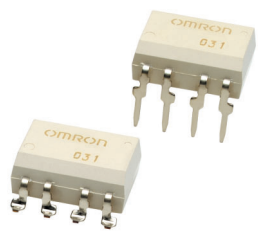


G3VM-□C□/□F□/□CR/□FR

MOS FET Relays DIP 8-pin, Multi-contact-pair Type

MOS FET Relays in DIP 8-pin packages with multiple contact pairs for a wide range of circuits

- Contact form: 2a (DPST-NO), 2b (DPST-NC), 1a1b (SPST-NO/SPST-NC)
- Load voltage: 60 V, 350 V, or 400 V



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

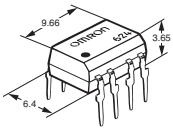
RoHS Compliant

Application Examples

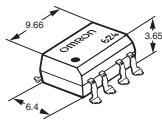
- Communication equipment
- Test & Measurement equipment

Package (Unit : mm, Average)

DIP 8-pin
PCB Terminals



Surface-mounting Terminals



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
40 : 400 V | 2. Contact form
2 : 2a (DPST-NO)
4 : 2b (DPST-NC)
5 : 1a1b (SPST-NO/SPST-NC) | 3. Package
C : DIP 8-pin with PCB terminals
F : DIP 8-pin with surface-mounting terminals |
| 4. Additional functions
R: Low ON resistance | | 5. Other informations
When specifications overlap, serial code is added in the recorded order. |

Ordering Information

Package	Contact form	Load voltage (peak value) *	Continuous load current (peak value) *	Stick packaging			Tape packaging	
				Model		Minimum package quantity	Model	Minimum package quantity
				PCB Terminals	Surface-mounting Terminals			
DIP8	2a (DPST-NO)	60 V	500 mA	G3VM-62C1	G3VM-62F1	50 pcs.	G3VM-62F1(TR)	1,500 pcs.
			120 mA	G3VM-352C	G3VM-352F		G3VM-352F(TR)	
	2b (DPST-NC)	350 V	150 mA	G3VM-354C	G3VM-354F		G3VM-354F(TR)	
			120 mA	G3VM-355CR	G3VM-355FR		G3VM-355FR(TR)	
	2a (DPST-NO)	400 V			G3VM-402C		G3VM-402F	

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

■ Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	G3VM-62C1 G3VM-62F1		G3VM-352C G3VM-352F		G3VM-354C G3VM-354F		G3VM-355CR G3VM-355FR		G3VM-402C G3VM-402F		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)	V _{OFF}	60		350				400				V	
Output	Continuous load current (AC peak/DC)	Io	500		120		150		120				mA	
	ON current reduction rate	ΔIo/°C	-5		-1.2		-1.5		-1.2				mA/°C	Ta ≥ 25°C
	Pulse ON current	I _{op}	1,500		360		450		360				mA	t _s =100 ms, Duty=1/10
	Connection temperature	TJ	125										°C	
	Dielectric strength between I/O (See note 1.)	V _{I-O}	2,500										V _{rms}	AC for 1 min
	Ambient operating temperature	Ta	-40 to +85										°C	With no icing or condensation
Ambient storage temperature	T _{stg}	-55 to +125										°C		
Soldering temperature	-	260										°C	10 s	

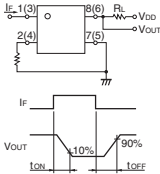
Note: 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

■Electrical Characteristics (Ta = 25°C)

