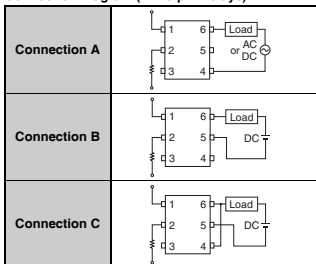


■ Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	G3VM-61A1 G3VM-61D1	G3VM-61B1 G3VM-61E1	G3VM-351A G3VM-351D	G3VM-351B G3VM-351E	G3VM-353A G3VM-353D	G3VM-353B G3VM-353E	G3VM-401A G3VM-401D	G3VM-401B G3VM-401E	Unit	Measurement conditions
Input	LED forward current	IF	50								mA	
	Repetitive peak LED forward current	IFP	1								A	100 μs pulses, 100 pps
	LED forward current reduction rate	ΔIF/°C	-0.5								mA/°C	Ta ≥ 25°C
	LED reverse voltage	VR	5								V	
	Connection temperature	TJ	125								°C	
Load voltage (AC peak/DC)		VOff	60		350			400		V		
Output	Continuous load current (AC peak/DC)	Connection A	500		120		150		120		mA	Connection A: AC peak/DC Connection B and C: DC
		Connection B	500		120		150		120			
		Connection C	1000		240		300		240			
	ON current reduction rate	Connection A	-5		-1.2		-1.5		-1.2		mA/°C	Ta ≥ 25°C
		Connection B	-5		-1.2		-1.5		-1.2			
Pulse ON current	Connection C	-10		-2.4		-3		-2.4		A	t=100 ms, Duty=1/10	
	Connection temperature	TJ	1.5		0.36		0.45		0.36			°C
Dielectric strength between I/O (See note 1.)		VI-o	2,500				2,500		2,500		Vrms	AC for 1 min
Ambient operating temperature		Ta	-40 to +85								°C	With no icing or condensation
Ambient storage temperature		Tstg	-55 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.

Connection Diagram (DIP 6-pin Relays)

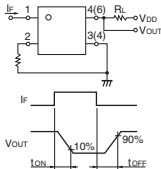


Electrical Characteristics (Ta = 25°C)

Item	Symbol	G3VM-61A1		G3VM-61B1		G3VM-351A		G3VM-351B		G3VM-353A		G3VM-353B		G3VM-401A		G3VM-401B		Unit	Measurement conditions
		G3VM-61D1	G3VM-61E1	G3VM-351D	G3VM-351E	G3VM-353D	G3VM-353E	G3VM-401D	G3VM-401E										
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
		Typical		30															
Capacitance between terminals	C _T	Typical		1.6														pF	V=0, f=1 MHz
		Maximum		3															
Trigger LED forward current	I _{FT} (I _{FC}) (See note 3.)	Typical		1														mA	G3VM-353A/353D/353B/353E : I _{OFF} =10 μA Others : I _o =Continuous load current ratings
		Maximum		0.1															
Release LED forward current	I _{FC} (I _{FT}) (See note 3.)	Minimum		0.1														mA	G3VM-353A/353D/353B/353E : I _o =150 mA Others : I _{OFF} =100 μA
		Maximum		10															
Maximum resistance with output ON	R _{ON}	Typical	Connection A		1		35 (25)		15		18		17		Ω		G3VM-61A1/61D1/61B1/61E1/351A/351D/351B/351E/401A/401D/401B/401E : I _F =5 mA, I _o =Continuous load current ratings Values in parentheses are for t < 1 s. G3VM-353A/353D/353B/353E : I _o =Continuous load current ratings		
			Connection B		0.5		28		8		11								
			Connection C		0.25		14		4		6								
		Maximum	Connection A		2		50 (35)		25		35								
			Connection B		1		40		14		20								
			Connection C		-		20		7		10								
Current leakage when the relay is open	I _{LEAK}	Maximum		1														μA	G3VM-61A1/61D1/61B1/61E1/351A/351D/351B/351E/401A/401D/401B/401E : I _F =5 mA, V _{OFF} =Load voltage ratings Others : V _{OFF} =Load voltage ratings
		Typical		130		30		85		40									
Capacitance between terminals	C _{OFF}	Typical		130		30		85		40								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		1000														MΩ	V _{I-O} =500 VDC, RoH±50%
		Typical		10 ⁸															
Turn-ON time	t _{ON}	Typical		0.8		0.3		0.1		-		0.3						ms	I _F =5 mA, R _L =200 Ω, V _{OD} =10 V (See note 2.)
		Maximum		2				1											
Turn-OFF time	t _{OFF}	Typical		0.1				1		-		0.1							
		Maximum		0.5		1				3		1							

