

MOS FET Relays

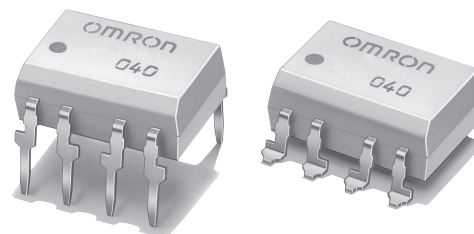
G3VM-355CR/FR

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

- SPST-NO/SPST-NC models included in the 350-V load 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



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

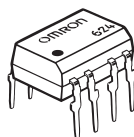
List of Models

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

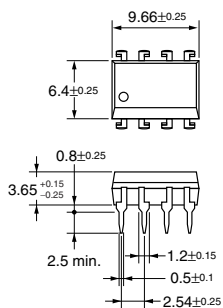
Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-355CR

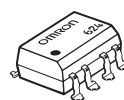


Note: The actual product is marked differently from the image shown here.

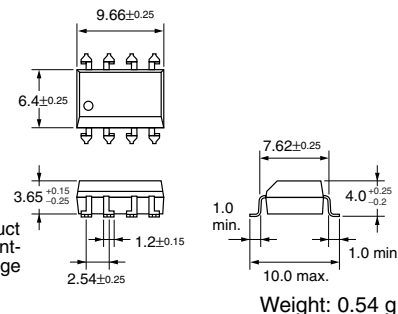


Weight: 0.54 g

G3VM-355FR



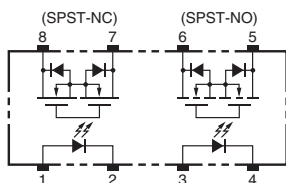
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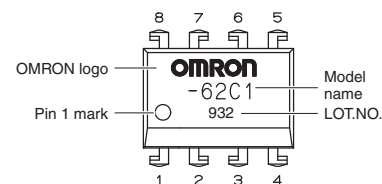
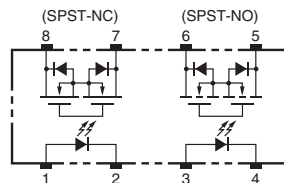
Weight: 0.54 g

Terminal Arrangement/Internal Connections (Top View)

G3VM-355CR



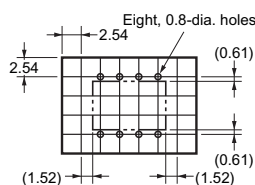
G3VM-355FR



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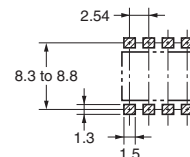
PCB Dimensions (Bottom View)

G3VM-355CR



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-355FR



■ Absolute Maximum Ratings (Ta = 25°C)

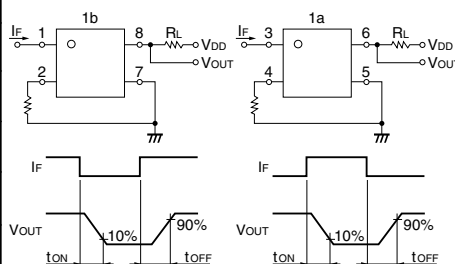
Item		Symbol	Rating	Unit	Measurement conditions
Input	LED forward current	I_F	50	mA	
	Repetitive peak LED forward current	I_{FP}	1	A	100 μ s pulses, 100 pps
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	- 0.5	mA/°C	Ta \geq 25°C
	LED reverse voltage	V_R	5	V	
	Connection temperature	T_J	125	°C	
Output	Load voltage (AC peak/DC)	V_{OFF}	350	V	
	Continuous load current (AC peak/DC)	I_O	120	mA	
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	- 1.2	mA/°C	Ta \geq 25°C
	Connection temperature	T_J	125	°C	
Dielectric strength between input and output (See note 1.)		V_{I-O}	2,500	V_{rms}	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		Sym- bol	Mini- mum	Typical	Maxi- mum	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: $I_O = 120$ mA SPST-NC: $I_{OFF} = 10$ μ A
Output	Maximum resistance with output ON	R_{ON}	---	15	25	Ω	SPST-NO: $I_F = 5$ mA, $I_O = 120$ mA SPST-NC: $I_F = 0$ mA, $I_O = 120$ mA
	Current leakage when the relay is open	I_{LEAK}	---	---	1.0	μ A	$V_{OFF} = 350$ V
	Capacity between terminals	C_{OFF}	---	65	---	pF	$V = 0$, $f = 1$ MHz (NO) $V = 0$, $f = 1$ MHz, $I_F = 5$ mA (NC)
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	$V_{I-O} = 500$ VDC, $R_{oh} \leq 60\%$
Turn-ON time	SPST-NO	t_{ON}	---	---	1.0	ms	$I_F = 5$ mA, $R_L = 200$ Ω , $V_{DD} = 20$ V (See note 2.)
	SPST-NC		---	---	1.0	ms	
Turn-OFF time	SPST-NO	t_{OFF}	---	---	1.0	ms	
	SPST-NC		---	---	3.0	ms	

