

G3VM-61YR

MOS FET Relays WSON 4-pin, Low-output-capacitance and Low-ON-resistance Type (with Low $C \times R$)

Compact WSON package

MOS FET Relay Suitable for High-frequency Signal Switches

- A compact, lightweight $0.8 \times 2.0 \times 1.45$ mm package with a weight of just 0.01 g helps to reduce the space required by circuit boards
- Low $C \times R = 13.2$ pF/ Ω , C_{OFF} (standard) = 12 pF, R_{ON} (standard) = 1.1 Ω , providing excellent output characteristics in the high-frequency domain
- High-temperature capable
(usable ambient operating temperature range: -40°C to 110°C)



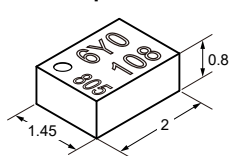
Note: The actual product is marked differently from the image shown here.

Application Examples

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

Package (Unit: mm, Average)

WSON4 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

4. Additional functions

R: Low On-resistance

2. Contact form Package type

1: SPST-NO (1a)

3. Package type

Y: WSON4 pin

5. Other informations

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

Ordering Information

Package type	Contact form	Terminals	Load voltage (peak value) *1	Continuous load current (peak value) *1	Packing/Tape cut		Packing/Tape & reel	
					Model	Minimum package quantity	Model	Minimum package quantity
WSON4	SPST-NO (1a)	Surface-mounting Terminals	60 V	400 mA	G3VM-61YR	1 pc.	G3VM-61YR (TR05)	500 pcs.

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

Note: When ordering tape packing, add "(TR05)" (500 pcs/reel) to the model number.

Tape-cut S-VSON is packaged without humidity resistance. Use manual soldering to mount them.

Refer to common precautions.

G3VM-61YR

Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	G3VM-61YR	Unit	Measurement conditions
Input	LED forward current	IF	30	mA	
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.3	mA/°C	Ta ≥ 25°C
	LED reverse voltage	VR	6	V	
	Junction temperature	TJ	125	°C	
Output	Load voltage (AC peak/DC)	VOFF	60	V	
	Continuous load current (AC peak/DC)	IO	400	mA	
	ON current reduction rate	$\Delta I_O/^\circ\text{C}$	-4	mA/°C	Ta ≥ 25°C
	Pulse ON current	IOP	1.2	A	t = 100 ms, Duty = 1/10
	Junction temperature	TJ	125	°C	
Dielectric strength between I/O *1		VI-O	300	Vrms	AC for 1 min
Ambient operating temperature		Ta	-40 to +110	°C	With no icing or condensation
Ambient storage temperature		Tstg	-40 to +125	°C	
Soldering temperature		---	260	°C	10 s

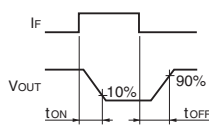
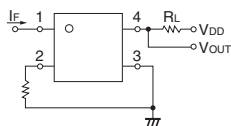
*1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

Note: In terms of its structure, this product is sensitive to static electricity. Therefore, be sure to take measures against static electricity for the workbenches, people, soldering iron, solder mounting equipment, etc.

Electrical Characteristics (Ta = 25°C)

Item		Symbol		G3VM-61YR	Unit	Measurement conditions
Input	LED forward voltage	V _F	Minimum	1.1	V	I _F = 10 mA
			Typical	1.24		
			Maximum	1.4		
	Reverse current	I _R	Maximum	10	μA	V _R = 5 V
	Capacitance between terminals	C _T	Typical	90	pF	V = 0 V, f = 1 MHz
	Trigger LED forward current	I _{FT}	Maximum	3	mA	I _O = 100 mA
Release LED forward current	I _{FC}	Minimum	0.1	mA	I _{OFF} = 10 μA	
Output	Maximum resistance with output ON	R _{ON}	Typical	1.1	Ω	I _F = 5 mA, t<1 s, I _O = 400 mA
			Maximum	1.5		
	Current leakage when the relay is open	I _{LEAK}	Maximum	1000 (1)	nA	V _{OFF} = 60 V (V _{OFF} = 50 V)
	Capacitance between terminals	C _{off}	Typical	12	pF	V = 0 V, f = 1 MHz, t<1 s
			Maximum	20		
Capacitance between I/O terminals		C _{I-O}	Typical	0.9	pF	V _S = 0 V, f = 1 MHz
Insulation resistance between I/O terminals		R _{I-O}	Typical	10 ⁸	MΩ	V _{I-O} = 300 VDC, R _{oH} ≤60%
Turn-ON time		t _{ON}	Typical	0.1 (0.05)	ms	I _F = 5 mA, R _L = 200 Ω, V _{DD} = 20 V *1 (I _F = 10 mA, R _L = 200 Ω, V _{DD} = 20 V) *1
			Maximum	0.25 (0.2)		
Turn-OFF time		t _{OFF}	Typical	0.05 (0.06)	ms	
			Maximum	0.2 (0.2)		