Item	Symbol		G3VM-62C1 G3VM-62F1	G3VM-352C G3VM-352F	G3VM-354C G3VM-354F	G3VM-355CR G3VM-355FR	G3VM-402C G3VM-402F	Unit	Measurement conditions
Input	LED forward voltage	Minimum	1.0				V	If=10 mA	
		Typical	1.15						
		Maximum	1.3						
	Reverse current	Ir	10				μA	Vr=5 V	
	Capacitance between terminals	Ct	30				pF	V=0, f=1 MHz	
Trigger LED forward current	IfT (Ifc) (See note 3.)	Typical	1.6	1			mA	G3VM-62C1/62F1/352C/352F/402C/402F : Io=Continuous load current ratings G3VM-354C/354F : IoFF=10 μA G3VM-355CR/355FR : 1a : Io=120 mA, 1b : IoFF=10 μA	
		Maximum	3						
Release LED forward current	Ifc (IfT) (See note 3.)	Minimum	0.1				mA	G3VM-62C1/62F1/352C/352F/402C/402F : IoFF=100 μA G3VM-354C/354F : Io=150 mA G3VM-355CR/355FR : 1a : IoFF=10 μA, 1b : Io=120 mA	
Maximum resistance with output ON	RON	Typical	1	35 (25)	15		18	Ω	G3VM-62C1/62F1/402C/402F/352C/352F : Ir=5 mA, Io=Continuous load current ratings Values in parentheses are for t < 1 s. G3VM-354C/354F : 1a : Ir=5 mA, Io=120 mA, 1b : Ir=0 mA, Io=120 mA
		Maximum	2	50 (35)	25		35		
Current leakage when the relay is open	I _{LEAK}	Maximum	1				μA	G3VM-354C/354F : V=0, f=1 MHz, Ir=5 mA G3VM-355CR/355FR : 1a : V=0, f=1 MHz, 1b : V=0, f=1 MHz, Ir=5 mA Others : V=0, f=1 MHz	
Capacitance between terminals	C _{OFF}	Typical	130	30	85	65	40	pF	V=0, f=1 MHz
Capacitance between I/O terminals	C _{I-O}	Typical	0.8				pF	f=1 MHz, Vs=0 V	
Insulation resistance between I/O terminals	R _{I-O}	Minimum	1000				MΩ	Vi-o=500 VDC, RoHS±60%	
		Typical	10 ⁸						
Turn-ON time	t _{ON}	Typical	0.8	0.3	0.1	-		ms	Ir=5 mA, RL=200 Ω, VDD=20 V (See note 2.)
		Maximum	2	1		1a : 1, 1b : 1	1		
Turn-OFF time	t _{OFF}	Typical	0.1	0.1	1	-		ms	Ir=5 mA, RL=200 Ω, VDD=20 V (See note 2.)
		Maximum	0.5	1	3	1a : 1, 1b : 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.

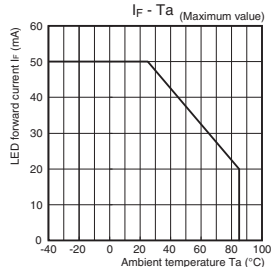
Item	Symbol		G3VM-62C1 G3VM-62F1	G3VM-352C G3VM-352F	G3VM-354C G3VM-354F	G3VM-355CR G3VM-355FR	G3VM-402C G3VM-402F	Unit
Load voltage (AC peak/DC)	V _{DD}	Maximum	48	280			320	V
		Minimum	5					
Operating LED forward current	If	Typical	7.5			-	7.5	mA
		Maximum	25					
		Continuous load current (AC peak/DC)	I _o	500	100	150	120	
Ambient operating temperature	Ta	Minimum	-20				°C	
		Maximum	65					

■Spacing and Insulation

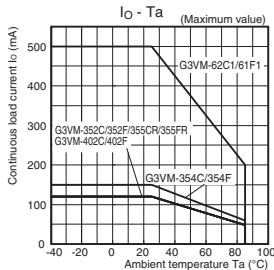
Item	Minimum	Unit
Creepage distances	7.0	mm
Clearance distances	7.0	
Internal isolation thickness	0.4	

Engineering Data

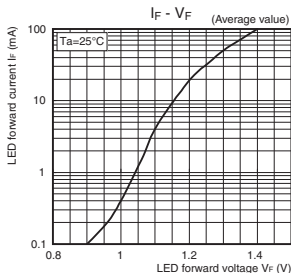
LED forward current vs. Ambient temperature



