

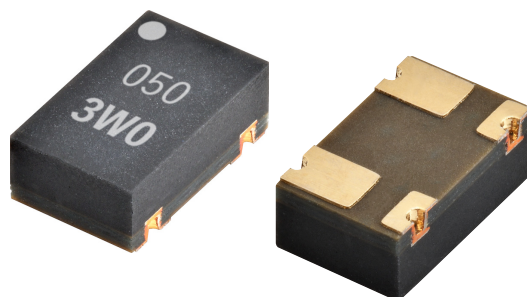
G3VM-□WR

MOS FET Relays

P-SON 4-pin, High-Current and Low-ON-Resistance Type

New Non-Leaded, High-Current P-SON Package

- Load voltages 30 V/60 V/100 V/200 V.
- 30 V relay: Continuous load current of 4.5 A max.
- 60 V relay: Continuous load current of 3 A max.
- 100 V relay: Continuous load current of 2 A max.
- 200 V relay: Continuous load current of 0.35 A max.
- High ambient operating temperature: -40°C to +110°C



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

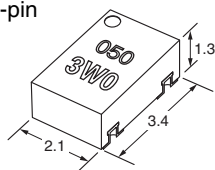
RoHS Compliant

Application Examples

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

Package (Unit : mm, average)

P-SON 4-pin



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

Model Number Legend

G3VM-□□□□
1 2 3 4

1. Load voltages

3: 30 V
6: 60 V
10: 100 V
20: 200 V

2. Contact form

1: 1a (SPST-NO)

3. Package type

W: P-SON 4-pin

4. Additional function

R: Low on-resistance

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
P-SON4	1a (SPST-NO)	Surface-mounting Terminals	30 V	4.5 A	G3VM-31WR	1 pc.	G3VM-31WR (TR05)	500 pcs.
			60 V	3 A	G3VM-61WR		G3VM-61WR (TR05)	
			100 V	2 A	G3VM-101WR		G3VM-101WR (TR05)	
			200 V	0.35 A	G3VM-201WR		G3VM-201WR (TR05)	

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

Note: When ordering tape packing, add "(TR05)" (500 pcs/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 P-SON is packaged without humidity resistance. Use manual soldering to mount them.

Refer to common precautions.

G3VM-□WR

P-SON

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	G3VM-31WR	G3VM-61WR	G3VM-101WR	G3VM-201WR	Unit	Measurement conditions
Input	LED forward current	30				mA	
	LED forward current reduction rate	-0.3				mA/°C	Ta≥25°C
	LED reverse voltage	6				V	
	Junction temperature	125				°C	
Output	Load voltage (AC peak/DC)	30	60	100	200	V	
	Continuous load current (AC peak/DC)	4.5	3	2	0.35	A	
	ON current reduction rate	-45	-30	-20	-3.5	mA/°C	Ta≥25°C
	Pulse ON current	10	9	6	1.05	A	t=100 ms, Duty=1/10
	Junction temperature	125				°C	
	Dielectric strength between I/O *	500				Vrms	AC for 1 min
Ambient operating temperature		-40 to +110				°C	With no icing or condensation
Ambient storage temperature		-40 to +125				°C	
Soldering temperature		260				°C	10 s

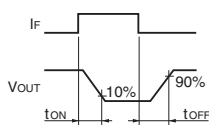
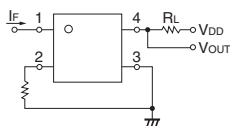
Note: The product structure is sensitive to static electricity. When handling it, be sure to take measures against static electricity for the workbench, workers, soldering iron, and soldered mounted devices.

* 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-31WR	G3VM-61WR	G3VM-101WR	G3VM-201WR	Unit	Measurement conditions	
Input	LED forward voltage	V _F	Minimum	1.1			V	I _F =10 mA	
			Typical	1.22					
			Maximum	1.4					
	Reverse current	I _R	Maximum	10			μA	V _R =5 V	
	Capacitance between terminals	C _T	Typical	70			pF	V=0 V, f=1 MHz	
	Trigger LED forward current	I _{FT}	Typical	1	0.9	1	mA	I _O =1 A (G3VM-31WR/61WR/101WR) I _O =0.35 A (G3VM-201WR)	
			Maximum	3					
Release LED forward current	I _{FC}	Minimum	0.1			mA	I _{OFF} =10 μA		
		Typical	0.9		0.8			0.9	
Output	Maximum resistance with output ON	R _{ON}	Typical	25	45	130	4,500	mΩ	I _O =Continuous load current rated value I _F =5 mA, t<1 s
			Maximum	50	100	200	8,000		
	Current leakage when the relay is open	I _{LEAK}	Maximum	1000 (10)			10	nA	V _{OFF} = Load voltage rated value 31WR : (V _{OFF} =20 V) 61WR : (V _{OFF} =40 V) 101WR : (V _{OFF} =80 V)
	Capacitance between terminals	C _{off}	Typical	450	250	170	75	pF	V=0 V, f=1 MHz
	Capacitance between I/O terminals	C _{I-O}	Typical	1			pF	f=1 MHz, V _S =0 V	
	Insulation resistance between I/O terminals	R _{I-O}	Typical	10 ⁸			MΩ	V _{I-O} =500 VDC, R _{oH} ≤60%	
Turn-ON time	t _{ON}	Typical	3		2	0.5	ms	I _F =5 mA, R _L =200 Ω, V _{DD} =10 V (G3VM-31WR) V _{DD} =20 V (G3VM-61WR/101WR/201WR) *	
		Maximum	5		3	1			
Turn-OFF time	t _{OFF}	Typical	0.04		0.03	0.04			
		Maximum	1						

