

MOS FET Relays

G3VM-21LR11

High-power, 0.9-A Switching with SSOP Package in a 20-V Load Voltage Model.

- RoHS compliant

Application Examples

- Semiconductor inspection tools
- Measurement devices
- Broadband systems
- Data loggers



NEW

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

List of Models

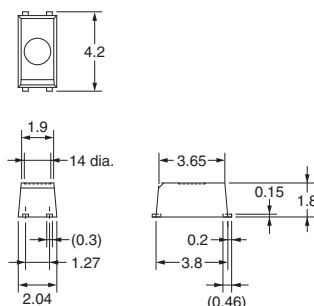
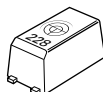
Contact form	Terminals	Load voltage (peak value)	Model	Number per tape
SPST-NO	Surface-mounting terminals	20 V	G3VM-21LR11	---
			G3VM-21LR11(TR05)	500
			G3VM-21LR11(TR)	1,500

Note: Use "TR05" instead of "TR" in the part number, to obtain reels with 500 pc/reel. (e.g., G3VM-21LR11(TR05))

Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-21LR11



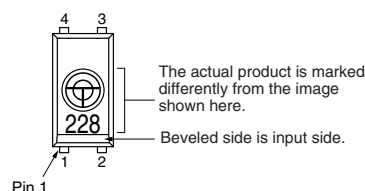
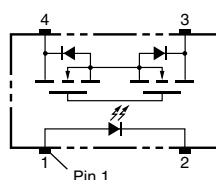
Note: The actual product is marked differently from the image shown here.

Note: A tolerance of ± 0.1 mm applies to all dimensions unless otherwise specified.

Weight: 0.03 g

Terminal Arrangement/Internal Connections (Top View)

G3VM-21LR11

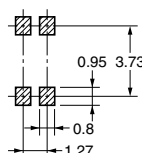


The actual product is marked differently from the image shown here.

Beveled side is input side.

Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-21LR11



Absolute Maximum Ratings (Ta = 25°C)

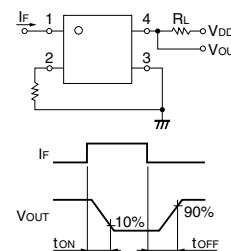
Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I_F	50	mA
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.5	mA/°C $T_a \geq 25^\circ\text{C}$
	LED reverse voltage	V_R	5	V
	Connection temperature	T_j	125	°C
Output	Load voltage (AC peak/DC)	V_{OFF}	20	V
	Continuous load current (AC peak/DC)	I_O	900	mA
	ON current reduction rate	$\Delta I_O/^\circ\text{C}$	-12	mA/°C $T_a \geq 50^\circ\text{C}$
	Connection temperature	T_j	125	°C
Dielectric strength between input and output (See note 1.)		V_{I-O}	1,500	V_{rms} AC for 1 min
Ambient operating temperature		T_a	-20 to +85	°C With no icing or condensation
Storage temperature		T_{stg}	-40 to +125	°C With no icing or condensation
Soldering temperature		---	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	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	---	15	---	pF $V = 0, f = 1 \text{ MHz}$
	Trigger LED forward current	I_{FT}	---	---	3.0	mA $I_O = 100 \text{ mA}$
Output	Maximum resistance with output ON	R_{ON}	---	0.18	0.22	Ω $I_F = 5 \text{ mA}, I_O = 900 \text{ mA}, t < 1 \text{ s}$
	Current leakage when the relay is open	I_{LEAK}	---	0.2	1.0	nA $V_{OFF} = 20 \text{ V}$
	Capacity between terminals	C_{OFF}	---	40	80	pF $V = 0, f = 100 \text{ MHz}, t < 1 \text{ s}$
Capacity between I/O terminals		C_{I-O}	---	0.3	---	pF $f = 1 \text{ MHz}, V_s = 0 \text{ V}$
Insulation resistance between I/O terminals		R_{I-O}	1,000	---	---	M Ω $V_{I-O} = 500 \text{ VDC}, R_{OH} \leq 60\%$
Turn-ON time		t_{ON}	---	0.3	2.0	ms $I_F = 5 \text{ mA}, R_L = 200 \Omega, V_{DD} = 10 \text{ V}$ (See note 2.)
Turn-OFF time		t_{OFF}	---	0.2	1.0	ms

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



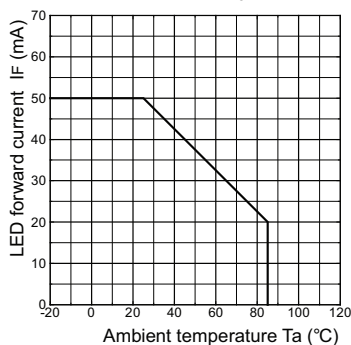
Recommended Operating Conditions

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

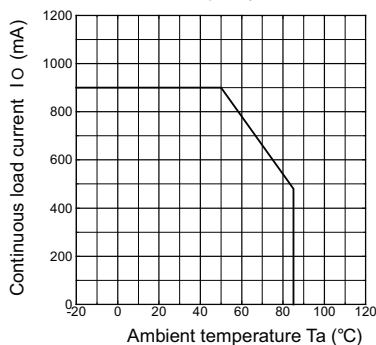
Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}	---	---	20	V
Operating LED forward current	I_F	---	---	20	mA
Continuous load current (AC peak/DC)	I_O	---	---	900	mA
Operating temperature	T_a	-20	---	65	°C