Note: 2. Turn-ON and Turn-OFF Times

Note: 3. These values are for Relays with NC contacts



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-61A1		G3VM-61B1		G3VM-351A		G3VM-351B		G3VM-353A		G3VM-353B		G3VM-401A		G3VM-401B		Unit
		G3VM-61D1	G3VM-61E1	G3VM-351D	G3VM-351E	G3VM-353D	G3VM-353E	G3VM-401D	G3VM-401E									
Load voltage (AC peak/DC)	V _{DD}	Maximum		48				280						320				V
Operating LED forward current	I _F	Minimum						5										mA
		Typical		7.5		10		25		7.5								
		Maximum																
Continuous load current (AC peak/DC)	I _o	Maximum		500		100		150		100		120						
Ambient operating temperature	T _a	Minimum						-20										°C
		Maximum						65										

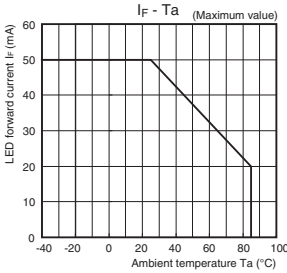
Introduction
 General purpose
 High-level-voltage
 Multi-contact part
 High-current and
 Low-On-resistance
 Small and High-
 dielectric-strength
 High-dielectric-
 strength
 Current-limiting
 Low-on/off-resistance
 Small and High-
 voltage
 Certified Models with
 Statistics Certification
 DIP
 SSOP
 USOP
 VSON
 G3VM-□A□/□D□/□B□/□E□

Spacing and Insulation

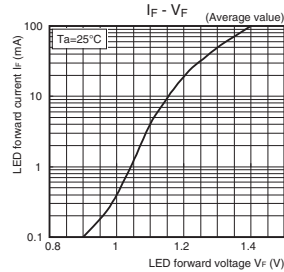
Item	Minimum	Unit
Creepage distances	7.0	mm
Clearance distances	7.0	
Internal isolation thickness	0.4	

Engineering Data

LED forward current vs. Ambient temperature

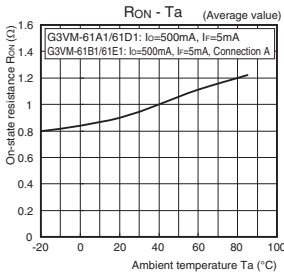


LED forward current vs. LED forward voltage



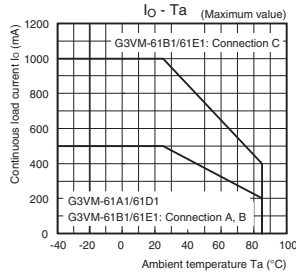
On-state resistance vs. Ambient temperature

G3VM-61A1/61D1/61B1/61E1



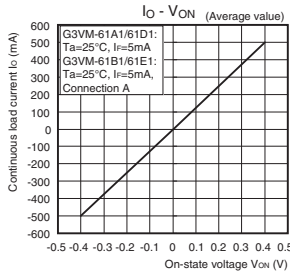
Continuous load current vs. Ambient temperature

G3VM-61A1/61D1/61B1/61E1

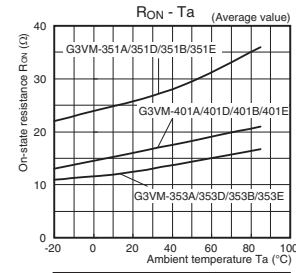


Continuous load current vs. On-state voltage

G3VM-61A1/61D1/61B1/61E1

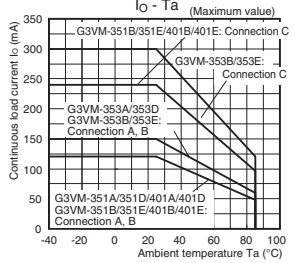


G3VM-351A/351D/351B/351E
 G3VM-353A/353D/353B/353E
 G3VM-401A/401D/401B/401E

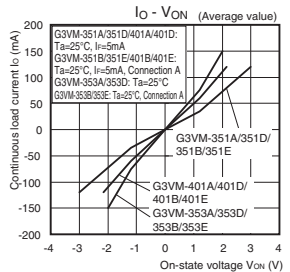


G3VM-351A/351D/401A/401D:
Io=120mA, If=5mA, t<1s
G3VM-351B/351E/401B/401E:
Io=120mA, If=5mA, t<1s, Connection A
G3VM-353A/353D: Io=150mA, t<1s
G3VM-353B/353E: Io=150mA, t<1s, Connection A

