

MOS FET Relays

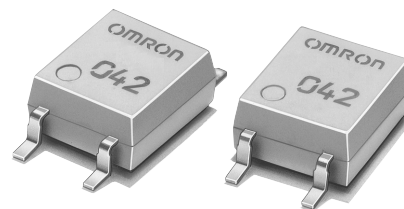
G3VM-353G/G1

Analog-switching MOS FET Relay with SPST-NC Contacts. General Purpose version added.

- New models with SPST-NC contacts and a 4-pin SOP package included in 350-V load voltage series.
- Continuous load current of 120 mA.
- Dielectric strength of 1,500 Vrms between I/O.
- General-purpose series (with high ON resistance) added.
- RoHS Compliant.

Application Examples

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



NEW 

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

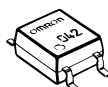
List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NC	Surface-mounting terminals	350 VAC	G3VM-353G	100	---
			G3VM-353G1		
			G3VM-353G(TR)	---	2,500
			G3VM-353G1(TR)		

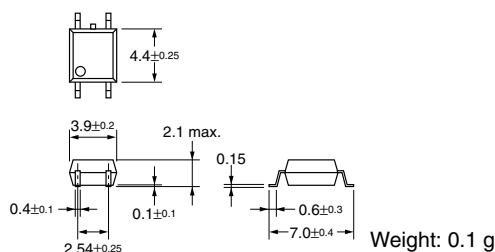
Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-353G/G1

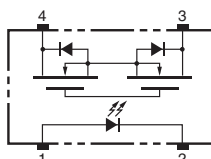


Note: The actual product is marked differently from the image shown here.



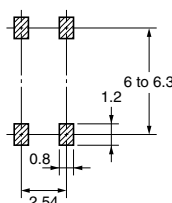
Terminal Arrangement/Internal Connections (Top View)

G3VM-353G/G1



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-353G/G1



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	Load voltage (AC peak/DC)	V_{OFF}	350	V
	Continuous load current (AC peak/DC)	I_O	120 (90)	mA
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	-1.2 (-0.9)	mA/°C
Dielectric strength between input and output (See note 1.)		V_{I-O}	1,500	V_{rms}
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 in parentheses are for the G3VM-353G1

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
	Reverse current	I_R	---	---	10	μA
	Capacity between terminals	C_T	---	30	---	pF
	Trigger LED forward current	I_{FT}	---	1	3	mA
Output	Maximum resistance with output ON	R_{ON}	---	15 (30)	25 (50)	Ω
	Current leakage when the relay is open	I_{LEAK}	---	0.0105 (0.003)	1.0	μA
	Capacity between terminals	C_{OFF}	---	65 (30)	---	pF
Capacity between I/O terminals		C_{I-O}	---	0.8	---	pF
Insulation resistance		R_{I-O}	1,000	---	---	M Ω
Turn-ON time		t_{ON}	---	0.15 (0.25)	1.0 (1)	ms
Turn-OFF time		t_{OFF}	---	0.7 (0.5)	3.0 (1)	ms

Values in parentheses are for the G3VM-353G1

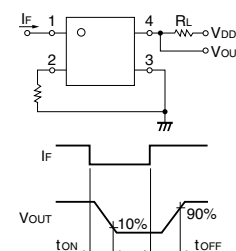
Recommended Operating Conditions

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

Values in parentheses are for the G3VM-353G1

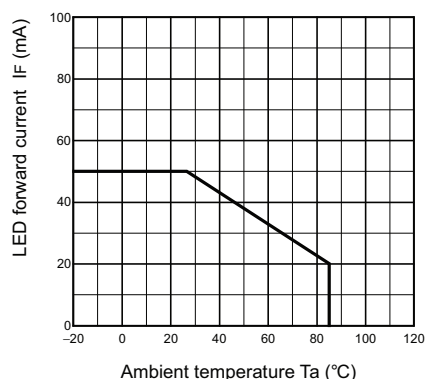
Note: 2. Turn-ON and Turn-OFF Times



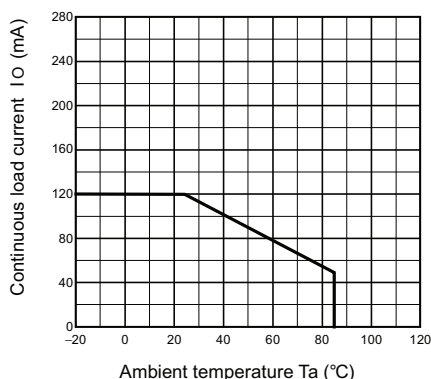
Engineering Data

G3VM-353G

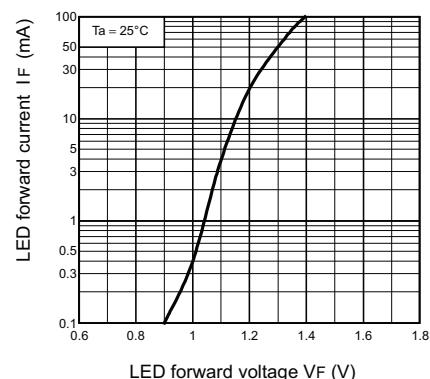
LED forward current vs.
Ambient temperature
 $I_F - T_a$



