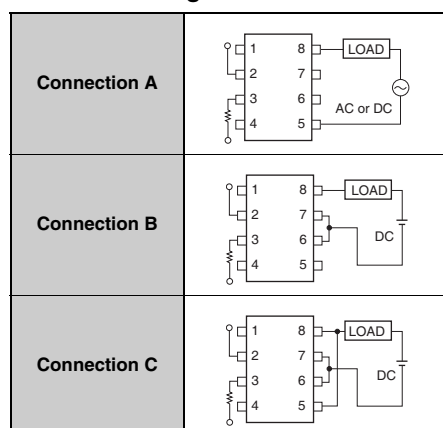


■Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	G3VM-61CR1 G3VM-61FR1	G3VM-101CR G3VM-101FR	G3VM-201CR G3VM-201FR	G3VM-401CR G3VM-401FR	G3VM-601CR G3VM-601FR	Unit	Measurement conditions	
Input	LED forward current	I _F	30					mA		
	Repetitive peak LED forward current	I _{FP}	1					A	100 μs pulses, 100 pps	
	LED forward current reduction rate	ΔI _F /°C	-0.3					mA/°C	Ta ≥ 25°C	
	LED reverse voltage	V _R	5					V		
	Connection temperature	T _J	125					°C		
Output	Load voltage (AC peak/DC)		V _{OFF}	60	100	200	400	600	V	
	Continuous load current	Connection A	I _O	5	3	1.5	0.4	0.6	A	Connection A: AC peak/DC Connection B and C: DC
		Connection B		5	3	1.5	0.4	0.6		
		Connection C		10	6	3	0.8	1.2		
	ON current reduction rate	Connection A	ΔI _O /°C	-50	-30	-15	-4	-6	mA/°C	Ta ≥ 25°C
		Connection B		-50	-30	-15	-4	-6		
		Connection C		-100	-60	-30	-8	-12		
	Pulse ON current		I _{OP}	15	9	4.5	1.2	1.8	A	t=100 ms, Duty=1/10
	Connection temperature		T _J	125					°C	
Dielectric strength between I/O *		V _{I-O}	2,500					V _{RMS}	AC for 1 min	
Ambient operating temperature		T _a	-40 to +85	-40 to +110		-40 to +85		°C	With no icing or condensation	
Ambient storage temperature		T _{stg}	-55 to +125					°C		
Soldering temperature		—	260					°C	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.

Connection Diagram



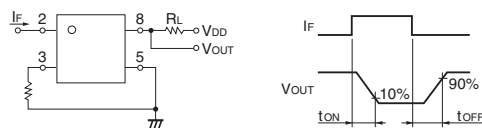
DIP

G3VM-□CR□/□FR□

■Electrical Characteristics (Ta = 25°C)

Item			Symbol		G3VM-61CR1 G3VM-61FR1	G3VM-101CR G3VM-101FR	G3VM-201CR G3VM-201FR	G3VM-401CR G3VM-401FR	G3VM-601CR G3VM-601FR	Unit	Measurement conditions	
Input	LED forward voltage		V _F	Minimum	1.5					V	I _F =10 mA	
				Typical	1.64							
				Maximum	1.8							
	Reverse current		I _R	Maximum	10					μA	V _R =5 V	
	Capacitance between terminals		C _T	Typical	70					pF	V=0, f=1MHz	
	Trigger LED forward current		I _{FT}	Typical	0.28	0.3	0.3	0.2	0.23	mA	G3VM-61CR1/FR1 : I _o =1 A G3VM-101CR/FR : I _o =1 A G3VM-201CR/FR : I _o =1 A G3VM-401CR/FR : I _o =0.4 A G3VM-601CR/FR : I _o =0.6 A	
				Maximum	5	5	5	1	5			
Release LED forward current		I _{FC}	Minimum	0.01					mA	G3VM-61CR1/FR1 : I _{OFF} =1 μA G3VM-101CR/FR : I _{OFF} =1 μA G3VM-201CR/FR : I _{OFF} =1 μA G3VM-401CR/FR : I _{OFF} =10 μA G3VM-601CR/FR : I _{OFF} =1 μA		
			Typical	0.19	-		0.19	0.17				
Output	Maximum resistance with output ON		Connection A	R _{ON}	Typical	0.022	0.06	0.25	3	1.3	Ω	G3VM-61CR1/FR1 : I _o =1 A, I _F =5 mA, t < 1 s G3VM-101CR/FR : I _o =1 A, I _F =5 mA, t < 1 s G3VM-201CR/FR : I _o =1 A, I _F =5 mA, t < 1 s G3VM-401CR/FR : I _o =0.4 A, I _F =2 mA, t < 1 s G3VM-601CR/FR : I _o =0.6 A, I _F =5 mA, t < 1 s
					Maximum	0.05	0.15	0.5	5	2		
			Connection B	Maximum	0.025	0.075	0.25	2.5	1	G3VM-61CR1/FR1 : I _o =1 A, I _F =2 mA, t < 1 s G3VM-101CR/FR : I _o =1 A, I _F =5 mA, t < 1 s G3VM-201CR/FR : I _o =1 A, I _F =5 mA, t < 1 s G3VM-401CR/FR : I _o =0.4 A, I _F =2 mA, t < 1 s G3VM-601CR/FR : I _o =0.6 A, I _F =2 mA, t < 1 s		
					Connection C	Maximum	0.013	0.038	0.125			
	Current leakage when the relay is open		I _{LEAK}	Typical			0.01	0.02	0.1	0.001	0.05	μA
				Maximum	10	1	1	1	10			
	Capacitance between terminals		C _{OFF}	Typical	850	720	400	410	4,300	pF	V=0, f=1 MHz	
Capacitance between I/O terminals			C _{I-O}	Typical	0.8					pF	f=1 MHz, V _S =0 V	
Insulation resistance between I/O terminals			R _{I-O}	Minimum	1,000					MΩ	V _{I-O} =500 VDC, R _{oH} ≤60%	
				Typical	10 ⁸							
Turn-ON time			t _{ON}	Typical	2.5	1.5	0.25	0.22	0.8	ms	I _F =5 mA, R _L =200 Ω, V _{DD} =20 V *	
				Maximum	5			1	3			
Turn-OFF time			t _{OFF}	Typical	0.1			0.08	0.07			
				Maximum	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.

