

MOS FET Relays G3VM-355C/F

New MOS FET Relay with Both SPST-NO and SPST-NC Contacts Incorporated in a Single DIP Package

- SPST-NO/SPST-NC models now included in the 350-V load voltage series.
- Continuous load current of 120 mA.
- Dielectric strength of 2,500 Vrms between I/O.
- RoHS Compliant.

Application Examples

- Measurement devices
- Security systems
- Amusement machines



NEW Approval pending

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

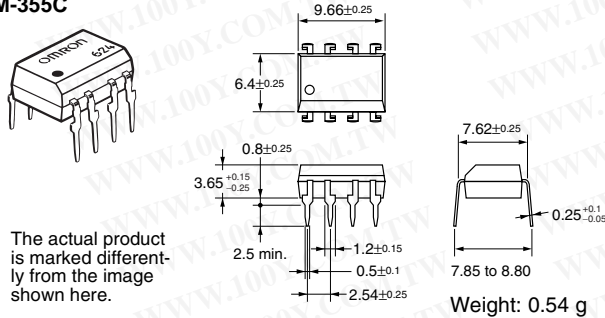
List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NO/ SPST-NC	PCB terminals	350 VAC	G3VM-355C	50	---
	Surface-mounting terminals		G3VM-355F		
				G3VM-355F(TR)	

Dimensions

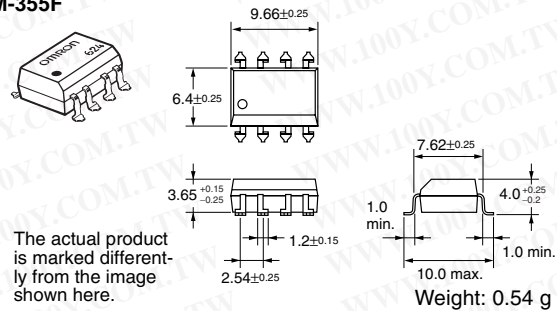
Note: All units are in millimeters unless otherwise indicated.

G3VM-355C



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

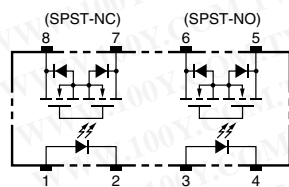
G3VM-355F



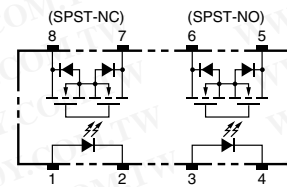
Note: The actual product is marked differently from the image shown here.

Terminal Arrangement/Internal Connections (Top View)

G3VM-355C

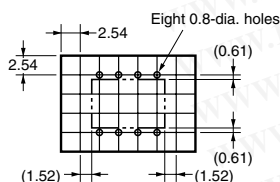


G3VM-355F



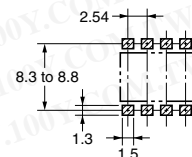
PCB Dimensions (Bottom View)

G3VM-355C



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-355F



■ Absolute Maximum Ratings (Ta = 25°C)

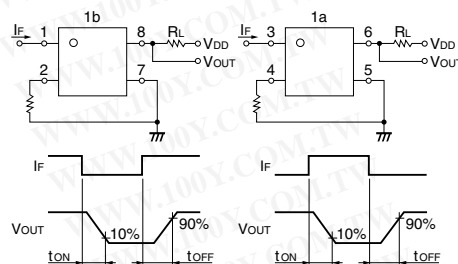
Item	Symbol	Rating	Unit	Measurement conditions	
Input	LED forward current	I_F	50	mA	
	Repetitive peak LED forward current	I_{FP}	1	A	100 μ s pulses, 100 pps
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5	mA/°C	Ta \geq 25°C
	LED reverse voltage	V_R	5	V	
	Connection temperature	T_J	125	°C	
Output	Output dielectric strength	V_{OFF}	350	V	
	Continuous load current	I_O	100	mA	
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	-1.0	mA/°C	Ta \geq 25°C
	Connection temperature	T_J	125	°C	
Dielectric strength between input and output (See note 1.)		V_{LO}	2,500	Vrms	AC for 1 min
Operating temperature		T_a	-40 to +85	°C	With no icing or condensation
Storage temperature		T_{stg}	-55 to +125	°C	With no icing or condensation
Soldering temperature (10 s)		---	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	Minimum	Typical	Maximum	Unit	Measurement conditions	
Input	LED forward voltage	V_F	1.0	1.15	1.3	V	$I_F = 10$ mA
	Reverse current	I_R	---	---	10	μ A	$V_R = 5$ V
	Capacity between terminals	C_T	---	30	---	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I_{FT}	---	1	3	mA	SPST-NO: $I_O = 100$ mA SPST-NC: $I_{OFF} = 10$ μ A
Output	Maximum resistance with output ON	R_{ON}	---	30	35	Ω	SPST-NO: $I_F = 5$ mA, $I_O = 100$ mA
			40	50	---	SPST-NC: $I_F = 0$ mA, $I_O = 100$ mA	
	Current leakage when the relay is open	I_{LEAK}	---	---	1.0	μ A	$V_{OFF} = 350$ V
Capacity between I/O terminals		$C_{I/O}$	---	0.8	---	pF	f = 1 MHz, $V_S = 0$ V
Insulation resistance		$R_{I/O}$	1,000	---	---	M Ω	$V_{LO} = 500$ VDC, RoH \leq 60%
Turn-ON time	SPST-NO	tON	---	0.25	1.0	ms	$I_F = 5$ mA, $R_L = 200$ Ω , $V_{DD} = 20$ V (See note 2.)
	SPST-NC	---	---	0.3	1.0	ms	
Turn-OFF time	SPST-NO	tOFF	---	0.5	1.0	ms	
	SPST-NC	---	---	0.15	1.0	ms	

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



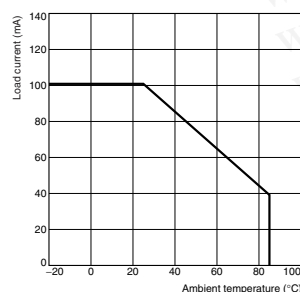
■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V_{DD}	---	---	280	V
Operating LED forward current	I_F	5	10	25	mA
Continuous load current	I_O	---	---	100	mA
Operating temperature	T_a	-20	---	65	°C

■ Engineering Data

Load Current vs. Ambient Temperature
G3VM-355C(F)



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