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Introduction
General-purpose
High-load-voltage
Multi-contact pair
(2a, 2b, and 1a1b)
High-current and
Low-Ohm-resistance
Small and high-
dielectric-strength
High-dielectric-
strength
Current-limiting
Low-voltage-sensitivity
and low-Ohm-resistance
Small and high-
load-voltage
Certified Models with
standards certification
DIP
SOP
SSOP
USOP
VSON

G3VM-61PR□/71PR/81PR/101PR

MOS FET Relays USOP, Small and High-load-voltage Type

USOP Package with High Load voltage

- Load voltage: 60 V, 75 V, 80 V, or 100 V
- G3VM-61PR1: $\text{Low } C \times R = 7 \text{ pF} \cdot \Omega$, $C_{\text{OFF}} (\text{standard}) = 0.7 \text{ pF}$,
 $R_{\text{ON}} (\text{standard}) = 10 \Omega$

RoHS Compliant



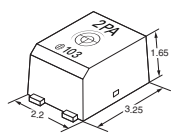
Note: The actual product is marked differently from the image shown here.

Application Examples

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

Package (Unit : mm, Average)

USOP 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**
6: 60 V
7: 75 V
8: 80 V
10: 100 V
- 2. Contact form**
1: 1a (SPST-NO)
- 3. Package**
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.

Ordering Information

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

Note: To order tape packaging for Relays with surface-mounting terminals, add "(TR05)" to the end of the model number.
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.

Introduction

General-purpose

High-side-voltage

Multi-channel-relay (2A, 2A, and 1A)

High-current and low-on-resistance

Small and high-dielectric-strength

High-dielectric-strength

Current-limiting

Low-voltage-capacitance and low-ohm-resistance

Small and high-side-voltage

Certified models with Standards Certification

DIP

SOP

SSOP

USOP

VSON

G3VM-61PR□/71PR/81PR/101PR

G3VM-61PR□/71PR/81PR/101PR

MOS FET Relays

■Absolute Maximum Ratings (Ta = 25°C)

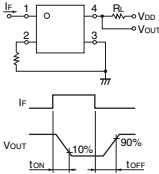
Item		Symbol	G3VM-61PR1	G3VM-61PR	G3VM-71PR	G3VM-81PR	G3VM-101PR	Unit	Measurement conditions
Input	LED forward current	IF	50					mA	Ta≥25°C
	LED forward current reduction rate	ΔIF/°C	-0.5					mA/°C	
	LED reverse voltage	VR	5					V	
Connection temperature		TJ	125					°C	
Output	Load voltage (AC peak/DC)	V _{OFF}	60		75	80	100	V	
	Continuous load current (AC peak/DC)	I _o	120	400	120	100		mA	
	ON current reduction rate	ΔI _o /°C	-1.2	-4	-1.2	-1		mA/°C	Ta≥25°C
	Pulse ON current	I _{op}	360	1,200	360	300		mA	t=100 ms, Duty=1/10
	Connection temperature	TJ	125					°C	
	Dielectric strength between I/O (See note 1.)	V _{i-o}	500					V _{rms}	AC for 1 min
	Ambient operating temperature	Ta	-40 to +85					°C	With no icing or condensation
Ambient storage temperature		T _{stg}	-40 to +125					°C	
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	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 =10 mA	
			Typical	1.15						
			Maximum	1.3						
	Reverse current	I _R	Maximum	10				μA	V _R =5 V	
	Capacitance between terminals	C _T	Typical	15				pF	V=0, f=1 MHz	
Output	Trigger LED forward current	I _{FT}	Typical	1.0	0.5	0.6	0.5	mA	I _o =100 mA	
			Maximum	3						
	Release LED forward current	I _{FC}	Minimum	0.1	0.2	0.1	mA	I _{OFF} =10 μA		
			Typical	10	1	7			8	
	Maximum resistance with output ON	R _{ON}	Maximum	15	1.5	12	14	Ω	G3VM-61PR : I _F =5 mA, I _o =400 mA Others : I _F =5 mA, I _o =Continuous load current ratings, t<1 s	
			Current leakage when the relay is open	I _{LEAK}	Maximum	1				0.02
	Capacitance between terminals	C _{OFF}	Typical	0.7	20	30	5	6	pF	G3VM-61PR : V=0, f=1 MHz, t<1 s Others : V=0, f=100 MHz, t<1 s
			Maximum	1.3	30	–	7	8		
Capacitance between I/O terminals		C _{i-o}	Typical	0.4	0.3	0.4		pF	f=1 MHz, V _S =0 V	
Insulation resistance between I/O terminals		R _{i-o}	Maximum	1000				MΩ	V _{i-o} =500 VDC, R _{oH} ≤60%	
			Typical	10 ⁸						
Turn-ON time		t _{ON}	Typical	0.04	0.3	0.4	0.14	0.12	ms	I _F =5 mA, R _L =200 Ω, V _{DD} =20 V (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

