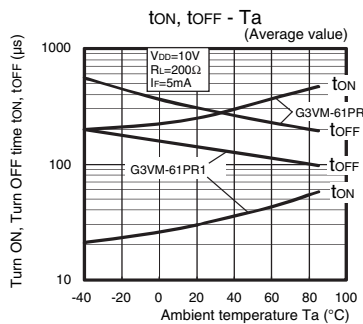
G3VM-71PR/81PR/101PR



Engineering Data

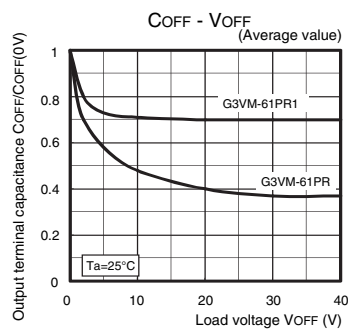
Turn ON, Turn OFF time vs. Ambient temperature

G3VM-61PR/61PR1

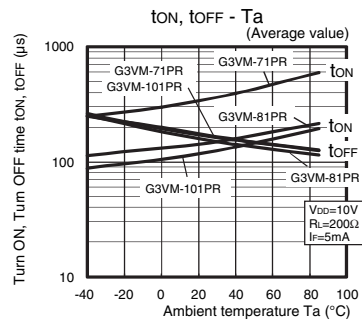


Output terminal capacitance vs. Load voltage

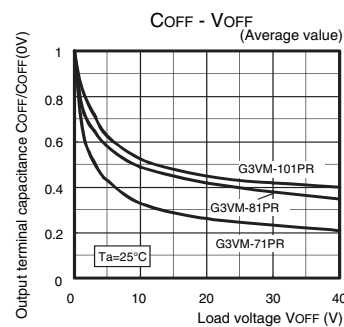
G3VM-61PR/61PR1



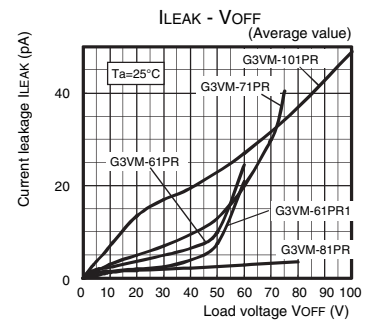
G3VM-71PR/81PR/101PR



G3VM-71PR/81PR/101PR

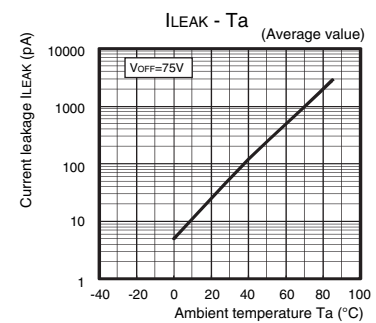


Current leakage vs. Load voltage



Current leakage vs. Ambient temperature

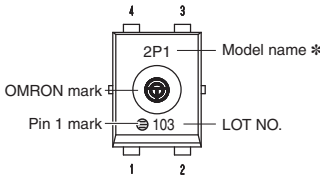
G3VM-71PR



■Appearance / Terminal Arrangement / Internal Connections

■Appearance

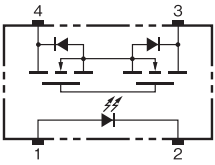
USOP (Ultra Small Outline Package)
USOP4 pin



* Actual model name marking for each model

Model	Marking
G3VM-61PR1	6P1
G3VM-61PR	6P0
G3VM-71PR	7P0
G3VM-81PR	8P0
G3VM-101PR	AP0

■Terminal Arrangement/Internal Connections (Top View)

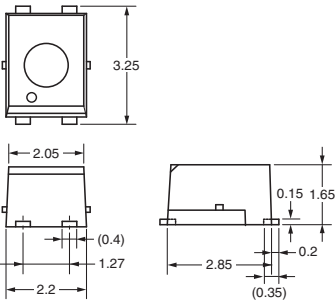
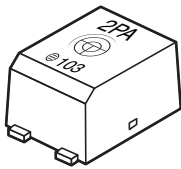


Note: The actual product is marked differently from the image shown here.

■Dimensions (Unit: mm)

Surface-mounting Terminals

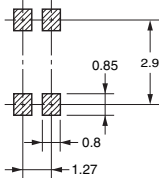
Weight: 0.03g



Unless otherwise specified, the dimensional tolerance is ±0.2 mm.

Actual Mounting Pad Dimensions

(Recommended Value, Top View)



Unless otherwise specified, the dimensional tolerance is ±0.2 mm.

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■Approved Standards

UL recognized

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

■Safety Precautions

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

- 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.

OMRON Corporation

Electronic and Mechanical Components Company

Contact: www.omron.com/ecb

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