

MOS FET Relays

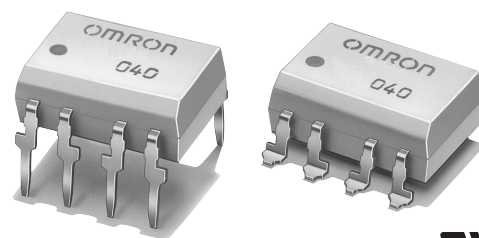
G3VM-354C/C1/F/F1

Analog-switching MOS FET Relay with DPST-NC Contacts. General-purpose models added.

- Switches minute analog signals.
- Switching AC and DC.
- General-purpose models (high ON resistance) added.
- RoHS Compliant.

■ Application Examples

- Electronic automatic exchange systems
- Security systems
- Datacom (modem) systems
- FA systems and Measurement devices



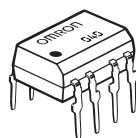
Note: The actual product is marked differently from the image shown here.

■ List of Models

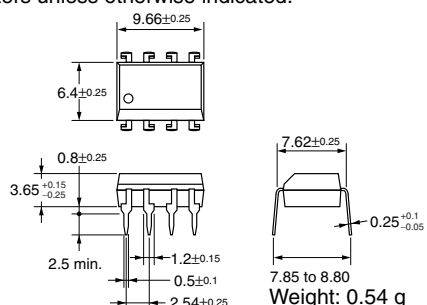
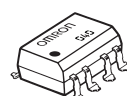
Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
DPST-NC	PCB terminals	350 VAC	G3VM-354C	50	---
	Surface-mounting terminals		G3VM-354C1		
			G3VM-354F		
			G3VM-354F1		
			G3VM-354F(TR)	---	1,500
			G3VM-354F1(TR)		

■ Dimensions

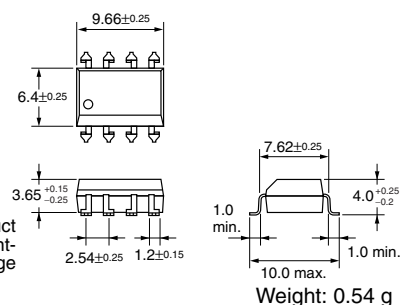
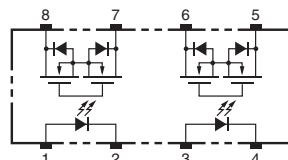
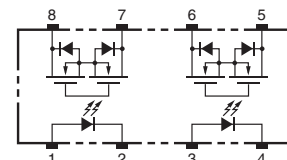
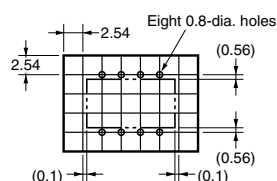
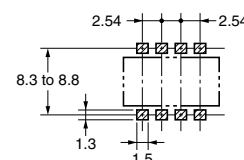
Note: All units are in millimeters unless otherwise indicated.

G3VM-354C/C1

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

**G3VM-354F/F1**

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

**■ Terminal Arrangement/Internal Connections (Top View)****G3VM-354C/C1****G3VM-354F/F1****■ PCB Dimensions (Bottom View)****G3VM-354C/C1****■ Actual Mounting Pad Dimensions (Recommended Value, Top View)****G3VM-354F/F1**

■ 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	150 (100)	mA
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	-1.5 (-1)	mA/°C
	Connection temperature	T_J	125	°C
Dielectric strength between input and output (See note 1.)		V_{I-O}	2,500	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-354C1/F1

■ 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}	---	85 (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}	---	0.1 (0.25)	1.0 (0.5)	ms
Turn-OFF time		t_{OFF}	---	1.0 (0.5)	3.0 (0.1)	ms

Values in parentheses are for the G3VM-354C1/F1

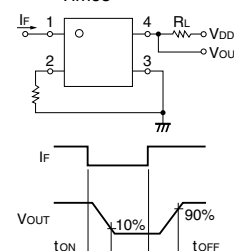
■ Recommended Operating Conditions

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	---	---	150 (100)	mA
Operating temperature	T_a	-20	---	65	°C