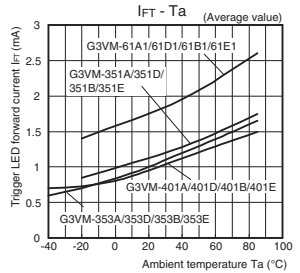
G3VM-351A/351D/351B/351E
 G3VM-353A/353D/353B/353E
 G3VM-401A/401D/401B/401E



G3VM-351A/351D/351B/351E
 G3VM-353A/353D/353B/353E
 G3VM-401A/401D/401B/401E



Trigger LED forward current vs. Ambient temperature

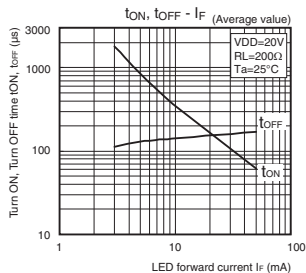


G3VM-61A1/61D1/351A/351D/401A/401D:
Io=Continuous Load Current Ratings, t<1s
G3VM-61B1/61E1/351B/351E/401B/401E:
Io=Continuous Load Current Ratings, t<1s, Connection A
G3VM-353A/353D: Ioff=10μA
G3VM-353B/353E: Ioff=10μA, Connection A

Engineering Data

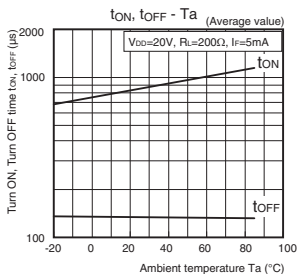
● Turn ON, Turn OFF time vs. LED forward current

G3VM-61A1/61D1/61B1/61E1

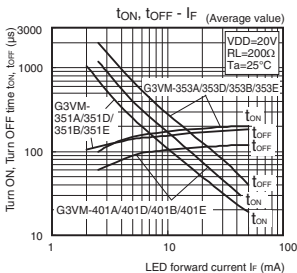


● Turn ON, Turn OFF time vs. Ambient temperature

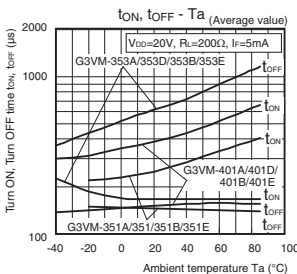
G3VM-61A1/61D1/61B1/61E1



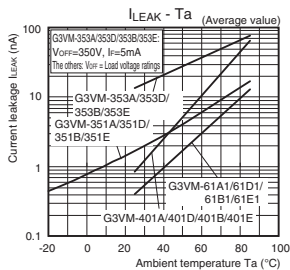
G3VM-351A/351D/351B/351E G3VM-353A/353D/353B/353E G3VM-401A/401D/401B/401E



G3VM-351A/351D/351B/351E G3VM-353A/353D/353B/353E G3VM-401A/401D/401B/401E



● Current leakage vs. Ambient temperature

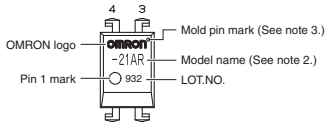


Appearance / Terminal Arrangement / Internal Connections

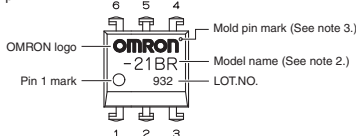
● Appearance

DIP (Dual Inline Package)

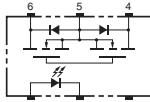
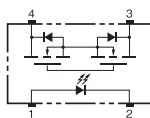
DIP 4-pin



DIP 6-pin



● Terminal Arrangement/Internal Connections (Top View)



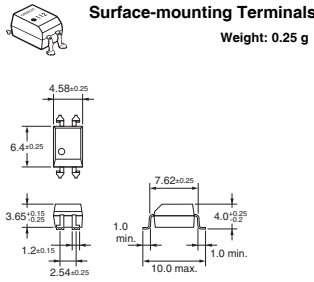
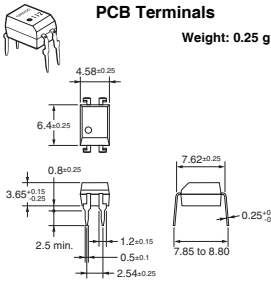
Note: 1. The actual product is marked differently from the image shown here.