* Turn-ON and Turn-OFF Times



Recommended Operating Conditions

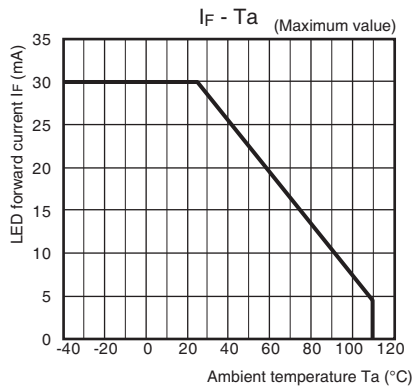
For high reliability usage, Recommended Operation Conditions are measures that take into account the derating of Absolute Maximum Ratings and Electrical Characteristics.

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

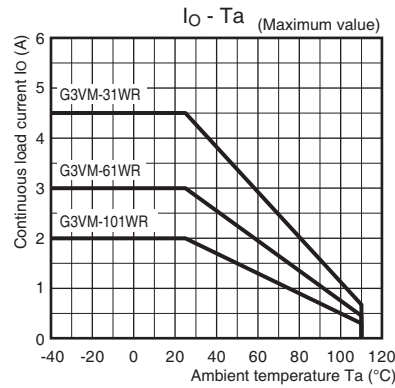
Item	Symbol		G3VM-31WR	G3VM-61WR	G3VM-101WR	G3VM-201WR	Unit
Load voltage (AC peak/DC)	V _{DD}	Maximum	24	48	80	160	V
Operating LED forward current	I _F	Typical	5				mA
		Maximum	20				
Continuous load current (AC peak/DC)	I _O	Maximum	4.5	3	2	0.35	A
Ambient operating temperature	T _a	Minimum	−20				°C
		Maximum	85				

Engineering Data

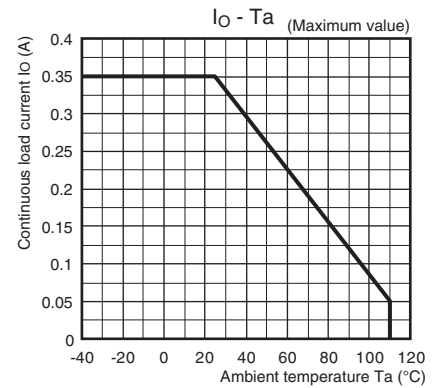
LED forward current vs. ambient temperature



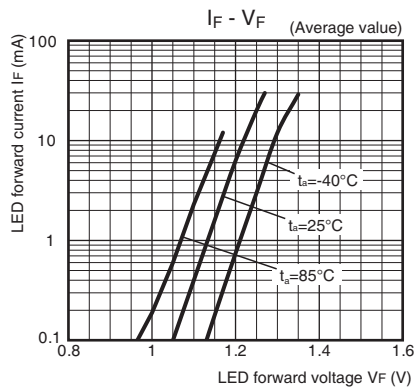
Continuous load current vs. ambient temperature



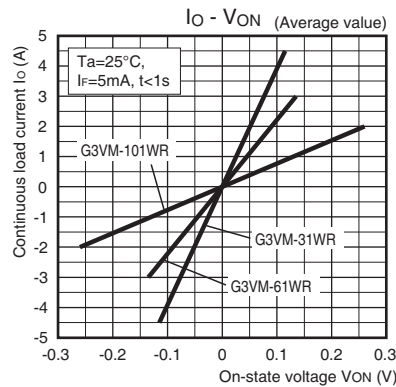
G3VM-201WR



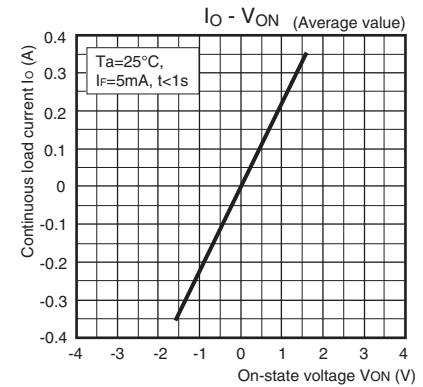
LED forward current vs. LED forward voltage