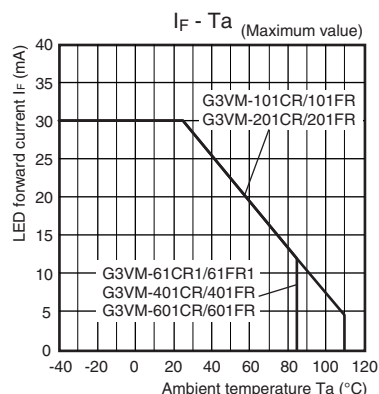
Item	Symbol		G3VM-61CR1 G3VM-61FR1	G3VM-101CR G3VM-101FR	G3VM-201CR G3VM-201FR	G3VM-401CR G3VM-401FR	G3VM-601CR G3VM-601FR	Unit
Load voltage (AC peak/DC)	V _{BD}	Maximum	48	80	160	320	480	V
Operating LED forward current	I _F	Typical	5	5	5	2	5	mA
		Maximum	25					
Continuous load current (AC peak/DC)	I _o	Maximum	5	3	1.5	0.4	0.6	A
Ambient operating temperature	T _a	Minimum	-40					°C
		Maximum	85					

■Spacing and Insulation

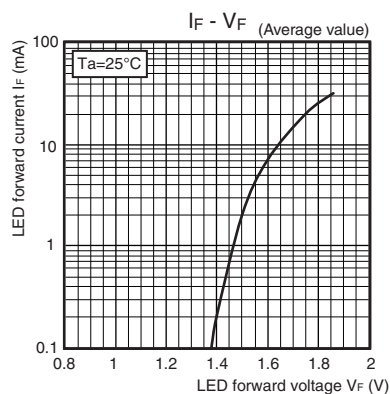
Item	Minimum	Unit
Creepage distances	7.0	mm
Clearance distances	7.0	
Internal isolation thickness	0.4	

Engineering Data

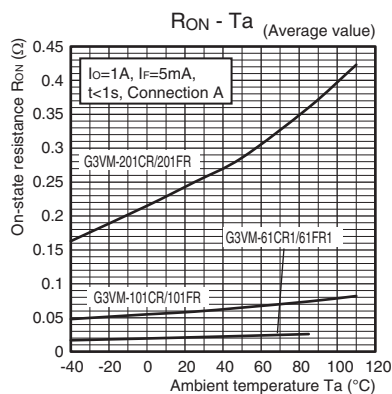
LED forward current vs. Ambient temperature



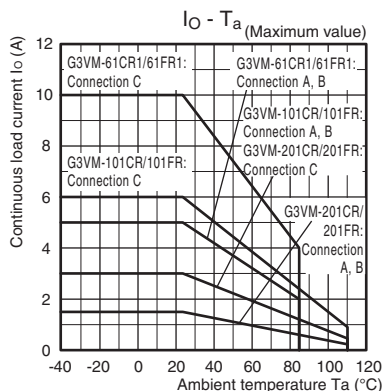
LED forward current vs. LED forward voltage