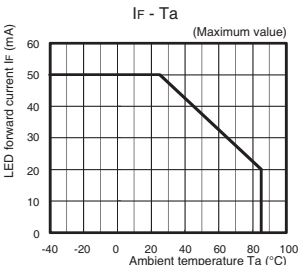
For usage with high reliability, Recommended Operation Conditions is a measure that takes into account the derating of Absolute Maximum Ratings and Electrical Characteristics.

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

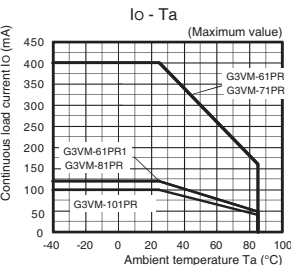
Item	Symbol		G3VM-61PR1	G3VM-61PR	G3VM-71PR	G3VM-81PR	G3VM-101PR	Unit	
Load voltage (AC peak/DC)	V _{DD}	Maximum	48		60	64	80	V	
Operating LED forward current	I _F	Minimum	5						mA
		Typical	7.5						
		Maximum	20						
Continuous load current (AC peak/DC)	I _o	Maximum	120	400		120	100		
Ambient operating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

Engineering Data

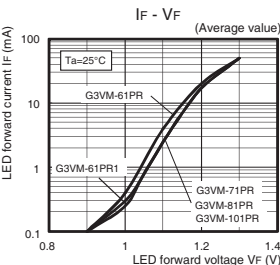
LED forward current vs. Ambient temperature



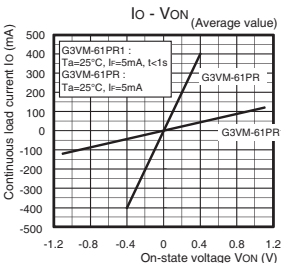
Continuous load current vs. Ambient temperature



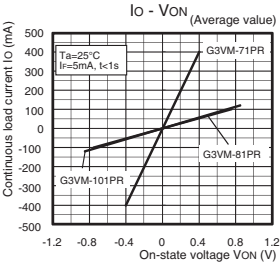
LED forward current vs. LED forward voltage



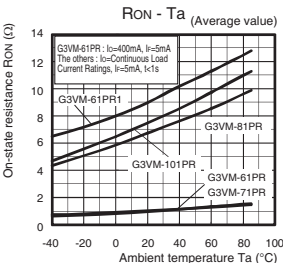
Continuous load current vs. On-state voltage



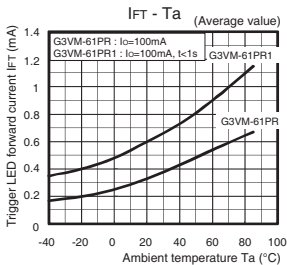
G3VM-71PR/81PR/101PR



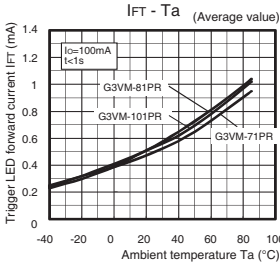
On-state resistance vs. Ambient temperature



