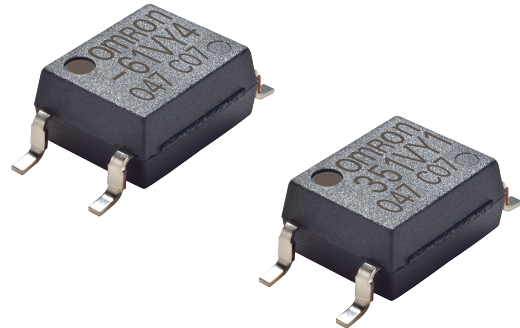


G3VM-61VY4/351VY1

MOS FET Relays SOP 4-pin, General-purpose Type

High-sensitivity MOS FET relays in SOP 4-pin packages contribute to equipment power consumption reduction

- Contact form: 1a (SPST-NO)
- Load voltage: 60/350 V
- High-sensitivity type * Driving current: 2.0 mA (recommended condition)



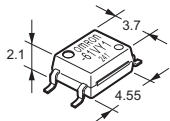
Note: The actual product is marked differently from the image shown here.

Application Examples

- Semiconductor test equipment
- Test & Measurement equipment
- Communication equipment
- Security equipment
- Industrial equipment
- Power circuit
- Amusement equipment

Package (Unit: mm, Average)

Special 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

6 : 60 V
35 : 350 V

2. Contact form

1 : 1a (SPST-NO)

3. Package

V : Special SOP 4-pin

4. Additional functions

Y : Dielectric strength between I/O 3,750 V

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) *	Stick packaging		Tape packaging	
					Model	Minimum package quantity	Model	Minimum package quantity
Special SOP 4-pin	1a (SPST-NO)	Surface mounting Terminals	60 V	700 mA	G3VM-61VY4	125 pcs.	G3VM-61VY4(TR05)	500 pcs.
			350 V	110 mA	G3VM-351VY1		G3VM-351VY1(TR05)	

* 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 "(TR05)" to the end of the model number.

G3VM-61VY4/351VY1

Absolute Maximum Ratings (Ta = 25°C)