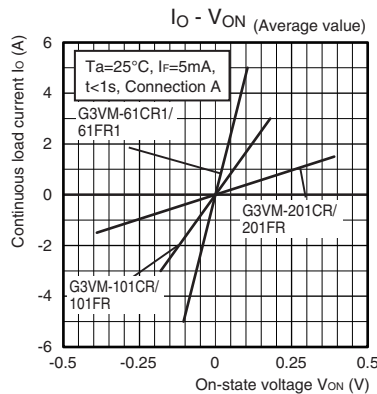
On-state resistance vs. Ambient temperature



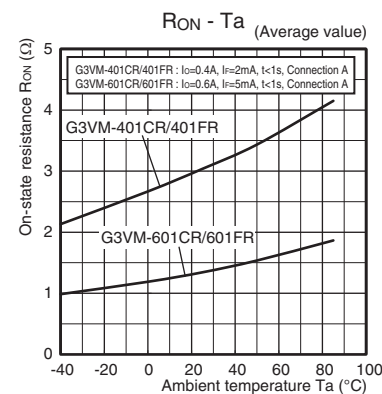
Continuous load current vs. Ambient temperature



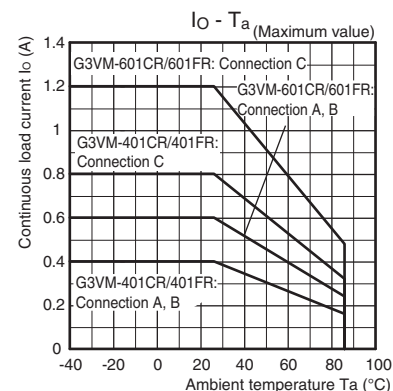
Continuous load current vs. On-state voltage



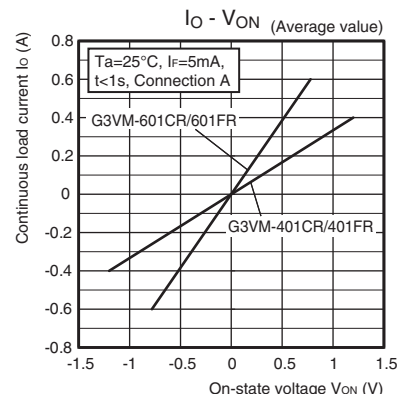
Continuous load current vs. On-state voltage



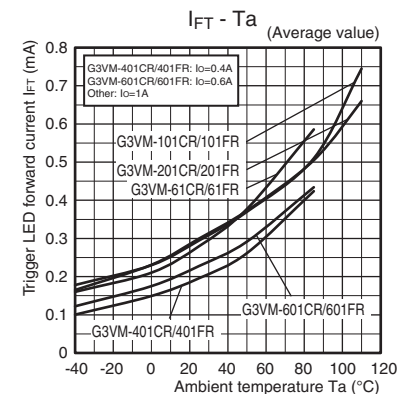
Continuous load current vs. Ambient temperature



Continuous load current vs. On-state voltage



Trigger LED forward current vs. Ambient temperature



DIP

G3VM-□CR□/□FR□

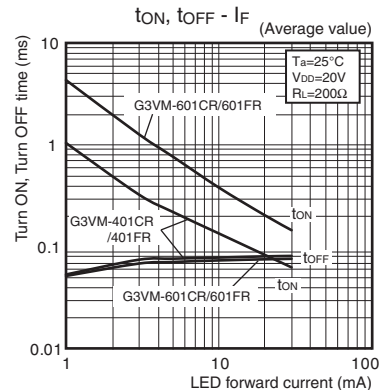
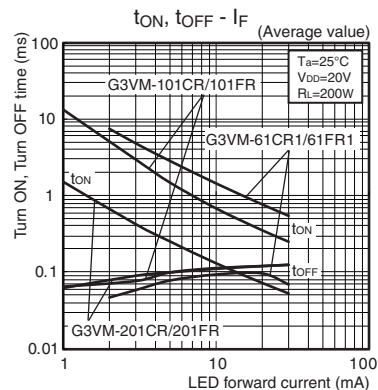
Engineering Data