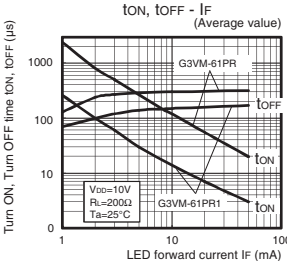
Trigger LED forward current vs. Ambient temperature



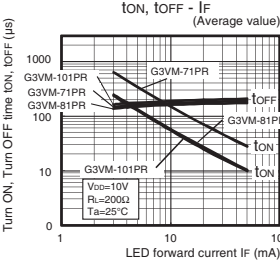
G3VM-71PR/81PR/101PR



Turn ON, Turn OFF time vs. LED forward current



G3VM-71PR/81PR/101PR



G3VM-61PR□/71PR/81PR/101PR

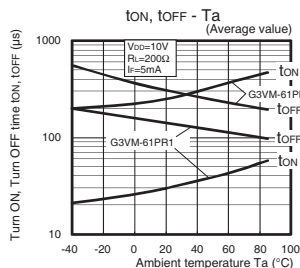
MOS FET Relays

Engineering Data

Turn ON, Turn OFF time vs.

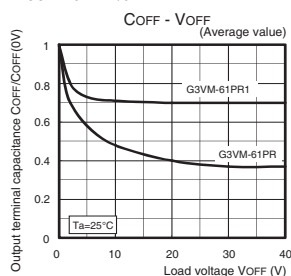
Ambient temperature

G3VM-61PR1/61PR

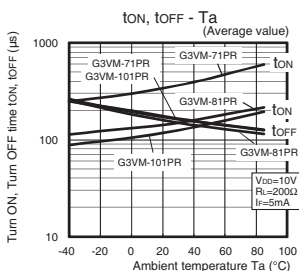


Output terminal capacitance vs. Load voltage

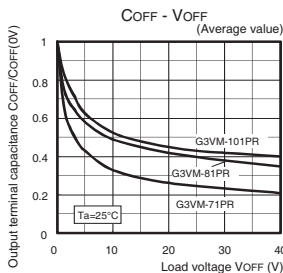
G3VM-61PR1/61PR



G3VM-71PR/81PR/101PR

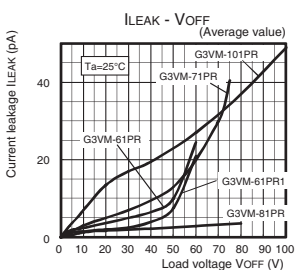


G3VM-71PR/81PR/101PR



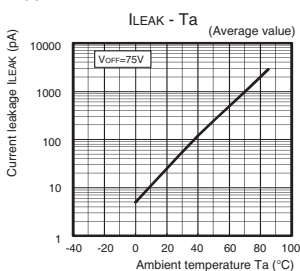
Current leakage vs.

Load voltage



Current leakage vs. Ambient temperature

G3VM-71PR

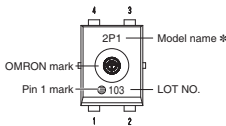


■Appearance / Terminal Arrangement / Internal Connections

●Appearance

USOP (Ultra Small Outline Package)

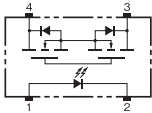
USOP 4-pin



* 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)



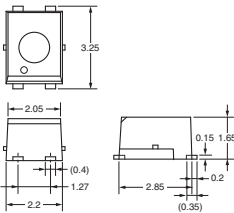
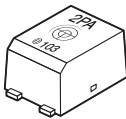
Note: 1. The actual product is marked differently from the image shown here.

Note: 2. "G3VM" does not appear in the model number on the Relay.

■Dimensions (Unit: mm)

Surface-mounting Terminals

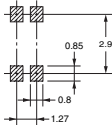
Weight: 0.03 g



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.

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

■Approved Standards

UL recognized 

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

■Safety Precautions

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