Values in parentheses are for the G3VM-354C1/F1

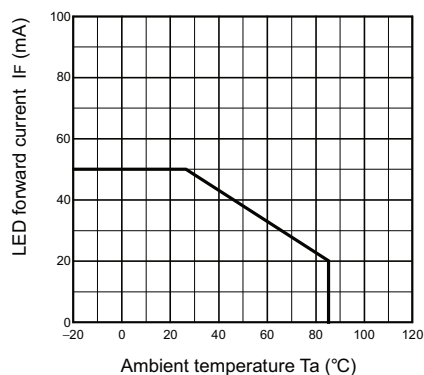
Note: 2. Turn-ON and Turn-OFF Times



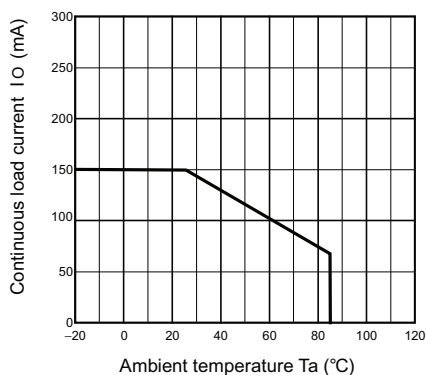
Engineering Data

G3VM-354C/F

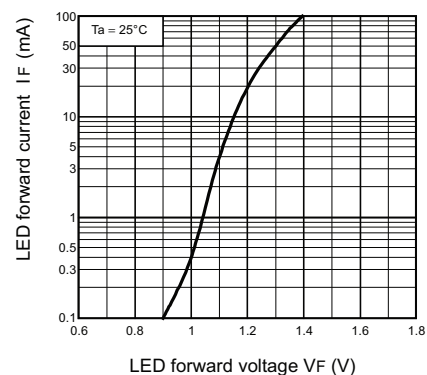
LED forward current vs.
Ambient temperature
 $I_F - T_a$



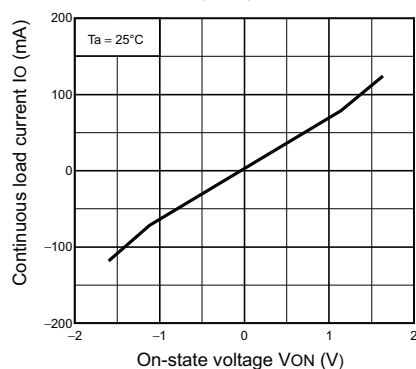
Continuous load current vs.
Ambient temperature
 $I_O - T_a$



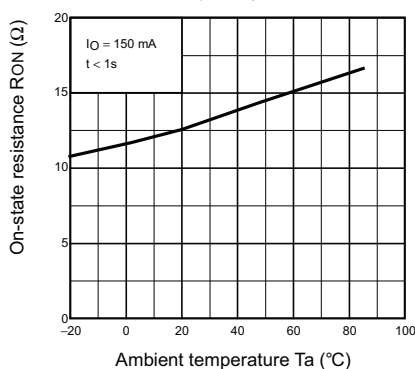
LED forward current vs.
LED forward voltage
 $I_F - V_F$



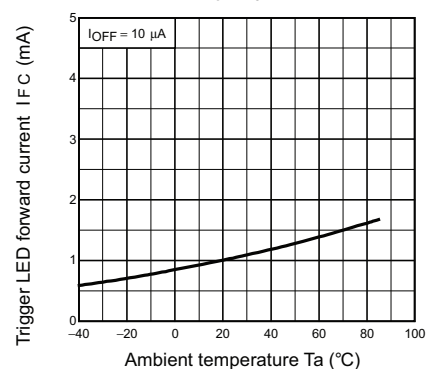
Continuous load current vs.
On-state voltage
 $I_O - V_{ON}$



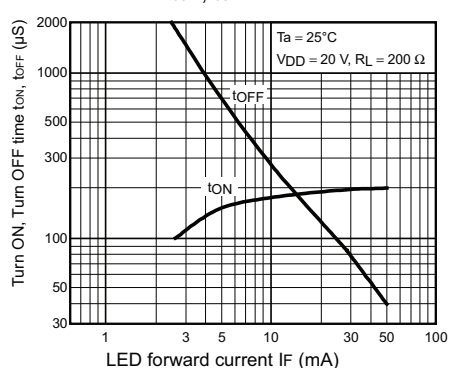
On-state resistance vs.
Ambient temperature
 $R_{ON} - T_a$



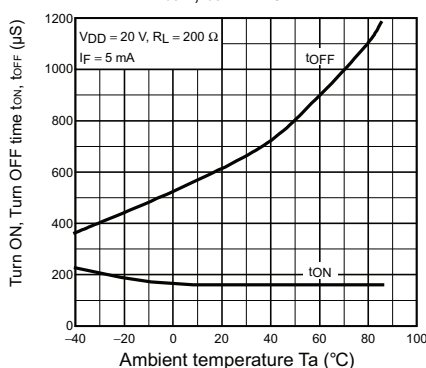
Trigger LED forward current vs.
Ambient temperature
 $I_{FC} - T_a$