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



■ Recommended Operating Conditions

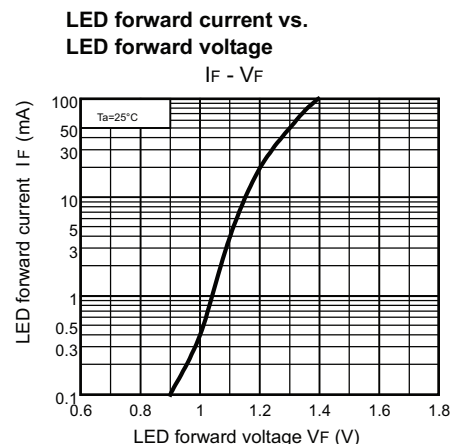
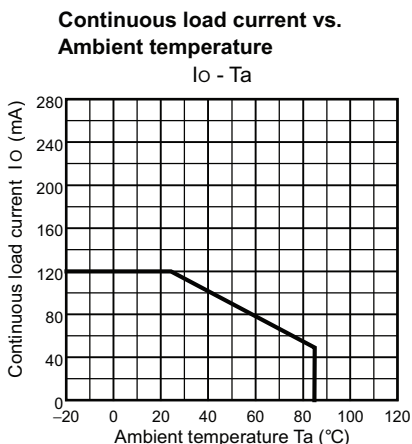
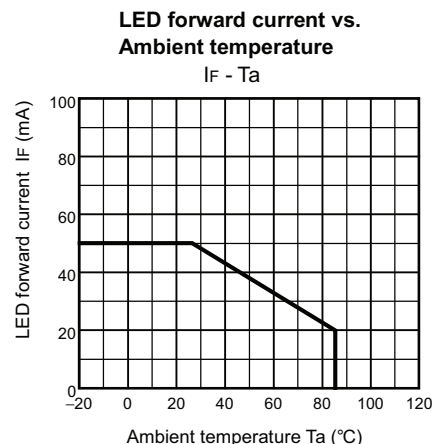
Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}	---	---	280	V
Operating LED forward current	I_F	5	---	25	mA
Continuous load current (AC peak/DC)	I_O	---	---	120	mA
Operating temperature	T_a	- 20	---	65	°C

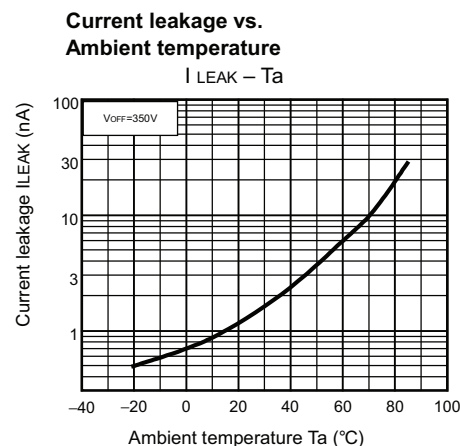
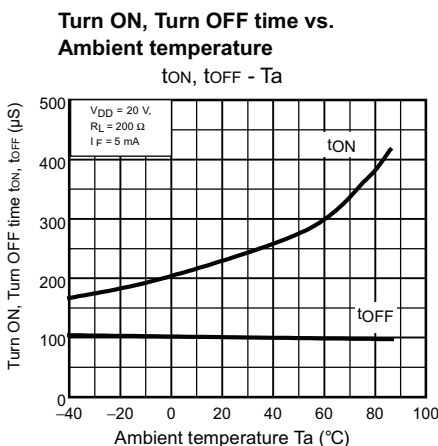
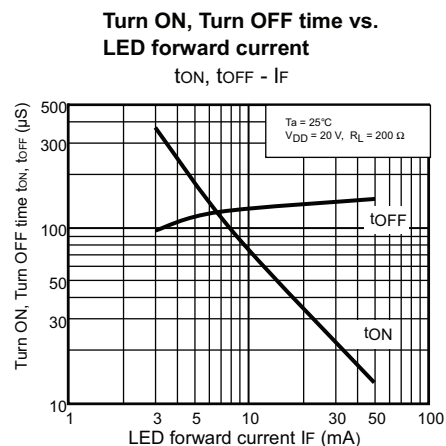
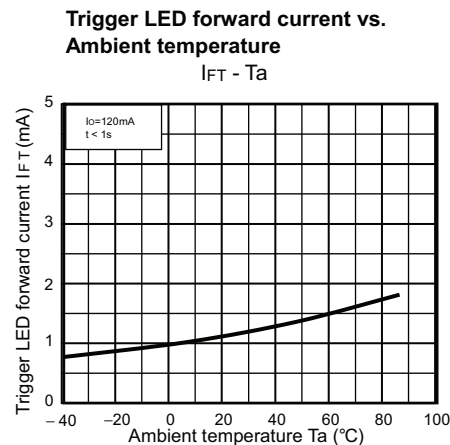
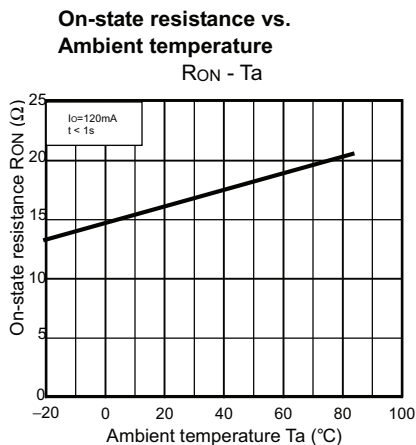
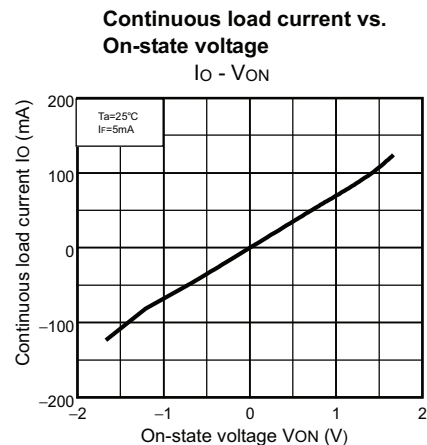
■ Engineering Data