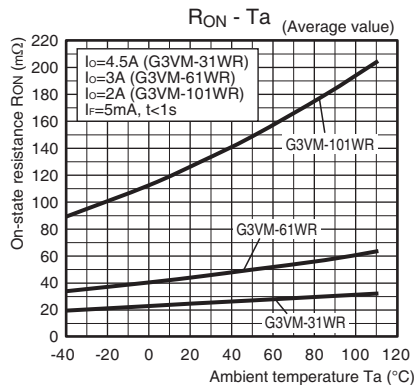
Continuous load current vs. on-state voltage



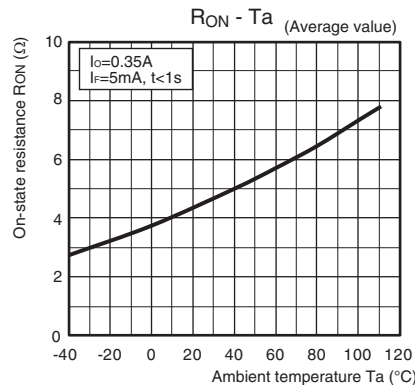
G3VM-201WR



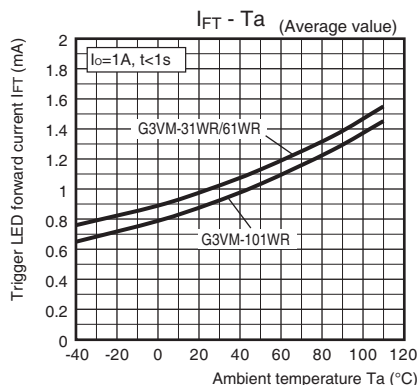
On-state resistance vs. ambient temperature



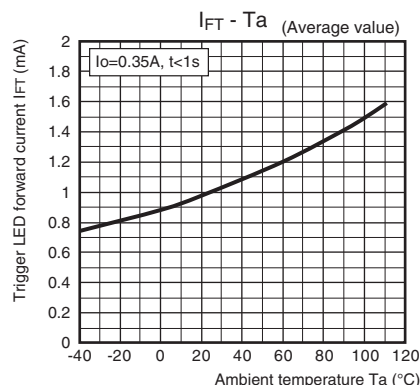
G3VM-201WR



Trigger LED forward current vs. ambient temperature

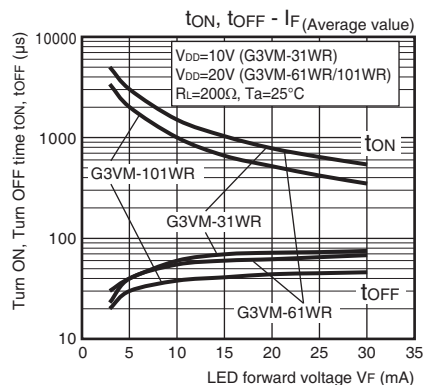


G3VM-201WR

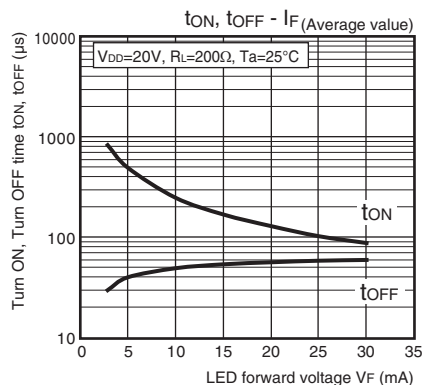


Engineering Data

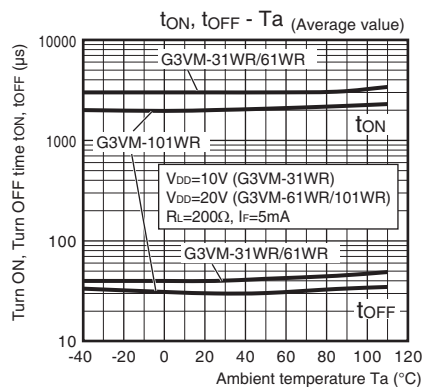
Turn ON, turn OFF time vs. LED forward current G3VM-31WR/61WR/101WR



