

MOS FET Relays

G3VM-355C/CR/F/FR

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

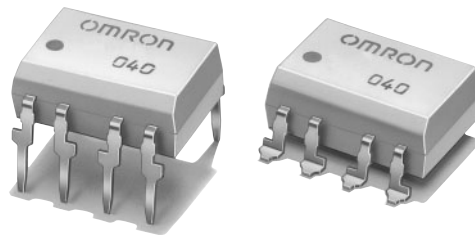
General-purpose Series Added

- SPST-NO/SPST-NC models now included in the 350-V load voltage series.
- Continuous load current of 120 mA (90 mA).
- Dielectric strength of 2,500 Vrms between I/O.
- General-purpose series (high ON-resistance) added.



Caution

Refer to “Common Precautions” on page 2.

**NEW**

■ Application Examples

- Measurement devices
- Security systems
- Amusement machines

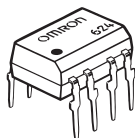
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Minimum packaging unit	
				Number per stick	Number per tape
SPST-NO/SPST-NC	PCB terminals	350 V AC	G3VM-355CR	50	---
	Surface-mounting terminals		G3VM-355C		
			G3VM-355FR		
			G3VM-355F		
			G3VM-355FR(TR)	---	1,500
			G3VM-355F(TR)		

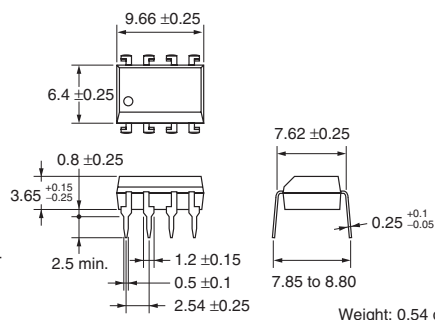
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-355C/CR

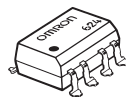


Note: The actual product is marked differently from the image shown here.

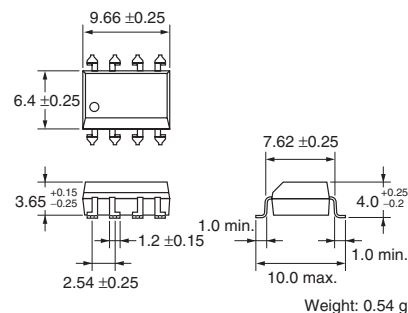


Weight: 0.54 g

G3VM-355F/FR



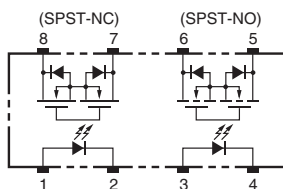
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Weight: 0.54 g

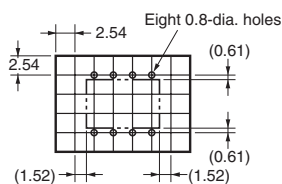
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-355C/CR

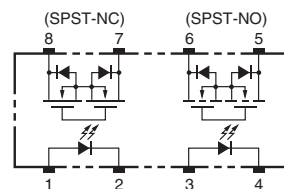


■ PCB Dimensions (Bottom View)

G3VM-355C/CR

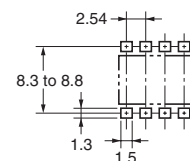


G3VM-355F/FR



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-355F/FR



■ 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
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5	mA/°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	120 (100)	mA
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	-1.2 (-1)	mA/°C
	Connection temperature	T_J	125	°C
Dielectric strength between input and output (See note 1.)		$V_{I/O}$	2,500	Vrms
Operating temperature		T_a	-40 to 85	°C
Storage temperature		T_{stg}	-55 to 125	°C
Soldering temperature (10 s)		---	260	°C

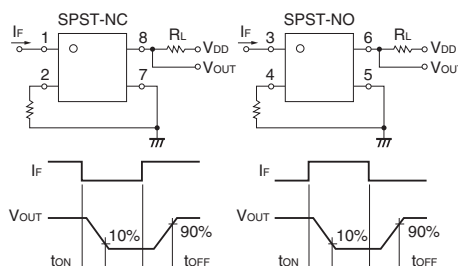
Note 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

Values inside parentheses () are for G3VM-355C/F.

■ 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	$I_F = 10\text{ mA}$
	Reverse current	I_R	---	---	10	μA	$V_R = 5\text{ V}$
	Capacity between terminals	C_T	---	30	---	pF	$V = 0, f = 1\text{ MHz}$
	Trigger LED forward current	I_{FT}	---	1	3	mA	SPST-NO: $I_O = 120\text{ mA}$ SPST-NC: $I_{OFF} = 10\text{ }\mu\text{A}$
Output	Maximum resistance with output ON	R_{ON}	---	15 (40)	25 (50)	Ω	SPST-NO: $I_F = 5\text{ mA}, I_O = 120\text{ mA}$ SPST-NC: $I_F = 0\text{ mA}, I_O = 120\text{ mA}$
	Current leakage when the relay is open	I_{LEAK}	---	---	1.0	μA	$V_{OFF} = 350\text{ V}$
Capacity between I/O terminals		$C_{I/O}$	---	0.8	---	pF	$f = 1\text{ MHz}, V_s = 0\text{ V}$
Insulation resistance		$R_{I/O}$	1,000	---	---	M Ω	$V_{I/O} = 500\text{ V DC}, R_{OH} \leq 60\%$
Turn-ON time	SPST-NO	t_{ON}	---	(0.3)	1.0	ms	$I_F = 5\text{ mA}, R_L = 200\text{ }\Omega, V_{DD} = 20\text{ V}$ (See note 2.)
	SPST-NC	t_{ON}	---	(0.25)	1.0	ms	
Turn-OFF time	SPST-NO	t_{OFF}	---	(0.15)	1.0	ms	
	SPST-NC	t_{OFF}	---	(0.5)	3.0 (1)	ms	

Note 2. Turn-ON and Turn-OFF Times



Values inside parentheses () are for G3VM-355C/F.

■ 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	---	25	mA
Continuous load current	I_O	---	---	120 (100)	mA
Operating temperature	T_a	-20	---	65	°C

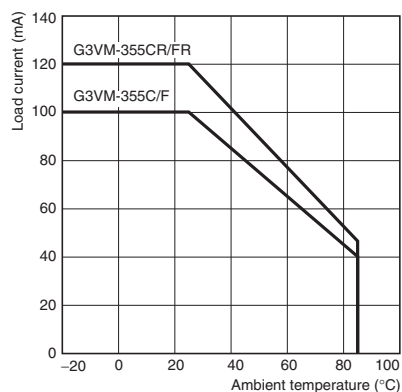
Values inside parentheses () are for G3VM-355C/F.

■ Engineering Data

Load Current vs. Ambient Temperature

G3VM-355C/F

G3VM-355CR/FR



■ Safety Precautions

Refer to page 2 for precautions common to all G3VM models.