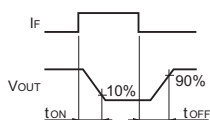
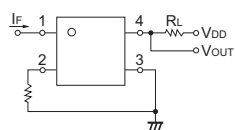
Item		Symbol	G3VM-61VY4	G3VM-351VY1	Unit	Measurement conditions	
Input	LED forward current	I_F	30		mA	$T_a \geq 25^\circ\text{C}$	
	LED forward current reduction rate	$\Delta I_F / ^\circ\text{C}$	-0.3		mA/ $^\circ\text{C}$		
	LED reverse voltage	V_R	6		V		
	Junction temperature	T_J	125		$^\circ\text{C}$		
Output	Load voltage (AC peak/DC)	V_{OFF}	60	350	V	G3VM-61VY4 : $T_a \geq 50^\circ\text{C}$ G3VM-351VY1: $T_a \geq 25^\circ\text{C}$	
	Continuous load current (AC peak/DC)	I_o	700	110	mA		
	ON current reduction rate	$\Delta I_o / ^\circ\text{C}$	-8.3	-1.1	mA/ $^\circ\text{C}$		
	Pulse ON current	I_{op}	2.1	0.33	A		$t = 100 \text{ ms}$, Duty=1/10
	Junction temperature	T_J	125		$^\circ\text{C}$		
Dielectric strength between I/O *		V_{I-O}	3,750		Vrms	AC for 1 min	
Ambient operating temperature		T_a	-40 to +85		$^\circ\text{C}$	With no icing or condensation	
Ambient storage temperature		T_{stg}	-55 to +125				
Soldering temperature		-	260				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-61VY4	G3VM-351VY1	Unit	Measurement conditions	
Input	LED forward voltage	V_F	Minimum	1.1		V	$I_F = 10 \text{ mA}$
			Typical	1.27			
			Maximum	1.4			
	Reverse current	I_R	Maximum	10		μA	$V_R = 5 \text{ V}$
	Capacitance between terminals	C_T	Typical	30		pF	$V = 0 \text{ V}$, $f = 1 \text{ MHz}$
	Trigger LED forward current	I_{FT}	Typical	0.1	0.2	mA	$I_o = \text{Continuous load current rated value}$
Maximum			1				
Release LED forward current	I_{FC}	Minimum	0.01		mA	G3VM-61VY4 : $I_{OFF} = 10 \mu\text{A}$ G3VM-351VY1: $I_{OFF} = 100 \mu\text{A}$	
Output	Maximum resistance with output ON	R_{ON}	Typical	0.15	28 (22)	Ω	$I_F = 2 \text{ mA}$, $I_o = \text{Continuous load current rated value}$ () is a value within $t < 1 \text{ s}$.
			Maximum	0.3	50 (35)		
	Current leakage when the relay is open	I_{LEAK}	Typical	2	1	nA	$V_{OFF} = \text{Load voltage rated value}$
Maximum	1,000						
Capacitance between terminal	C_{OFF}	Typical	100	30	pF	$V = 0 \text{ V}$, $f = 1 \text{ MHz}$	
Capacitance between I/O terminals		C_{I-O}	Typical 0.8		pF	$V_S = 0 \text{ V}$, $f = 1 \text{ MHz}$	
Insulation resistance between I/O terminals		R_{I-O}	Minimum	1,000		M Ω	$V_{I-O} = 500 \text{ VDC}$, $R_oH \leq 60\%$
			Typical	10^8			
Turn-ON time		t_{ON}	Typical	3	1	ms	$I_F = 2 \text{ mA}$, $R_L = 200 \Omega$, $V_{DD} = 20 \text{ V}$ *
			Maximum	6	2		
Turn-OFF time		t_{OFF}	Typical	0.4	0.5		
			Maximum	1	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-61VY4	G3VM-351VY1	Unit
Load voltage (AC peak/DC)	V_{DD}	Maximum	48	280	V
Operating LED forward current	I_F	Minimum	-		mA
		Typical	2		
		Maximum	25		
Continuous load current (AC peak/DC)	I_o	Maximum	700	110	
Ambient operating temperature	T_a	Minimum	-40		°C
		Maximum	85		

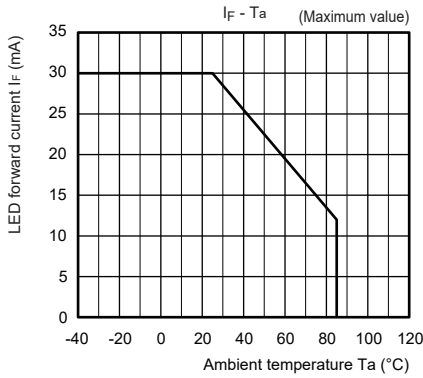
Spacing and Insulation

Item	G3VM-61VY4	G3VM-351VY1	Unit
	Minimum		
Creepage distances	5.0		mm
Clearance distances	5.0		
Internal isolation thickness	0.2		

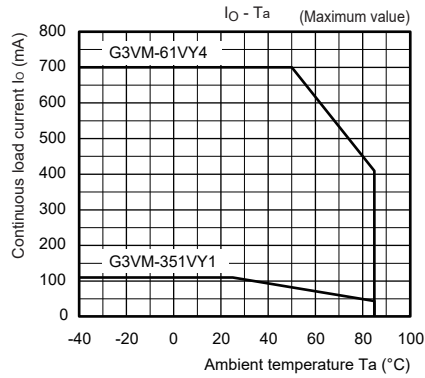
G3VM-61VY4/351VY1

Engineering Data

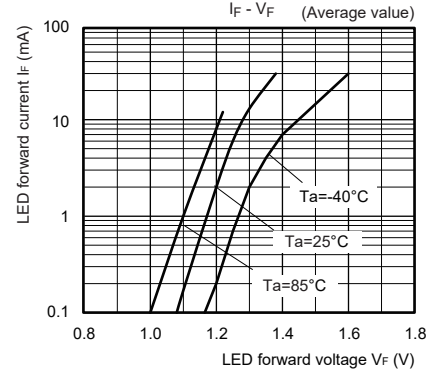
LED forward current vs. Ambient temperature