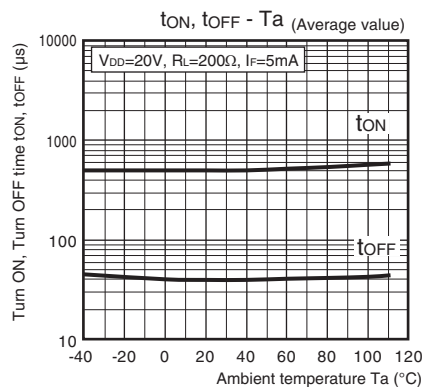
G3VM-201WR



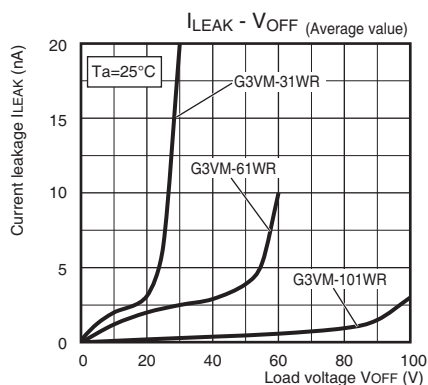
Turn ON, turn OFF time vs. ambient temperature G3VM-31WR/61WR/101WR



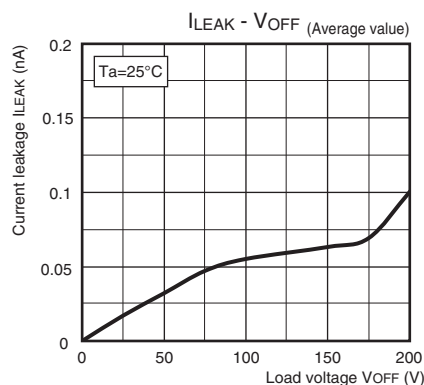
G3VM-201WR



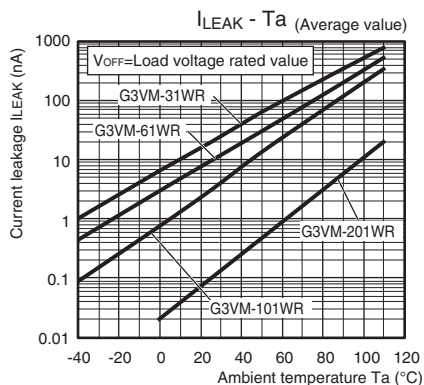
Current leakage vs. load voltage G3VM-31WR/61WR/101WR



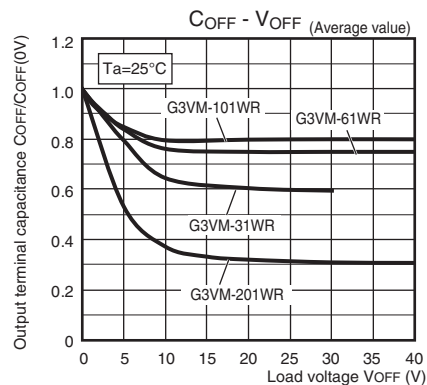
G3VM-201WR



Current leakage vs. ambient temperature



Output terminal capacitance vs. load voltage

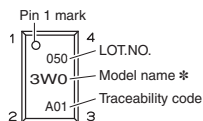


■Appearance / Terminal Arrangement / Internal Connections

■Appearance

P-SON (Power - Small Outline Non-Leaded)

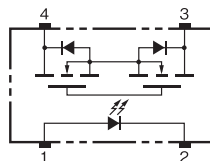
P-SON 4-pin



* Actual model name marking for each model

Model	Marking
G3VM-31WR	3W0
G3VM-61WR	6W0
G3VM-101WR	AW0
G3VM-201WR	BW0

■Terminal Arrangement/Internal Connections (Top View)

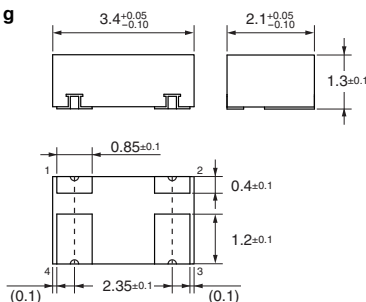
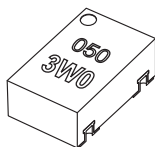


Note 1. The actual product is marked differently from the image shown above.
2. "G3VM" does not appear in the model number on the relay.

■Dimensions (Unit: mm)

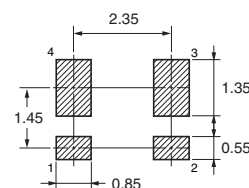
Surface-Mounting Terminals

Weight: 0.02 g



Actual Mounting Pad Dimensions

(Recommended Value, Top View)



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

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

■Safety Precautions

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

Please check each region's Terms & Conditions by region website.

OMRON Corporation

Electronic and Mechanical Components Company

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