World's Smallest SSOP Package MOSFET Relays (COFF (typical): 0.45 pF, RON (typical): 12 Ω) with Low Output Capacitance and ON Resistance (CxR = 5 pF•Ω) in a 40-V Load Voltage Model.

NEW

- Output capacitance of 0.45 pF (typical) allows high frequency applications.
- RoHS compliant

Note. Information correct as of November 2005, 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
- Broadband systems
- Data loggers

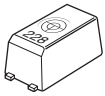
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Minimum packaging unit
				Number per tape
SPST-NO	Surface-mounting terminals	40 VAC	G3VM-41LR10	-
			G3VM-41LR10(TR)	1,500

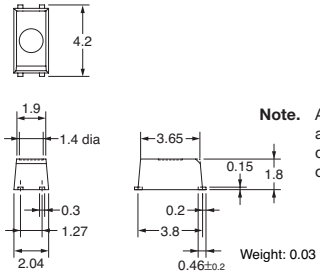
■ Dimensions

Note. All units are in millimeters unless otherwise indicated.

G3VM-41LR10



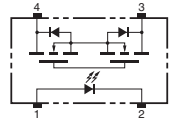
Note. The actual product is marked differently from the image shown here.



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

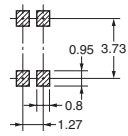
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-41LR10



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

G3VM-41LR10



■ Absolute Maximum Ratings (Ta = 25°C)

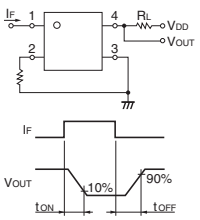
Item		Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I_F	30	mA	
	LED forward current reduction rate	ΔI_F/°C	−0.3	mA/°C	Ta ≥ 25°C
	LED reverse voltage	V_R	5	V	
	Connection temperature	T_J	125	°C	
Output	Output dielectric strength	V_{OFF}	40	V	
	Continuous load current	I_O	120	mA	
	ON current reduction rate	ΔI_{ON}/°C	−1.2	mA/°C	Ta ≥ 25°C
	Connection temperature	T_J	125	°C	
Dielectric strength between input and output (See note 1.)		V_{I-O}	1,500	Vrms	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	1.15	1.35	1.45	V	I_F = 5 mA
	Reverse current	I_R	—	—	10	μA	V_R = 5 V
	Capacity between terminals	C_T	—	70	—	pF	V = 0, f = 1 MHz
	Trigger LED forward current	I_{FT}	—	—	3	mA	I_O = 100 mA
Output	Maximum resistance with output ON	R_{ON}	—	12	14	Ω	I_F = 5 mA, I_O = 120 mA, t < 1 s
	Current leakage when the relay is open	I_{LEAK}	—	10	200	pA	V_{OFF} = 35 V, Ta = 25°C
	Capacity between terminals	C_{OFF}	—	0.45	0.8	pF	V = 0, f = 100 MHz, t = < 1 s
Capacity between I/O terminals		C_{I-O}	—	0.3	—	pF	f = 1 MHz, Vs = 0 V
Insulation resistance between I/O terminals		R_{I-O}	1,000	—	—	MΩ	V_{I-O} = 500 VDC, RoH ≤ 60%
Turn-ON time		tON	—	—	0.2	ms	I_F = 5 mA, R_L = 200 Ω, V_{DD} = 10 V (See note 2.)
Turn-OFF time		tOFF	—	—	0.3	ms	

Note 2. Turn-ON and Turn-OFF Times



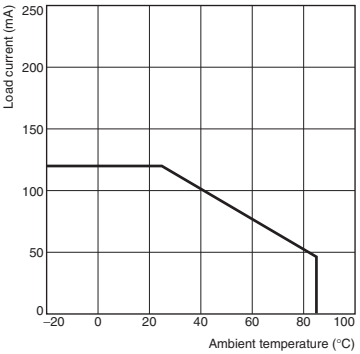
■ Recommended Operating Conditions

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

Item	Symbol	Minimum	Typical	Maximum	Unit
Output dielectric strength	V_{DD}	—	—	32	V
Operating LED forward current	I_F	—	—	20	mA
Continuous load current	I_O	—	—	120	mA
Operating temperature	T_a	25	—	60	°C

■ Engineering Data

Load Current vs. Ambient Temperature
G3VM-41LR10



■ Safety Precautions

Refer to "Common Precautions" for all G3VM models.

CAT. No. J964-E2-01