MOS FET Relays G3VM-81HR

High-capacity MOS FET Relay Allowing Switching of a 1.25-A Continuous Load Current with a 80-V Load Voltage, 6-pin SOP Package.

- Continuous load current of 1,250 mA.
- Dielectric strength of 1,500 Vrms between I/O.
- RoHS Compliant.

■ Application Examples

- · Broadband systems
- Measurement devices
- Data loggers
- Amusement machines



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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 stick	Number per tape
SPST-NO		80 VAC	G3VM-81HR	75	
	terminals		G3VM-81HR(TR)		2,500

■ Dimensions

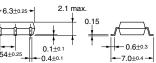
Note: All units are in millimeters unless otherwise indicated.

G3VM-81HR



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

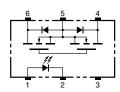




Weight: 0.13 g

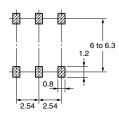
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-81HR



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

G3VM-81HR



■ 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	Α	100 μs pulses, 100 pps
	LED forward current reduction rate	Δ I _F /°C	-0.5	mA/°C	$T_a \ge 25^{\circ}C$
	LED reverse voltage	V_R	5	V	
	Connection temperature	T _j	125	°C	
Output	Load voltage (AC peak/DC)	V_{OFF}	80	V	
	Continuous load current	Io	1,250	mA	
	ON current reduction rate	Δ I _{ON} /°C	-12.5	mA/°C	$T_a \ge 25^{\circ}C$
	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

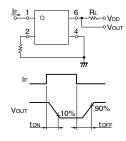
Note:

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	Mini- mum	Typical	Maxi- mum	Unit	Measurement conditions
Input LED forward voltage		V _F	1.0	1.15	1.3	٧	I _F = 10 mA
	Reverse current	I _R			10	μА	V _R = 5 V
	Capacity between terminals	C _T		15		pF	V = 0, f = 1 MHz
	Trigger LED forward current	I _{FT}		2	5	mA	I _O = 1,250 mA
Output	Maximum resistance with output ON	R _{ON}		0.11	0.15	Ω	I _F = 5 mA, I _O = 1,250 mA
	Current leakage when the relay is open	I _{LEAK}		1.2	1.5	nA	V _{OFF} = 20 V, T _a = 50°C
	Capacity between terminals	C _{OFF}		460	1,000	pF	V = 0, f = 100 MHz
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			ΜΩ	$V_{I-O} = 500 \text{ VDC},$ $R_{oH} \le 60\%$
Turn-ON time		t _{ON}		2.0	3.0	ms	$I_F = 5 \text{ mA}, R_L = 200 \Omega,$
Turn-OFF time		t _{OFF}		0.7	1.0	ms	V _{DD} = 20 V (See note 2.)

2. Turn-ON and Turn-OFF Times



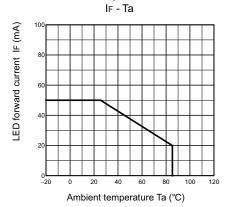
■ Recommended Operating Conditions

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

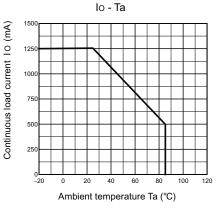
Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}			64	V
Operating LED forward current	I _F	5		30	mA
Continuous load current (AC peak/DC)	Io			1,250	mA
Operating temperature	T _a	25		60	°C

■ Engineering Data

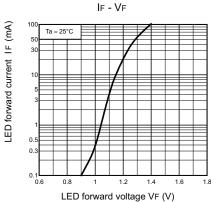
LED forward current vs. Ambient temperature



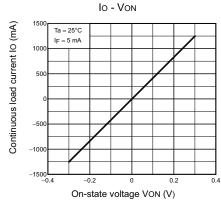
Continuous load current vs. Ambient temperature



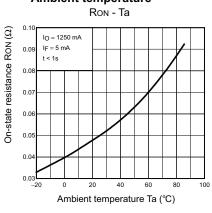
LED forward current vs. LED forward voltage



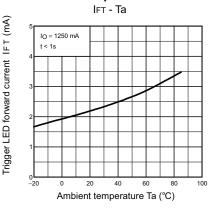
Continuous load current vs. On-state voltage



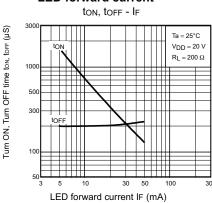
On-state resistance vs. Ambient temperature



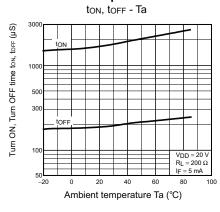
Trigger LED forward current vs. Ambient temperature



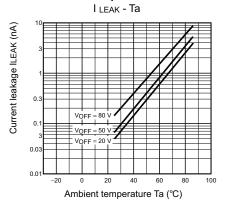
Turn ON, Turn OFF time vs. LED forward current



Turn ON, Turn OFF time vs. Ambient temperature



Current leakage vs. Ambient temperature





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Specifications subject to change without notice

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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