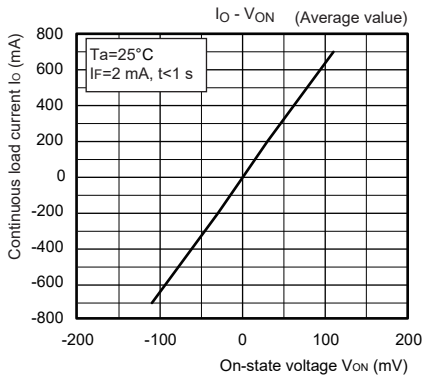
Continuous load current vs. Ambient temperature



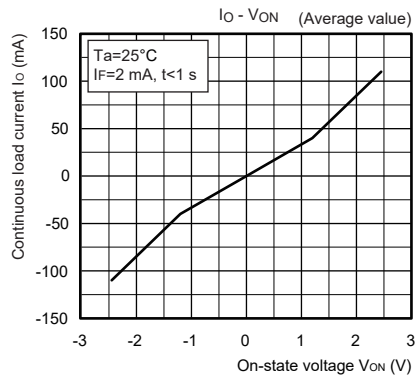
LED forward current vs. LED forward voltage



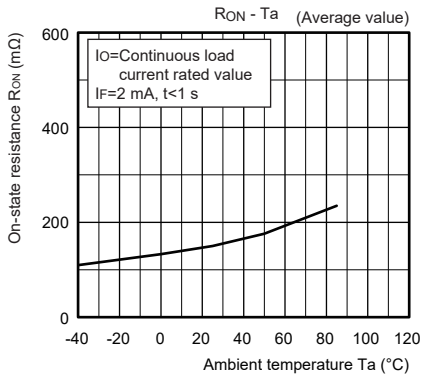
Continuous load current vs. On-state voltage
G3VM-61VY4



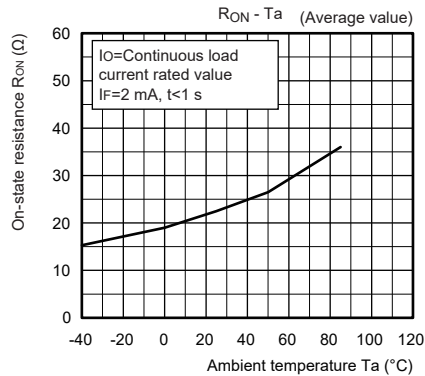
G3VM-351VY1



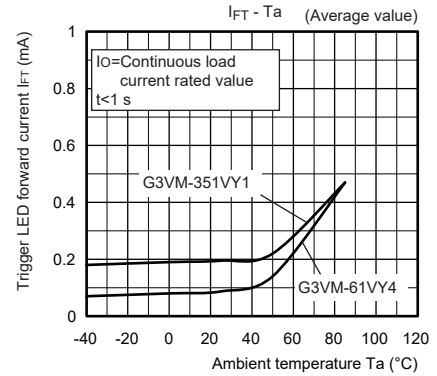
On-state resistance vs. Ambient temperature
G3VM-61VY4