Turn ON, Turn OFF time vs. LED forward current

G3VM-61CR1/61FR1

G3VM-401CR/401FR/601CR/601FR

G3VM-101CR/101FR/201CR/201FR

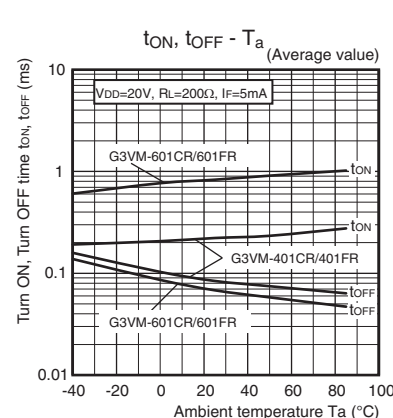
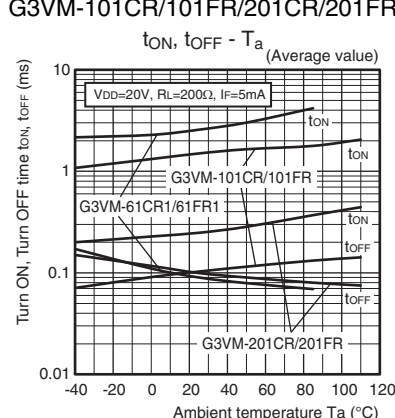


Turn ON, Turn OFF time vs. Ambient temperature

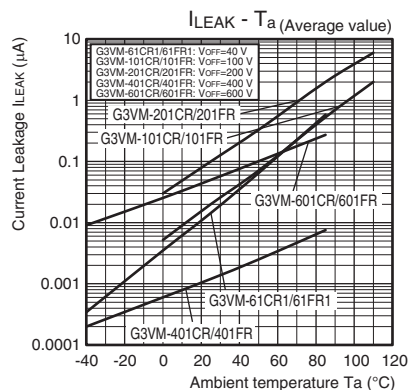
G3VM-61CR1/61FR1

G3VM-401CR/401FR/601CR/601FR

G3VM-101CR/101FR/201CR/201FR



Current leakage vs. Ambient temperature

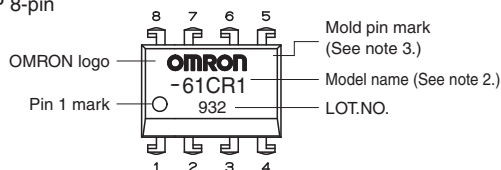


Appearance / Terminal Arrangement / Internal Connections

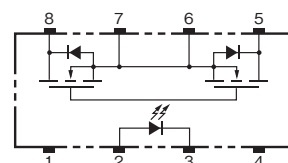
Appearance

DIP (Dual Inline Package)

DIP 8-pin



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.

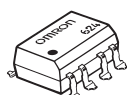
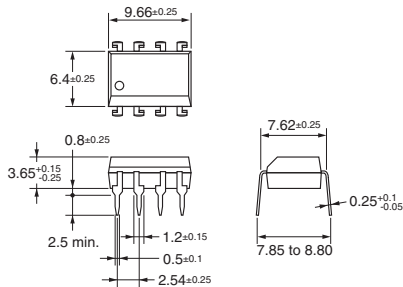
Note: 3. The indentation in the corner diagonally opposite from the pin 1 mark is from a pin on the mold.

■Dimensions (Unit: mm)

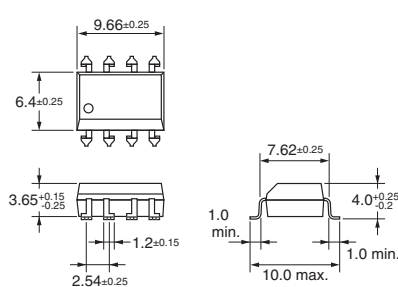
DIP 8-pin



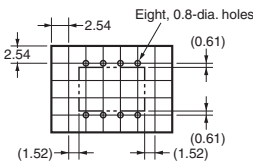
PCB Terminals
Weight: 0.54 g



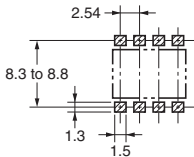
Surface-mounting Terminals
Weight: 0.54 g



PCB Dimensions (BOTTOM VIEW)



Actual Mounting Pad Dimensions
(Recommended Value, Top View)



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

■Approved Standards

UL recognized 

Model	Approved Standards	Contact form	File No.
G3VM-61CR1 G3VM-61FR1	UL (recognized)	1a (SPST-NO)	E80555
G3VM-101CR G3VM-101FR			
G3VM-201CR G3VM-201FR			
G3VM-401CR G3VM-401FR			
G3VM-601CR G3VM-601FR			
G3VM-601CR G3VM-601FR			

■Safety Precautions

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

DIP

G3VM-□CR□/□FR□

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