Engineering Data

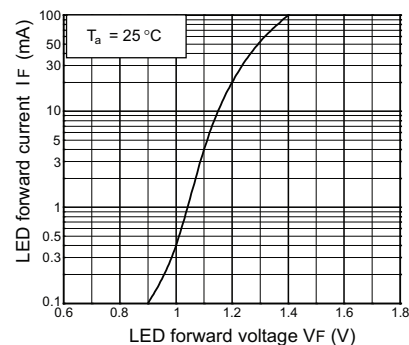
**LED forward current vs.
Ambient temperature**
IF - Ta



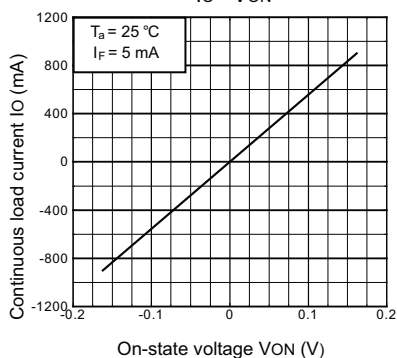
**Continuous load current vs.
Ambient temperature**
IO - Ta



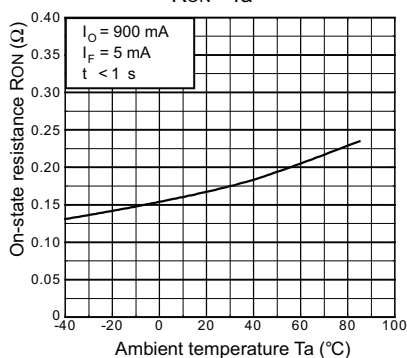
**LED forward current vs.
LED forward voltage**
IF - VF



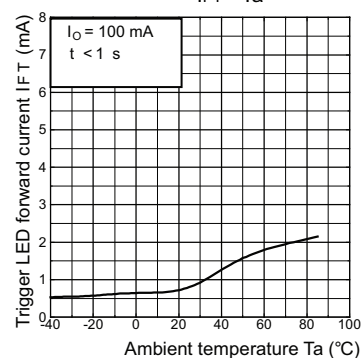
**Continuous load current vs.
On-state voltage**
IO - VON



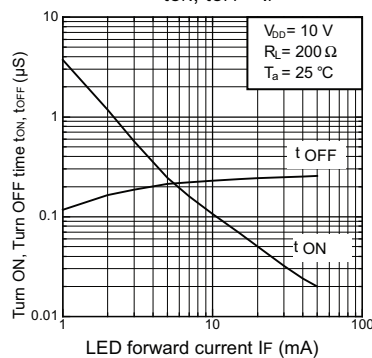
**On-state resistance vs.
Ambient temperature**
RON - Ta



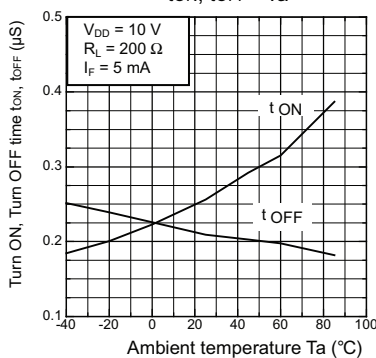
**Trigger LED forward current vs.
Ambient temperature**
IFT - Ta



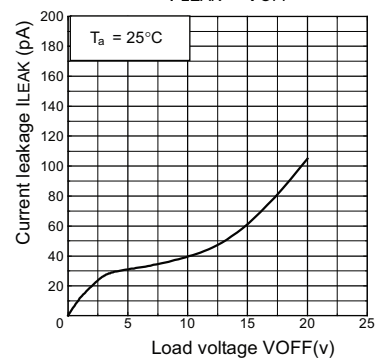
**Turn ON, Turn OFF time vs.
LED forward current**
ton, toff - IF



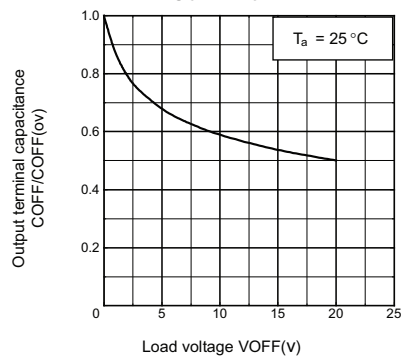
**Turn ON, Turn OFF time vs.
Ambient temperature**
ton, toff - Ta



**Current leakage vs.
Load voltage**
I LEAK - VOFF



**Output terminal capacitance
COFF/COFF(ov) vs. Load voltage**
COFF - VOFF



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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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