

MOS FET Relays

G3VM-355J/JR

New MOS FET Relay with Both SPST-NO and SPST-NC Contacts Incorporated in a Single SOP Package General-purpose Series Added

- SPST-NO/SPST-NC models with an 8-pin SOP package now available in the 350-V load voltage series.
- Continuous load current of 120 mA (90 mA).
- Dielectric strength of 1,500 Vrms between I/O.
- General-purpose series (high ON-resistance) added.



NEW

Caution

Refer to "Common Precautions" on page 2.

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

Application Examples

- Broadband systems
- Measurement devices
- Data loggers
- Amusement machines

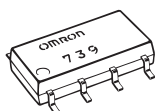
List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Minimum packaging unit	
				Number per stick	Number per tape
SPST-NO/SPST-NC	Surface-mounting terminals	350 V AC	G3VM-355JR	50	---
			G3VM-355J		
			G3VM-355JR(TR)	---	2,500
			G3VM-355J(TR)		

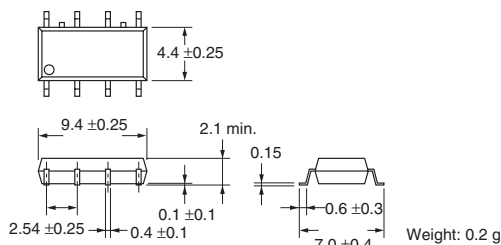
Dimensions

Note: All units are in millimeters unless otherwise indicated.

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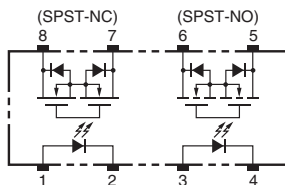


Note: The actual product is marked differently from the image shown here.



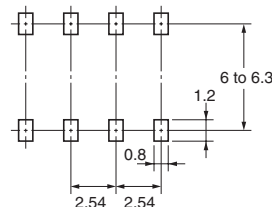
Terminal Arrangement/Internal Connections (Top View)

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Actual Mounting Pad Dimensions (Recommended Value, Top View)

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■ 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 (90)	mA	
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	-1.2 (-0.9)	mA/°C	
	Connection temperature	T_J	125	°C	
Dielectric strength between input and output (See note 1.)					
		$V_{I,O}$	1,500	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

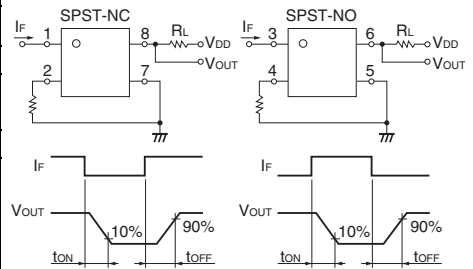
Note 1. The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

Values inside parentheses () are for G3VM-355J.

■ 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} I_{FC}	---	1	3	mA	SPST-NO: $I_O = 120 \text{ mA}$ SPST-NC: $I_{OFF} = 10 \mu\text{A}$
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	$I_F = 5 \text{ mA}, R_L = 200 \Omega, V_{DD} = 20 \text{ V}$ (See note 2.)
	SPST-NC	---	---	(0.25)	1.0	ms	
Turn-OFF time	SPST-NO	t_{OFF}	---	(0.15)	1.0	ms	
	SPST-NC	---	---	(0.5)	3.0 (1)	ms	

Note 2. Turn-ON and Turn-OFF Times



Values inside parentheses () are for G3VM-355J.

■ Recommended Operating Conditions

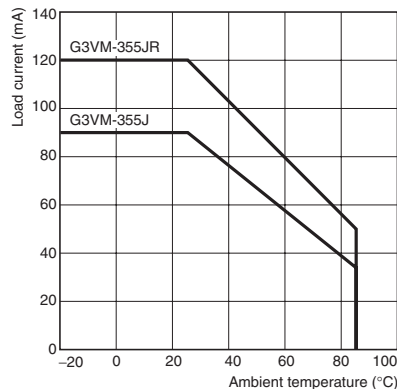
Use the G3VM under the following conditions so that the Relay will operate properly.

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 (90)	mA
Operating temperature	T_a	-20	---	65	°C

Values inside parentheses () are for G3VM-355J.

■ Engineering Data

Load Current vs. Ambient Temperature
G3VM-355J/JR



■ Safety Precautions

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