

MOS FET Relays

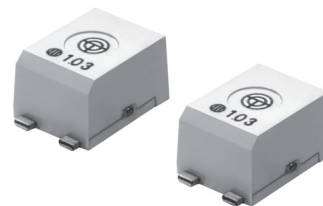
G3VM-21PR11

Smallest Class in market, USOP Package
MOS FET Relay with High-power, 0.9A Switching
in a 20-V Load Voltage Model.

- Dielectric strength of 500 Vrms between I/O
- $C_{OFF} = 0.8 \text{ pF}$ (typical) and $R_{ON} = 0.18 \Omega$ (typical).
- RoHS compliant.

Application Examples

- Semiconductor inspection tools
- Measurement devices and Data loggers
- Communication equipment



NEW

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

List of Models

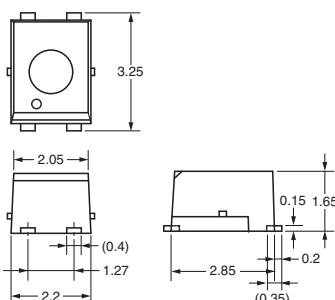
Package Type	Contact form	Terminals	Load voltage (peak value)	Model	Number per tape
USOP4	SPST-NO	Surface-mounting terminals	20 VAC or VDC	G3VM-21PR11	---
				G3VM-21PR11(TR05)	500
				G3VM-21PR11(TR)	1,500

Note: Tape-cut USOP's are packaged without humidity resistance. Use manual soldering to mount them. Refer to the common precautions contained in the Technical Users Guide, "MOS FET Relays, Technical Information".

Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-21PR11

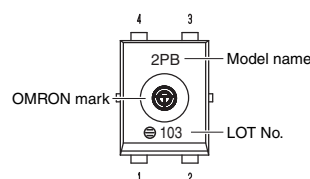
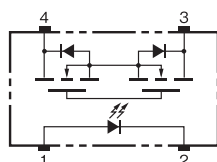


Note: The actual product is marked differently from the image shown here.

Weight: 0.03 g

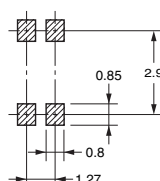
Terminal Arrangement/Internal Connections (Top View)

G3VM-21PR11



Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-21PR11



■ Absolute Maximum Ratings (Ta = 25°C)

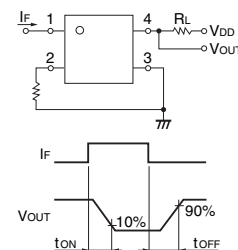
Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I_F	50	mA
	LED forward current reduction rate	$\Delta I_F/^{\circ}\text{C}$	-0.5	mA/ $^{\circ}\text{C}$
	LED reverse voltage	V_R	5	V
	Connection temperature	T_J	125	$^{\circ}\text{C}$
Output	Load voltage (AC peak/DC)	V_{OFF}	20	V
	Continuous load current (AC peak/DC)	I_O	900	mA
	ON current reduction rate	$\Delta I_{ON}/^{\circ}\text{C}$	-12	mA/ $^{\circ}\text{C}$
	Pulse ON current	I_{OP}	2,700	mA
	Connection temperature	T_J	125	$^{\circ}\text{C}$
Dielectric strength between input and output (See note 1.)		V_{I-O}	500	V_{rms}
Ambient operating temperature		T_a	-40 to +85	$^{\circ}\text{C}$
Ambient Storage temperature		T_{stg}	-40 to +125	$^{\circ}\text{C}$
Soldering temperature		---	260	$^{\circ}\text{C}$

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.

■ 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	---	15	---	pF
	Trigger LED forward current	I_{FT}	---	0.6	3	mA
Output	Maximum resistance with output ON	R_{ON}	---	0.18	0.22	Ω
	Current leakage when the relay is open	I_{LEAK}	---	---	1	nA
	Capacity between terminals	C_{OFF}	---	0.8	1.1	pF
Capacity between I/O terminals		C_{I-O}	---	0.4	---	pF
Insulation resistance between I/O terminals		R_{I-O}	1,000	---	---	M Ω
Turn-ON time		t_{ON}	---	0.5	2	ms
Turn-OFF time		t_{OFF}	---	0.1	1	ms

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



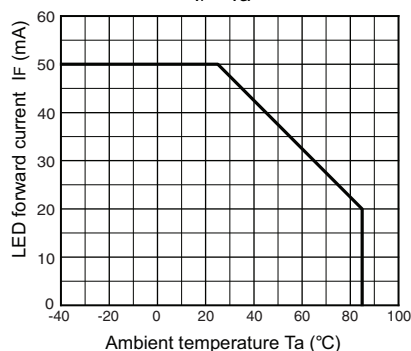
■ Recommended Operating Conditions

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

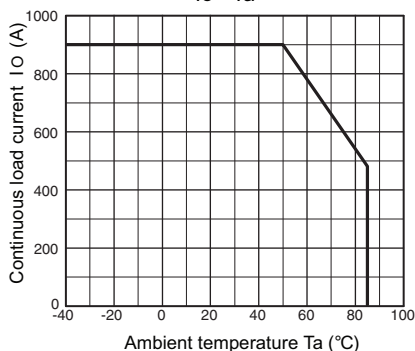
Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}	---	---	16	V
Operating LED forward current	I_F	5	7.5	20	mA
Continuous load current (AC peak/DC)	I_O	---	---	700	mA
Ambient Operating temperature	T_a	-20	---	65	$^{\circ}\text{C}$