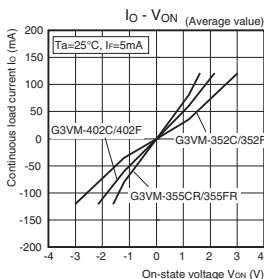
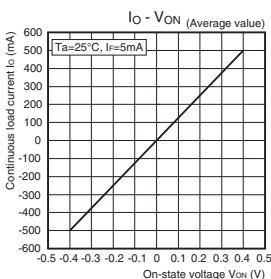
Continuous load current vs. Ambient temperature



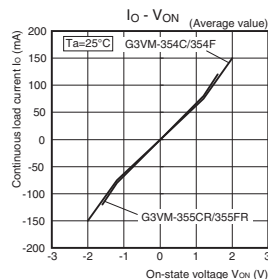
LED forward current vs. LED forward voltage



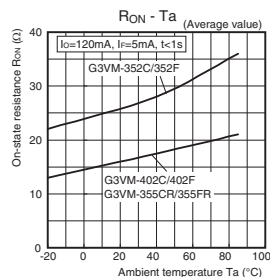
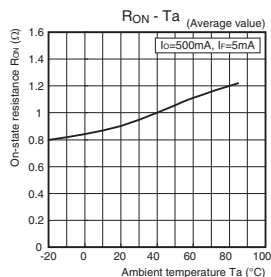
Continuous load current vs. On-state voltage



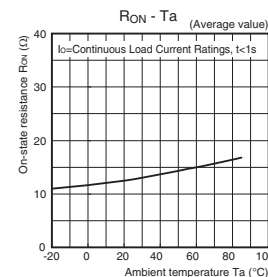
G3VM-354C/354F G3VM-355CR/355FR [SPST-NC Contacts]



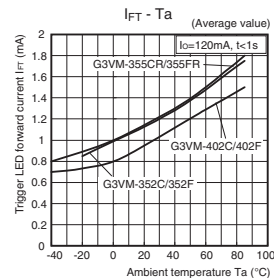
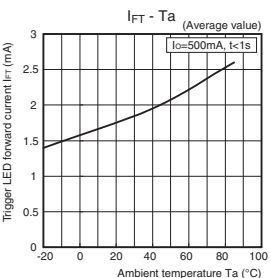
On-state resistance vs. Ambient temperature



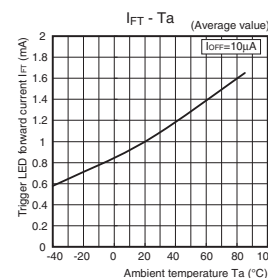
G3VM-354C/354F G3VM-355CR/355FR [SPST-NC Contacts]



Trigger LED forward current vs. Ambient temperature



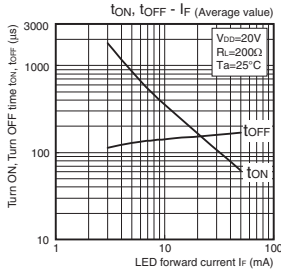
G3VM-354C/354F G3VM-355CR/355FR [SPST-NC Contacts]



Engineering Data

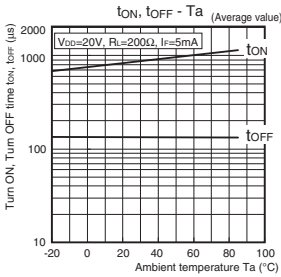
● Turn ON, Turn OFF time vs. LED forward current

G3VM-62C1/62F1



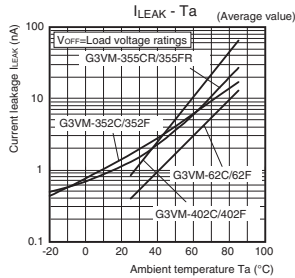
● Turn ON, Turn OFF time vs. Ambient temperature

G3VM-62C1/62F1

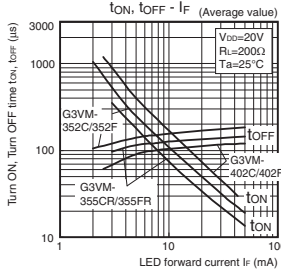


● Current leakage vs. Ambient temperature

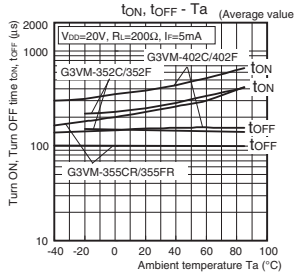
G3VM-62C1/62F1/352C/352F/402C/402F
G3VM-355CR/355FR [SPST-NO Contacts]