*1. Turn-ON and Turn-OFF Times



Recommended Operating Conditions

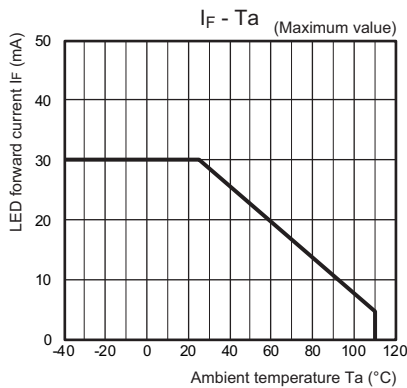
For usage with high reliability, Recommended Operation Conditions is a measure that takes into account the derating of Absolute Maximum Ratings and Electrical Characteristics.

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

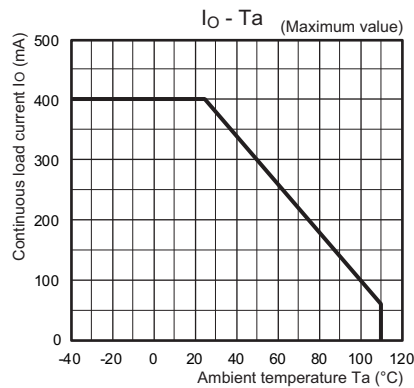
Item	Symbol		G3VM-61YR	Unit
Load voltage (AC peak/DC)	VDD	Maximum	48	V
Operating LED forward current	IF	Minimum	5	mA
		Typical	7.5	
		Maximum	20	
Continuous load current (AC peak/DC)	IO	Maximum	400	
Ambient operating temperature	Ta	Minimum	-20	°C
		Maximum	100	

Engineering Data

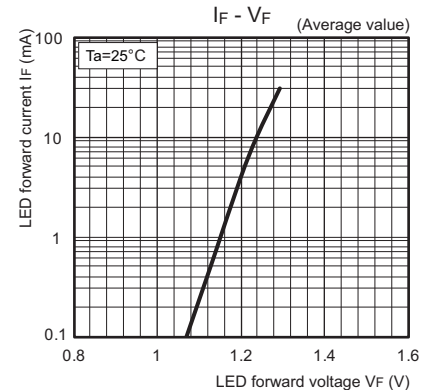
●LED forward current vs. Ambient temperature



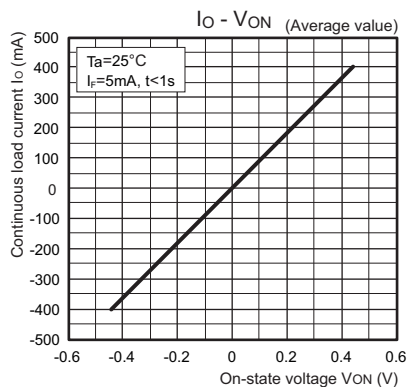
●Continuous load current vs. Ambient temperature



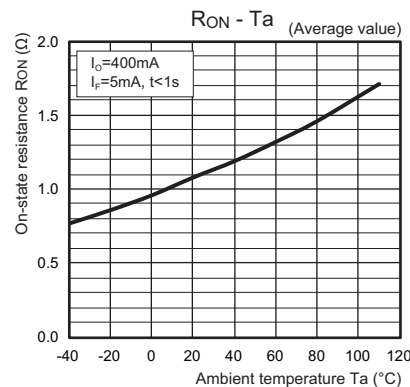
●LED forward current vs. LED forward voltage



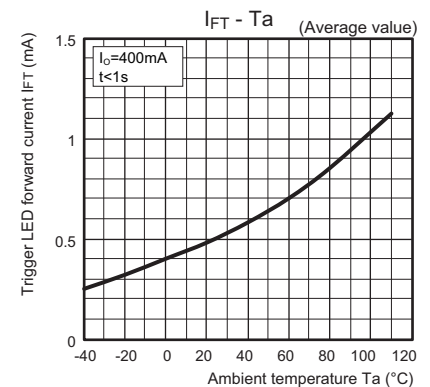
●Continuous load current vs. On-state voltage