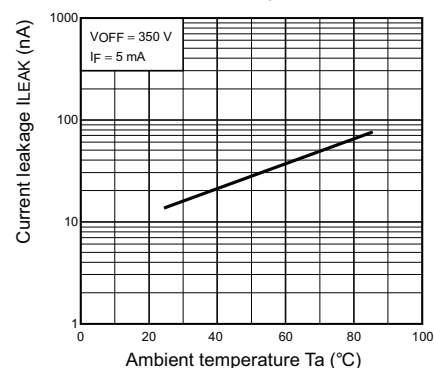
Turn ON, Turn OFF time vs.
LED forward current
 $t_{ON}, t_{OFF} - I_F$



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



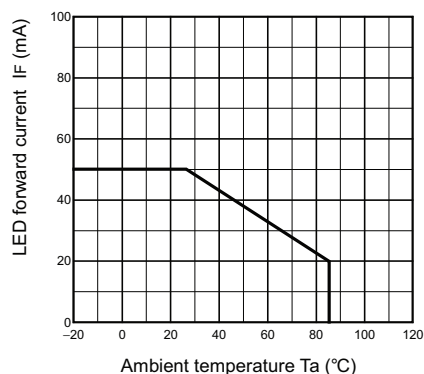
Current leakage vs.
Ambient temperature
 $I_{LEAK} - T_a$



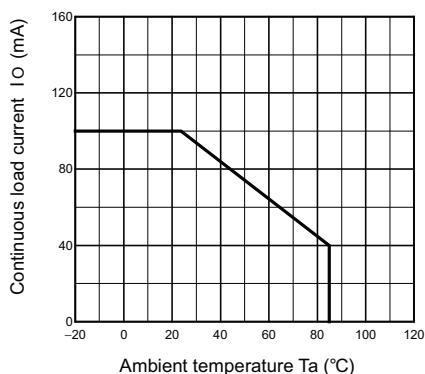
Engineering Data

G3VM-354C1/F1

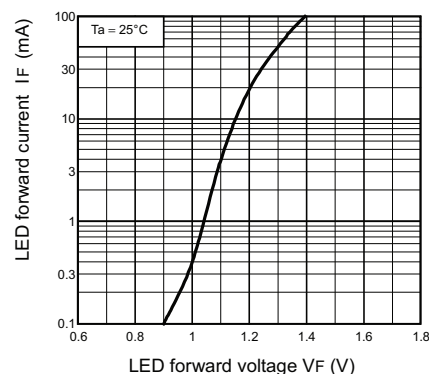
LED forward current vs. Ambient temperature
 $I_F - T_a$



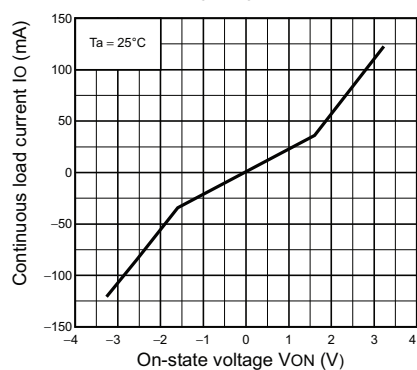
Continuous load current vs. Ambient temperature
 $I_O - T_a$



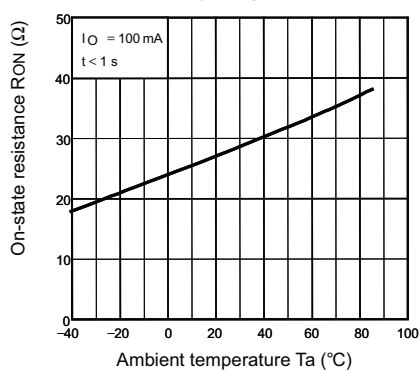
LED forward current vs. LED forward voltage
 $I_F - V_F$



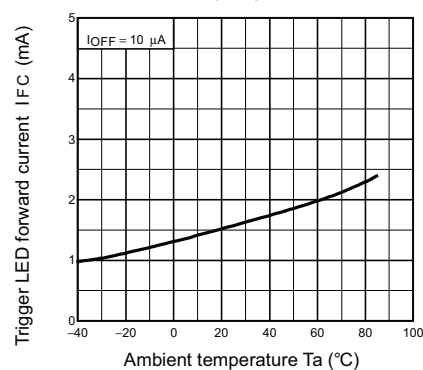
Continuous load current vs. On-state voltage
 $I_O - V_{ON}$



