

MOS FET Relays

G3VM-41LR5

World's Smallest SSOP Package MOS FET Relay*
with Low Output Capacitance and ON Resistance
(C_{ON}R = 10pF•Ω) in a 40-V Load Voltage Model

- ON resistance of 1 Ω (typical) suppresses output signal attenuation.
- RoHS Compliant.

*Information correct as of May 2007, according to data obtained by OMRON.



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

■ Application Examples

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

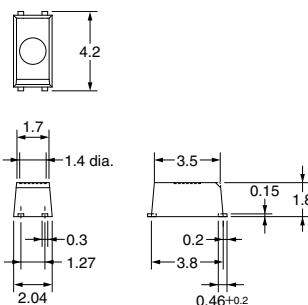
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per tape
SPST-NO	Surface-mounting terminals	40 VAC	G3VM-41LR5	---
			G3VM-41LR5(TR)	1,500
			G3VM-41LR5(TR05)	500
			G3VM-41LR5(TR10)	1,000

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-41LR5

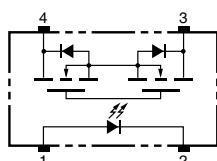


Note: A tolerance of ±0.1 mm applies to all dimensions unless otherwise specified.

Weight: 0.03 g

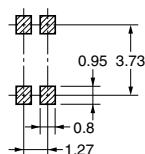
■ Terminal Arrangement/Internal Connections (Top View)

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■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

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■ Absolute Maximum Ratings (Ta = 25°C)

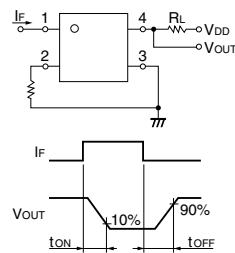
Item	Symbol	Rating	Unit	Measurement conditions
Input	LED forward current	I _F	50	mA
	Repetitive peak LED forward current	I _{FP}	1	A
	LED forward current reduction rate	Δ I _F /°C	-0.5	mA/°C
	LED reverse voltage	V _R	5	V
	Connection temperature	T _j	125	°C
Output	Load voltage (AC peak/DC)	V _{OFF}	40	V
	Continuous load current	I _O	300	mA
	ON current reduction rate	Δ I _{ON} /°C	-3.0	mA/°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
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 (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	Symbol	Minimum	Typical	Maximum	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	μA V _R = 5 V
	Capacity between terminals	C _T	---	15	---	pF V = 0, f = 1 MHz
	Trigger LED forward current	I _{FT}	---	---	4	mA I _O = 100 mA
Output	Maximum resistance with output ON	R _{ON}	---	1.0	1.5	Ω I _F = 5 mA, I _O = 300 mA, t = 10 ms
	Current leakage when the relay is open	I _{LEAK}	---	0.2	1.0	nA V _{OFF} = 30 V, T _a = 50°C
	Capacity between terminals	C _{OFF}	---	10	14	pF V = 0, f = 100 MHz, t < 1 s
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	---	---	MΩ	V _{I-O} = 500 VDC, R _{OH} ≤ 60%
Turn-ON time	t _{ON}	---	0.2	0.5	ms	I _F = 10 mA, R _L = 200 Ω, V _{DD} = 20 V (See note 2.)
Turn-OFF time	t _{OFF}	---	0.2	0.5	ms	