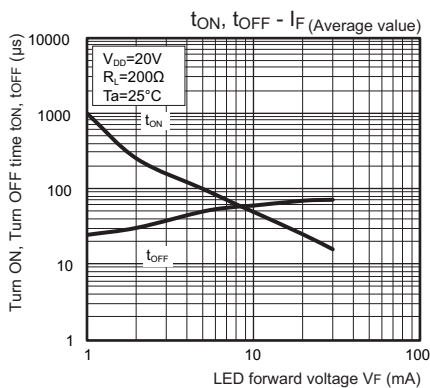
●On-state resistance vs. Ambient temperature



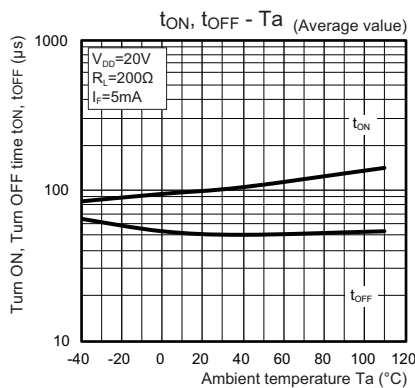
●Trigger LED forward current vs. Ambient temperature



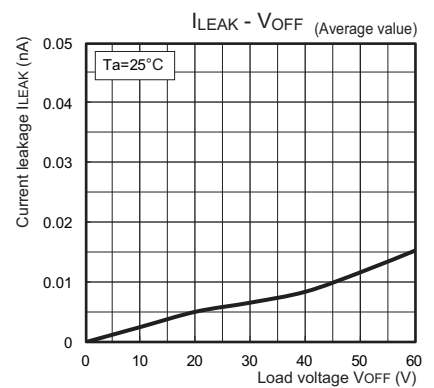
●Turn ON, Turn OFF time vs. LED forward current



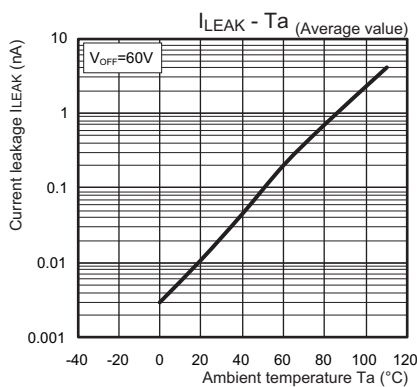
●Turn ON, Turn OFF time vs. Ambient temperature



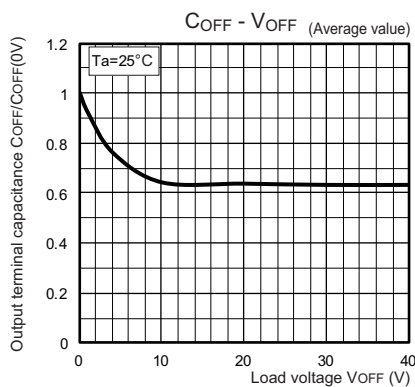
●Current leakage vs. Load voltage



●Current leakage vs. Ambient temperature



●Output terminal capacitance vs. Load voltage

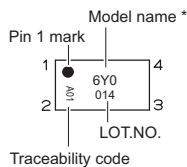


G3VM-61YR

Appearance / Terminal Arrangement / Internal Connections

●Appearance

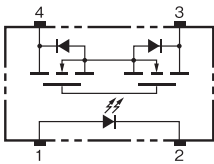
WSON (Very Very Small Outline Non-leaded)
WSON4 pin



* Actual model name marking
for each model

Model	Marking
G3VM-61YR	6Y0

●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.

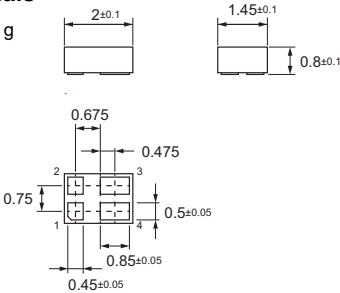
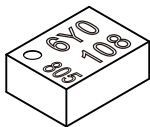
Dimensions

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)

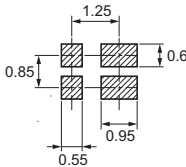
Surface-mounting Terminals

Weight: 0.01 g



Actual Mounting Pad Dimensions

(Recommended Value, Top View)



Note: Unless otherwise specified, the dimensional tolerance is ± 0.1 mm.

CAD Data

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

Safety Precautions

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

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