G3VM-355CR/FR

Common Characteristics; SPST-NO / SPST-NC

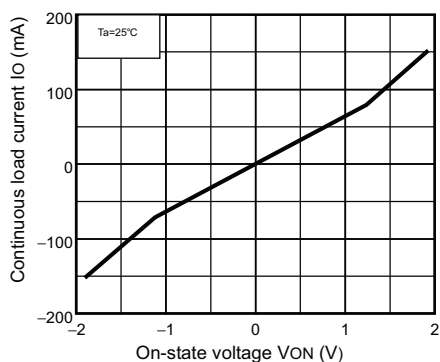


Characteristics; SPST-NO

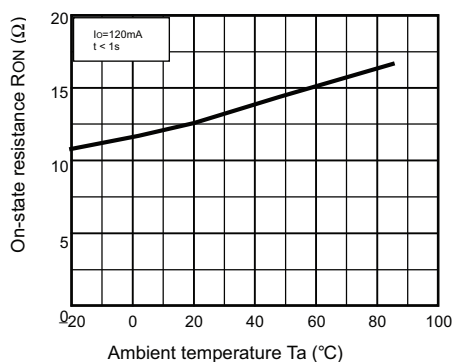


■ Engineering Data
G3VM-355CR/FR (continued)
 Characteristics; SPST-NC

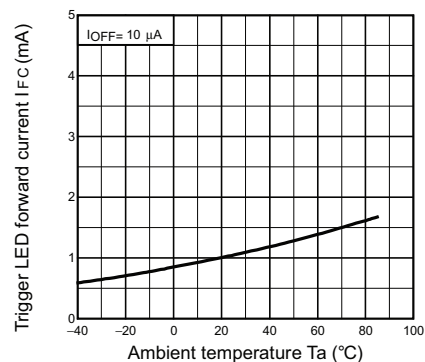
Continuous load current vs. On-state voltage
 $I_O - V_{ON}$



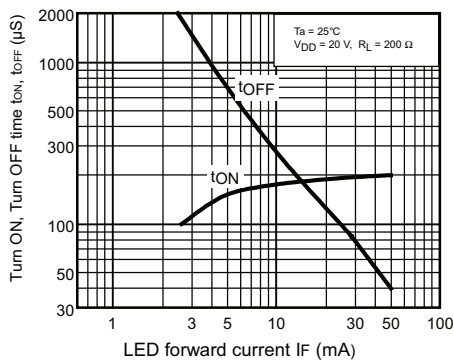
On-state resistance vs. Ambient temperature
 $R_{ON} - T_a$



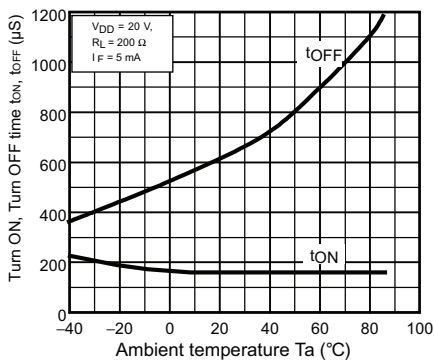
Trigger LED forward current vs. Ambient temperature
 $I_{FC} - T_a$