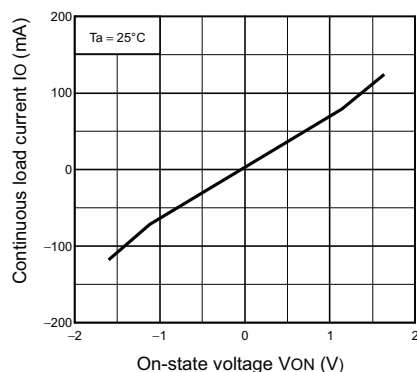
Continuous load current vs.
Ambient temperature
 $I_O - T_a$



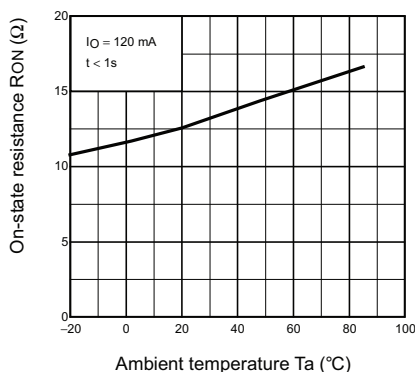
LED forward current vs.
LED forward voltage
 $I_F - V_F$



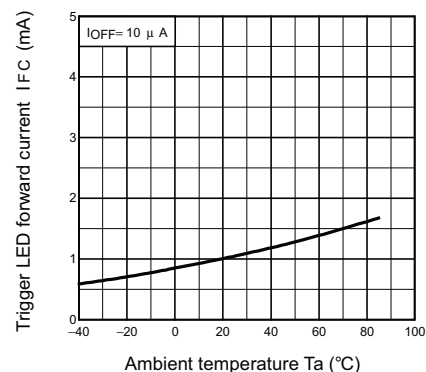
Continuous load current vs.
On-state voltage
 $I_O - V_{ON}$



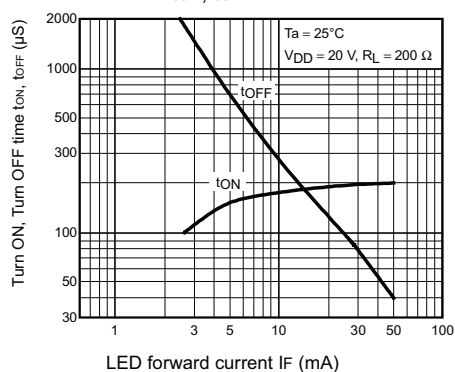
On-state resistance vs.
Ambient temperature
 $R_{ON} - T_a$



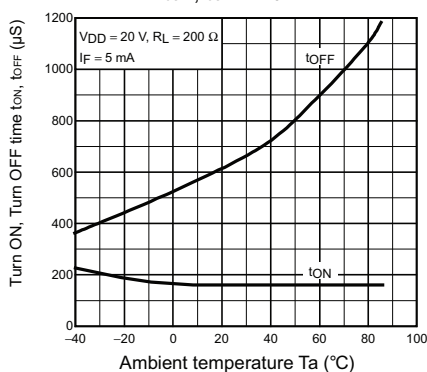
Trigger LED forward current vs.
Ambient temperature
 $I_{FC} - T_a$



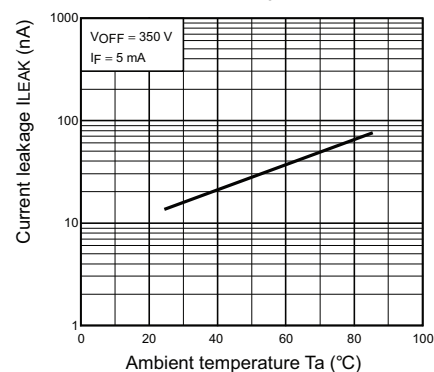
Turn ON, Turn OFF time vs.
LED forward current
 $t_{ON}, t_{OFF} - I_F$