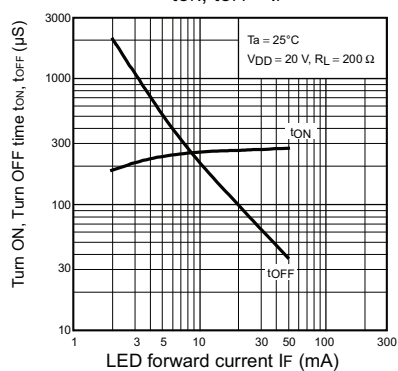
On-state resistance vs. Ambient temperature
 $R_{ON} - T_a$



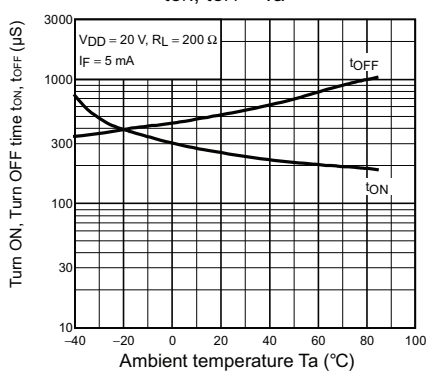
Trigger LED forward current vs. Ambient temperature
 $I_{FC} - T_a$



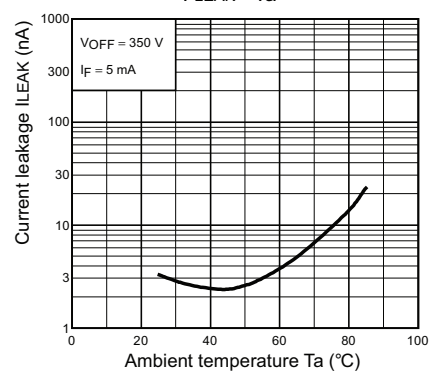
Turn ON, Turn OFF time vs. LED forward current
 $t_{ON}, t_{OFF} - I_F$



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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- Definitions:** The words used herein are defined as follows.
 - Terms:** These terms and conditions
 - Seller:** Omron Electronic Components LLC and its subsidiaries
 - Buyer:** The buyer of Products, including any end user in section III through VI
 - Products:** Products and/or services of Seller
 - Including:** Including without limitation
- Offer/Acceptance:** These Terms are deemed part of all quotations, acknowledgments, invoices, purchase orders and other documents, whether electronic or in writing, relating to the sale of Products by Seller. Seller hereby objects to any Terms proposed in Buyer's purchase order or other documents which are inconsistent with, or in addition to, these Terms.
- Distributor:** Any distributor shall inform its customer of the contents after and including section III of these Terms.

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- Taxes:** All taxes, duties and other governmental charges (other than general real property and income taxes), including any interest or penalties thereon, imposed directly or indirectly on Seller or required to be collected directly or indirectly by Seller for the manufacture, production, sale, delivery, importation, consumption or use of the Products sold hereunder (including customs duties and sales, excise, use, turnover and license taxes) shall be charged to and remitted by Buyer to Seller.
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 - Delivery and shipping dates are estimates only; and
 - Seller will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
- Claims:** Any claim by Buyer against Seller for shortage or damage to the Products occurring before delivery to the carrier or any claim related to pricing or other charges must be presented in detail in writing to Seller within 30 days of receipt of shipment.

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 - Energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
 - Systems, machines, and equipment that could present a risk to life or property.
- Prohibited Use:** NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
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- Performance Data:** Performance data is provided as a guide in determining suitability and does not constitute a warranty. It may represent the result of Seller's test conditions, and the users must correlate it to actual application requirements.
- Change In Specifications:** Product specifications and descriptions may be changed at any time based on improvements or other reasons. It is Seller's practice to change part numbers when published ratings or features are changed, or when significant engineering changes are made. However, some specifications of the Product may be changed without any notice.
- Errors And Omissions:** The information on Seller's website or in other documentation has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.
- Export Controls:** Buyer shall comply with all applicable laws, regulations and licenses regarding (a) export of the Products or information provided by Seller; (b) sale of Products to forbidden or other proscribed persons or organizations; (c) disclosure to non-citizens of regulated technology or information.

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 - (ii) Energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
 - (iii) Use in consumer products or any use in significant quantities.
 - (iv) Systems, machines and equipment that could present a risk to life or property. Please know and observe all prohibitions of use applicable to this product.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
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ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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

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