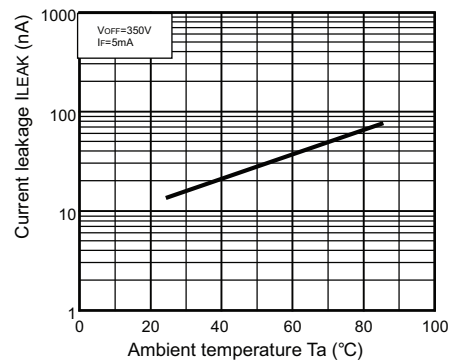
Turn ON, Turn OFF time vs. LED forward current
 $t_{ON}, t_{OFF} - I_F$

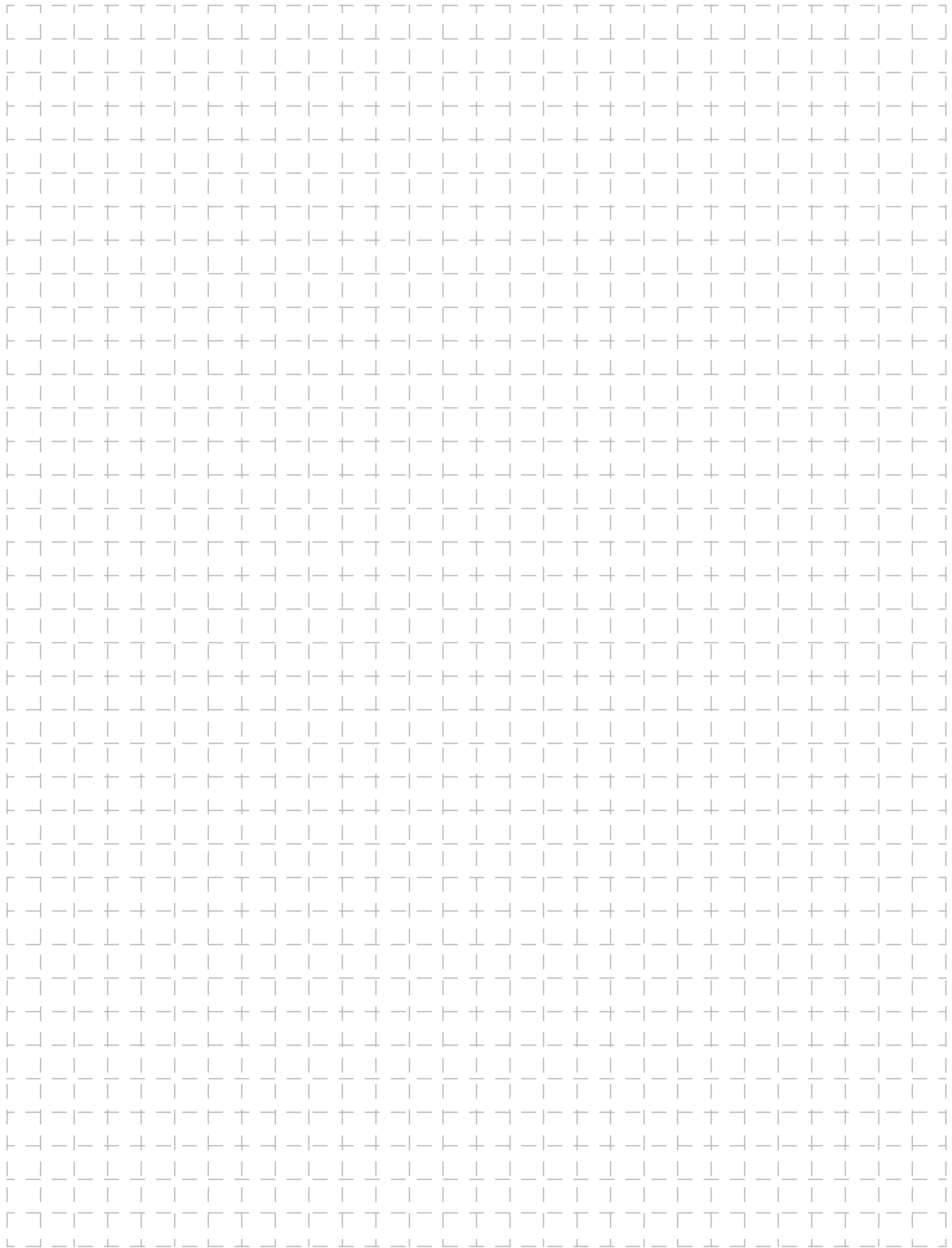


Turn ON, Turn OFF time vs. Ambient temperature
 $t_{ON}, t_{OFF} - T_a$



Current leakage vs. Ambient temperature
 $I_{LEAK} - T_a$





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