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

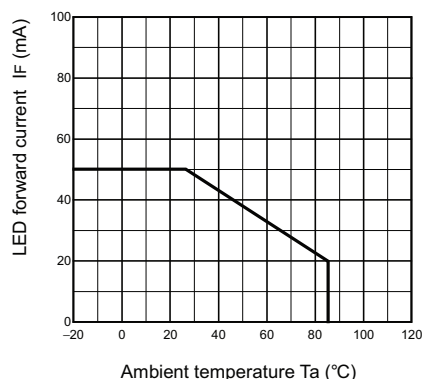


Current leakage vs.
Ambient temperature
 $I_{LEAK} - T_a$

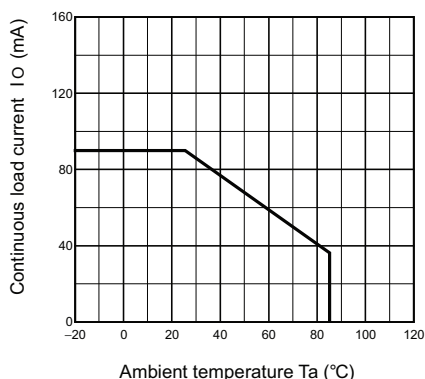


■ Engineering Data
G3VM-353G1

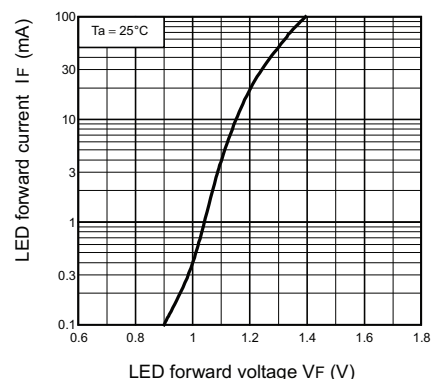
LED forward current vs.
Ambient temperature
 $I_F - T_a$



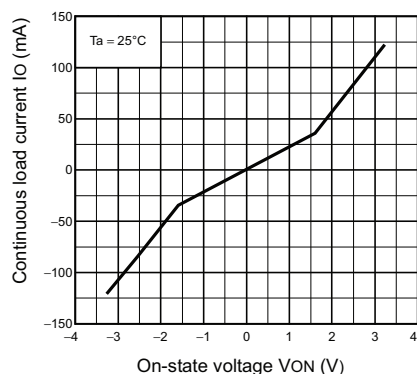
Continuous load current vs.
Ambient temperature
 $I_O - T_a$



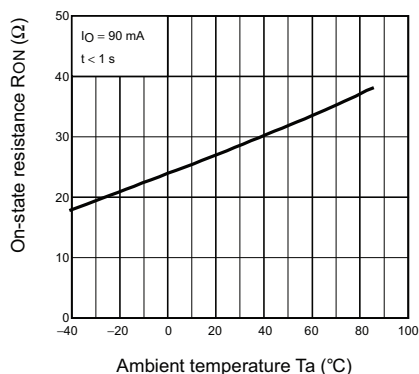
LED forward current vs.
LED forward voltage
 $I_F - V_F$



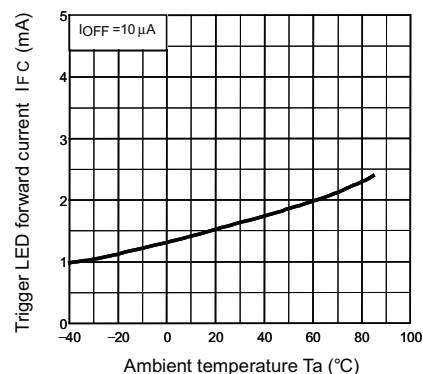
Continuous load current vs.
On-state voltage
 $I_O - V_{ON}$



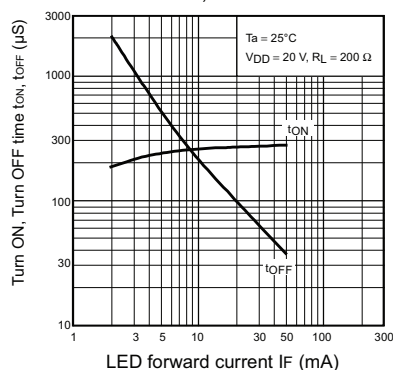
On-state resistance vs.
Ambient temperature
 $R_{ON} - T_a$



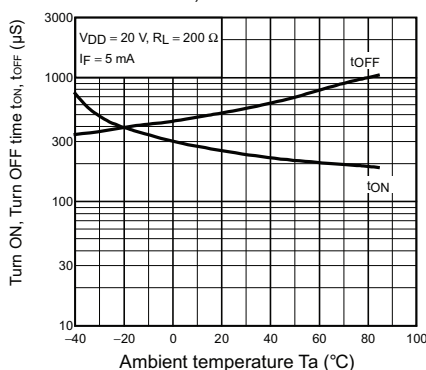
Trigger LED forward current vs.
Ambient temperature
 $I_{FC} - T_a$



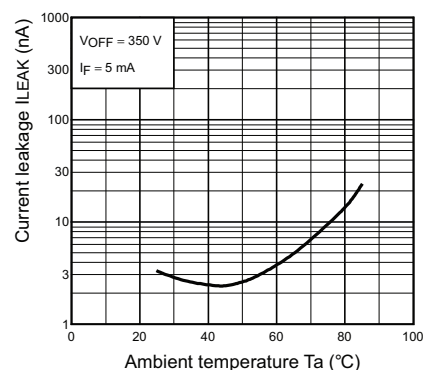
Turn ON, Turn OFF time vs.
LED forward current
 $t_{ON}, t_{OFF} - I_F$



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



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



Omron Electronic Components, LLC

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To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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