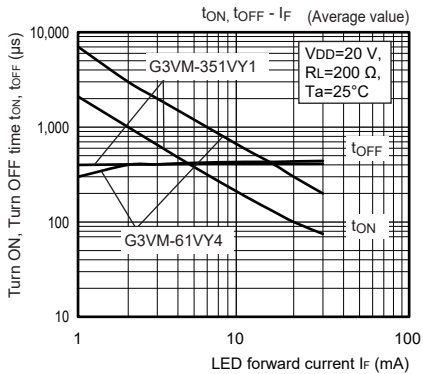
G3VM-351VY1



Trigger LED forward current vs. Ambient temperature

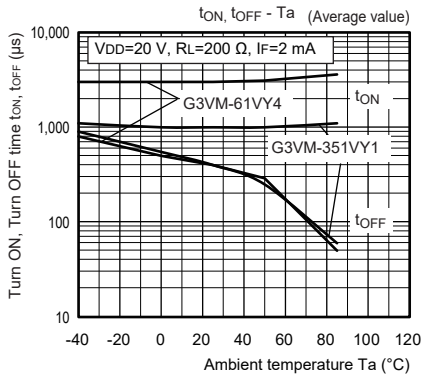


Turn ON, Turn OFF time vs. LED forward current

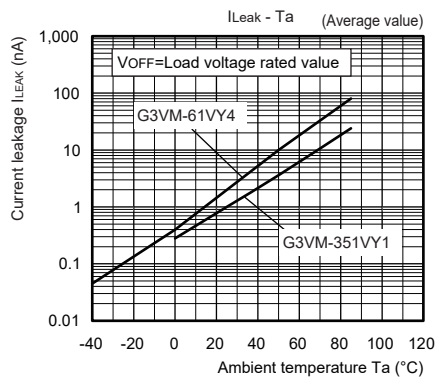


Engineering Data

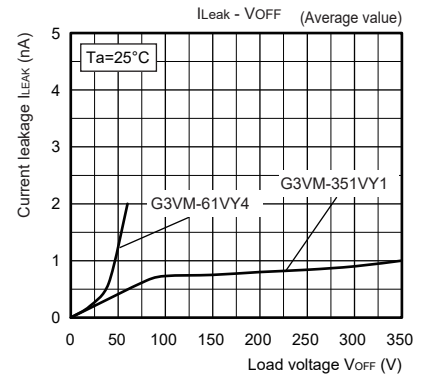
Turn ON, Turn OFF time vs. Ambient temperature



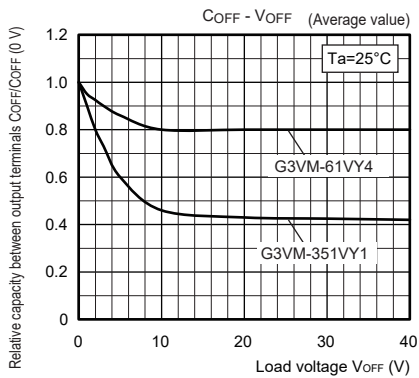
Current leakage vs. Ambient temperature



Current leakage vs. Load voltage



Relative capacity between output terminals vs. Load voltage

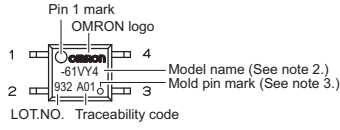


G3VM-61VY4/351VY1

Appearance/Terminal Arrangement/Internal Connections

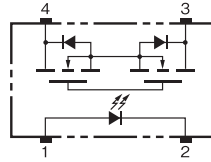
Appearance

Special SOP 4-pin



- 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.

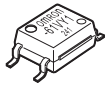
Terminal Arrangement/Internal Connections (Top View)



Dimensions

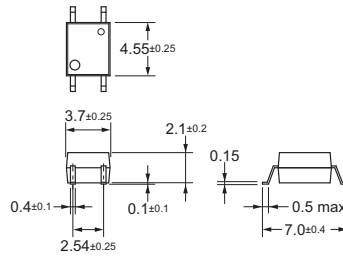
(Unit: mm)

Special SOP 4-pin *

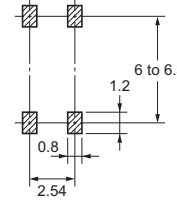


Surface-mounting Terminals

Weight: 0.1 g




Actual Mounting Pad Dimensions (Recommended Value, Top View)



- * The external dimensions are different from those of the standard SOP 4-pin, but the mounting pad dimensions are the same.
- Note:** The actual product is marked differently from the image shown here.

Approved Standards

UL recognized 

Model	Approved Standards	Contact form	File No.
G3VM-61VY4 G3VM-351VY1	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.

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