G3VM-352C/352F/402C/402F G3VM-355CR/355FR [SPST-NO Contacts]

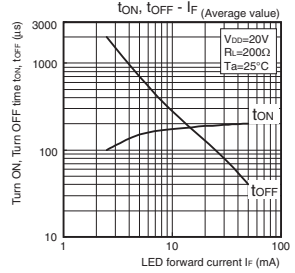


G3VM-352C/352F/402C/402F G3VM-355CR/355FR [SPST-NO Contacts]

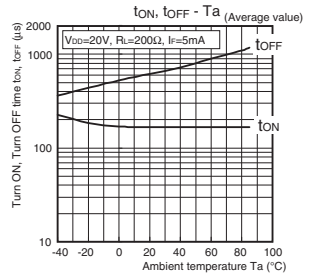


G3VM-354C/354F G3VM-355CR/355FR [SPST-NC Contacts]

G3VM-354C/354F G3VM-355CR/355FR [SPST-NC Contacts]



G3VM-354C/354F G3VM-355CR/355FR [SPST-NC Contacts]



Introduction
General purpose
High-speed-voltage
Multi-contact pair (2a, 2b, and 1a,b)
High-current and Low-ON-resistance
Small and high-inductive-sustance
High-dielectric strength
Current-limiting
Low-on/off-resistance and low-drive-voltage
Small and High-voltage
Certified Models with Standards Certification
DIP
SOP
SSOP
USOP
VSON

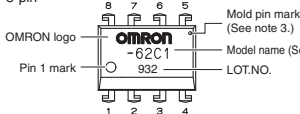
G3VM-C□C□/□F□/□CR□FR

■Appearance / Terminal Arrangement / Internal Connections

●Appearance

DIP (Dual Inline Package)

DIP 8-pin



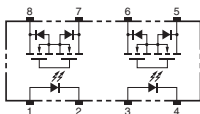
Note 1: The actual product is marked differently from the image shown here.

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

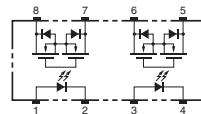
Note 3: The indentation in the corner diagonally opposite from the pin 1 mark is from a pin on the mold.

●Terminal Arrangement/Internal Connections (Top View)

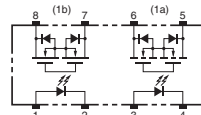
G3VM-62C1/62F1/352C/352F/402C/402F



G3VM-354C/354F



G3VM-355CR/355FR



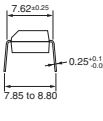
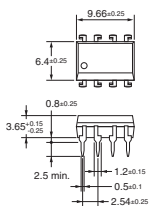
■Dimensions (Unit: mm)

DIP 8-pin



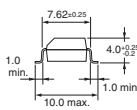
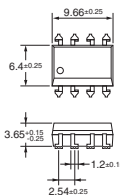
PCB Terminals

Weight: 0.54 g

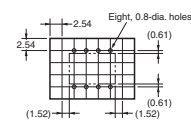


Surface-mounting Terminals

Weight: 0.54 g

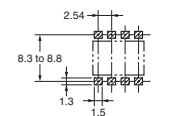


PCB Dimensions (BOTTOM VIEW)




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-62C1 G3VM-62F1 G3VM-352C G3VM-352F G3VM-402C G3VM-402F	UL (recognized)	2a (DPST-NO)	E80555
G3VM-354C G3VM-354F		2b (DPST-NC)	
G3VM-355CR G3VM-355FR		1a1b (SPST-NO/SPST-NC)	

Models Certified by BSI for EN/IEC Standards

Model	Approved Standards	Contact form	File No.
G3VM-352C G3VM-352F	EN 60950/EN 60065 (BSI certified)	2a (DPST-NO)	8816 8817

■Safety Precautions

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