■ Engineering Data

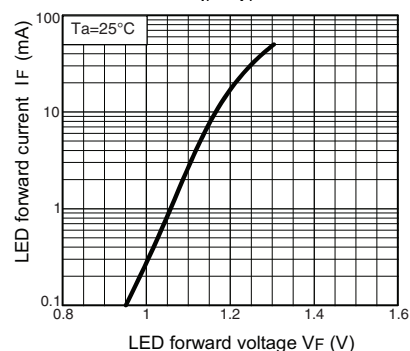
**LED forward current vs.
Ambient temperature**
 $I_F - T_a$



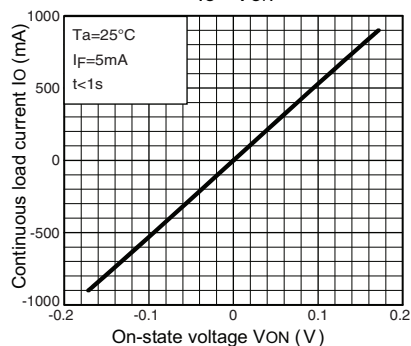
**Continuous load current vs.
Ambient temperature**
 $I_O - T_a$



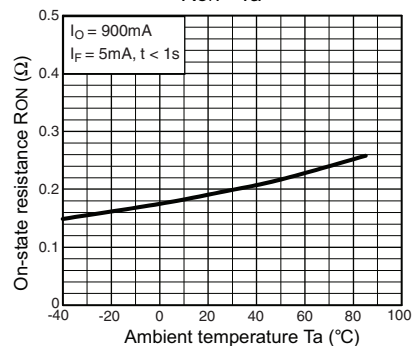
**LED forward current vs.
LED forward voltage**
 $I_F - V_F$



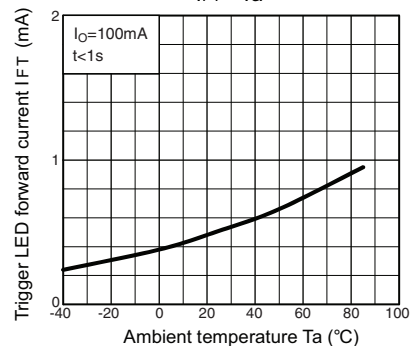
**Continuous load current vs.
On-state voltage**
 $I_O - V_{ON}$



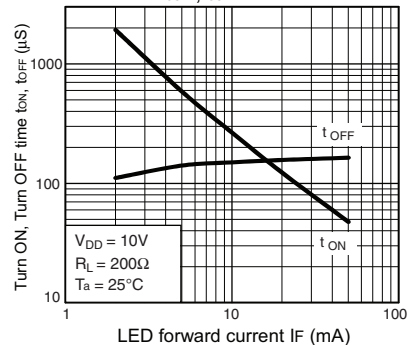
**On-state resistance vs.
Ambient temperature**
 $R_{ON} - T_a$



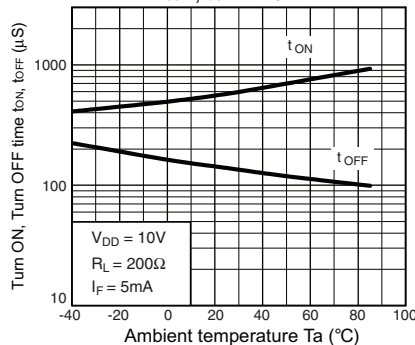
**Trigger LED forward current vs.
Ambient temperature**
 $I_{FT} - T_a$



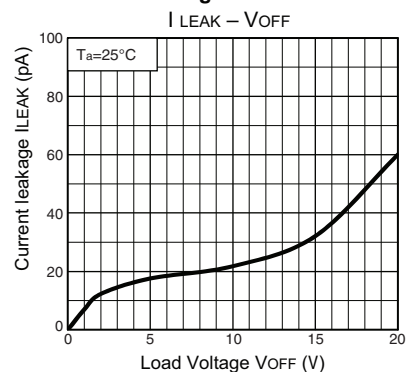
**Turn ON, Turn OFF time vs.
LED forward current**
 $t_{ON}, t_{OFF} - I_F$



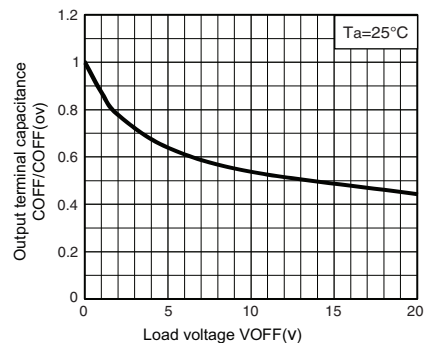
**Turn ON, Turn OFF time vs.
Ambient temperature**
 $t_{ON}, t_{OFF} - T_a$



**Current leakage vs.
Load voltage**
 $I_{LEAK} - V_{OFF}$



**Output terminal capacitance
COFF/COFF(ov) vs. Load voltage**
 $COFF - V_{OFF}$



All sales are subject to Omron Electronic Components LLC standard terms and conditions of sale, which can be found at http://www.components.omron.com/components/web/webfiles.nsf/sales_terms.html

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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

omron[®]
**OMRON ELECTRONIC
COMPONENTS LLC**
847-882-2288

Cat. No. K196-E-01

11/12

Specifications subject to change without notice

Printed in USA

OMRON ON-LINE

Global - <http://www.omron.com>

USA - <http://www.components.omron.com>