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

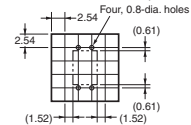
Note: 3. The indentation in the corner diagonally opposite from the pin 1 mark is from a pin on the mold.

■Dimensions (Unit: mm)

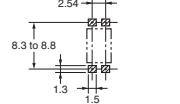
DIP4



PCB Dimensions (BOTTOM VIEW)

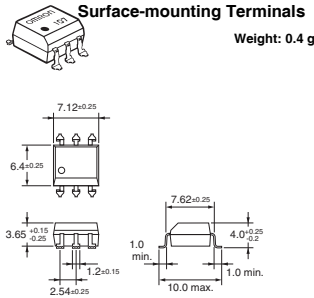
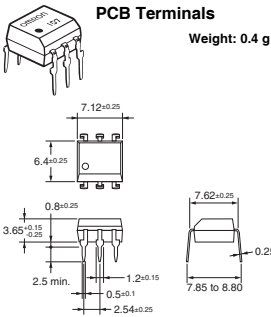


Actual Mounting Pad Dimensions (Recommended Value, Top View)

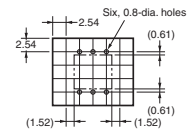


Note: The actual product is marked differently from the image shown here.

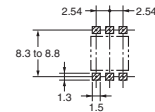
DIP6



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-61A1	G3VM-61D1	G3VM-61B1	G3VM-61E1	UL (recognized)	1a (SPST-NO)	E80555
G3VM-351A	G3VM-351D	G3VM-351B	G3VM-351E			
G3VM-401A	G3VM-401D	G3VM-401B	G3VM-401E			
G3VM-353A	G3VM-353D	G3VM-353B	G3VM-353E			

Models Certified by BSI for EN/IEC Standards

Model	Approved Standards	Contact form	File No.
G3VM-351A	EN 60950/EN 60065 (BSI certified)	1a (SPST-NO)	8816
G3VM-351D			8817

■Safety Precautions

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

Introduction
General purpose
High-side-voltage
Multi-contact pair
Low-Ohm-resistance
High-current and
Low-Ohm-resistance
Small and High-
dielectric-strength
High-dielectric-
strength
Current-limiting
Low-ohmic-resistance
High-voltage
Small and High-
voltage
Certified Models with
Saturated Derivation
DIP
SOP
SSOP
USOP
VSON

G3VM-□A□/□D□/□B□/□E□

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[AQY221N2SYD01](#) [AQY414SXE01](#) [26532764](#) [H10CA4850](#) [H12CA4890VL](#) [RA2410-D06](#) [D1202F](#) [D53TP50-10](#) [W230E-1-12](#) [W230T-3-](#)
[12](#) [W6125ASX-1](#) [W6225DSX-2](#) [W6240DSX-4](#) [W6240DTX-2](#) [1-1617030-3](#) [1-1617033-9](#) [1-1617033-7](#) [MS2-D2420](#) [MS2-D2430](#) [A-1440](#)
[4-1617080-0](#) [RJ1P60V50E](#) [RN1F48I50](#) [70.362.1028.0](#) [7-1393030-8](#) [Z5.509.0828.0](#) [W230E-2-5](#) [G3RV-SR700-D](#) [AC110](#) [G3RV-SR500-AL](#)
[AC100](#) [G3RV-SR500-D](#) [ACDC24](#) [G3RV-SR500-AL](#) [ACDC24](#) [G3RV-SR700-D](#) [ACDC24](#) [G3RV-SR700-AL](#) [ACDC24](#) [G3RV-SR500-D](#)
[DC12](#) [G3RV-SR700-A](#) [ACDC24](#) [G3RV-SR500-A](#) [ACDC24](#) [2912138](#) [2912141](#) [SSRDAC10](#) [1613353](#)