

World's Smallest SSOP Package
MOSFET Relays (COFF (typical):
0.45 pF, RON (typical): 12 Ω) with
Low Output Capacitance and ON
Resistance ($C_{xR} = 5 \text{ pF} \cdot \Omega$) in a 40-V
Load Voltage Model.

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



NEW

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

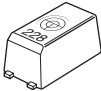
■ List of Models

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

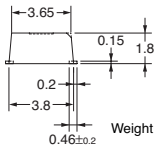
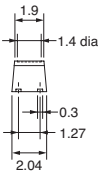
■ Dimensions

Note. All units are in millimeters unless otherwise indicated.

G3VM-41LR10



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

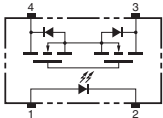


Note. A tolerance of $\pm 0.1 \text{ mm}$ applies to all dimensions unless otherwise specified.

Weight: 0.03

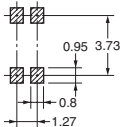
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-41LR10



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

G3VM-41LR10



■ Absolute Maximum Ratings (Ta = 25°C)

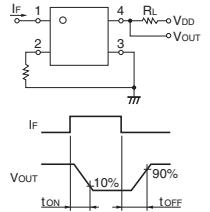
Item	Symbol	Rating	Unit	Measurement Conditions
Input	LED forward current	I_F	30	mA
	LED forward current reduction rate	$\Delta I_F/^\circ\text{C}$	-0.3	mA/°C
	LED reverse voltage	V_R	5	V
	Connection temperature	T_J	125	°C
Output	Output dielectric strength	V_{OFF}	40	V
	Continuous load current	I_O	120	mA
	ON current reduction rate	$\Delta I_{ON}/^\circ\text{C}$	-1.2	mA/°C
	Connection temperature	T_J	125	°C
Dielectric strength between input and output (See note 1.)		V_{I-O}	1,500	Vrms
Ambient operating temperature		T_a	-20 to +85	°C
Storage temperature		T_{stg}	-40 to +125	°C
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	$I_F = 5\text{ mA}$
	Reverse current	I_R	---	---	10	μA	$V_R = 5\text{ V}$
	Capacity between terminals	C_T	---	70	---	pF	$V = 0, f = 1\text{ MHz}$
	Trigger LED forward current	I_{FT}	---	---	3	mA	$I_O = 100\text{ mA}$
Output	Maximum resistance with output ON	R_{ON}	---	12	14	Ω	$I_F = 5\text{ mA},$ $I_O = 120\text{ mA}, t < 1\text{ s}$
	Current leakage when the relay is open	I_{LEAK}	---	10	200	μA	$V_{OFF} = 35\text{ V}, T_A = 25^\circ\text{C}$
	Capacity between terminals	C_{OFF}	---	0.45	0.8	pF	$V = 0, f = 100\text{ MHz},$ $t \leq < 1\text{ s}$
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	$V_{I-O} = 500\text{ VDC},$ $R_{RH} \leq 60\%$
Turn-ON time		t_{ON}	---	---	0.2	ms	$I_F = 5\text{ mA}, R_L = 200\,\Omega,$ $V_{D0} = 10\text{ V (See note 2)}$
Turn-OFF time		t_{OFF}	---	---	0.3	ms	

Note 2. Turn-ON and Turn-OFF Times



■ Recommended Operating Conditions

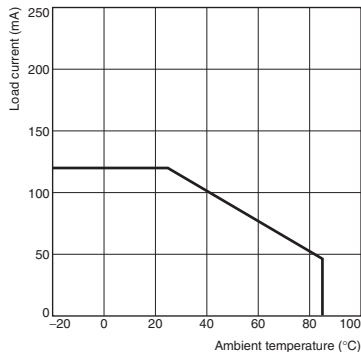
Use the G3VM under the following conditions so that the Relay will operate properly.

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	—	80	°C

■ Engineering Data

Load Current vs. Ambient Temperature

G3VM-41LR10



■ Safety Precautions

Refer to "Common Precautions" for all G3VM models.