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

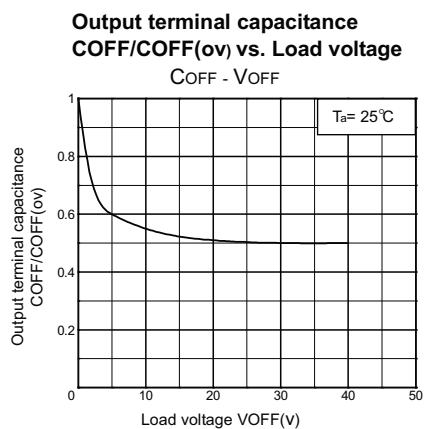
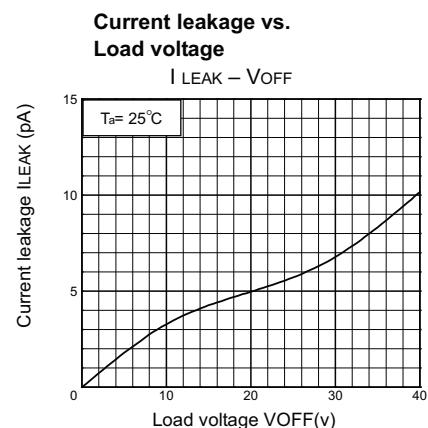
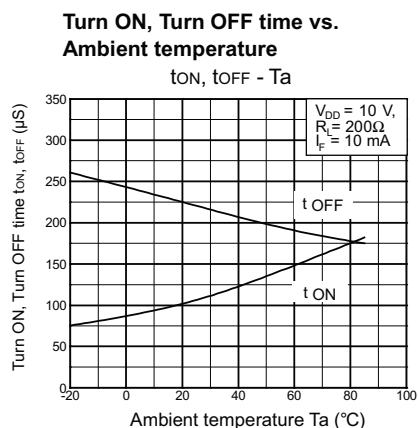
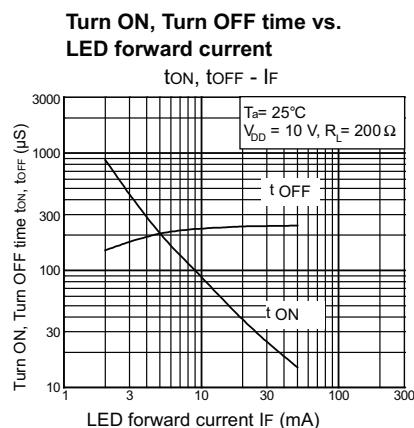
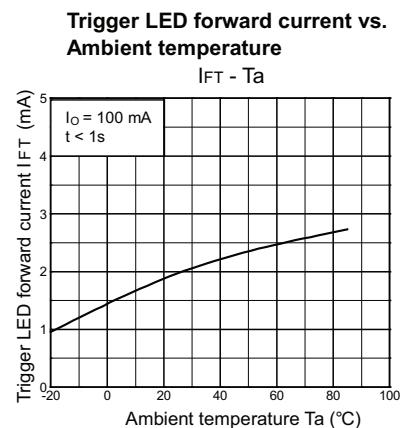
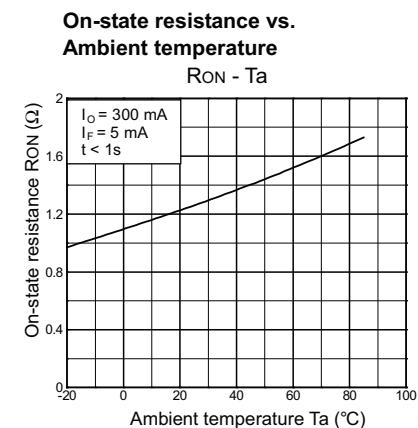
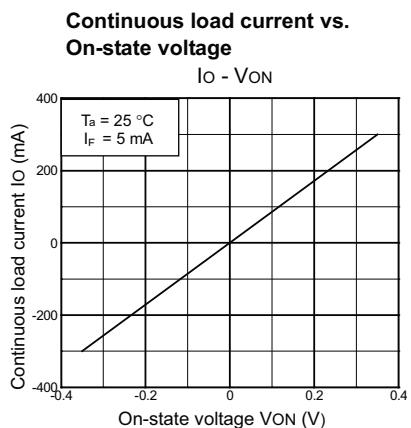
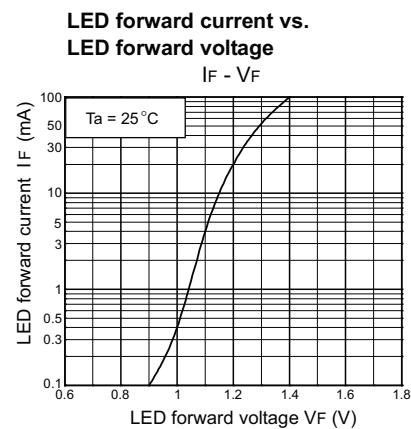
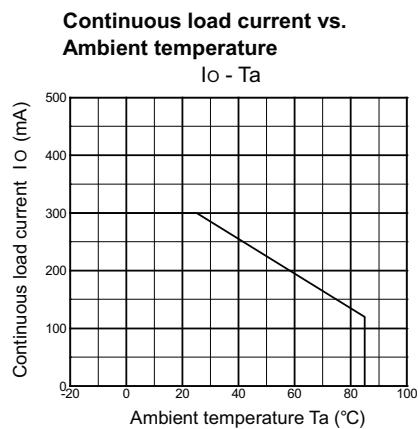
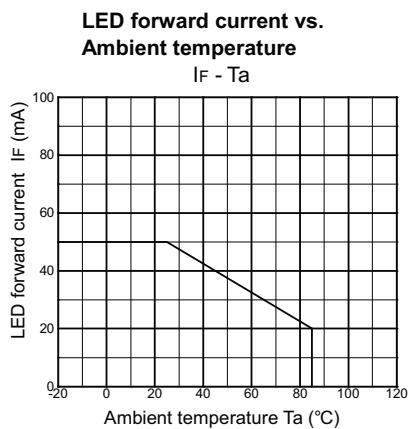


■ Recommended Operating Conditions

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}	---	---	32	V
Operating LED forward current	I _F	10	---	30	mA
Continuous load current (AC peak/DC)	I _O	---	---	300	mA
Operating temperature	T _a	25	---	60	°C

■ Engineering Data



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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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