MOS FET Relays G3VM-201H1

Slim, 2.1-mm High, MOS FET Relay with Miniature, Flat, 6-pin SOP Package

- 6-pin SOP package in the 200-V load voltage series.
- Continuous load current of 200 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 Surface-mounting terminals		200 VAC	G3VM-201H1	75	
			G3VM-201H1(TR)		2,500

■ Dimensions

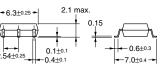
Note: All units are in millimeters unless otherwise indicated.

G3VM-201H1



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

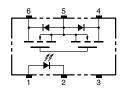




Weight: 0.13 g

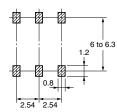
■ Terminal Arrangement/Internal Connections (Top View)

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

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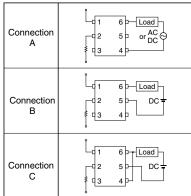


■ Absolute Maximum Ratings (Ta = 25°C)

ltem		Symbol	Rating	Unit	Measurement conditions	
Input LED forward current		urrent	I _F	50	mA	
	Repetitive peak LED forward current		I _{FP}	1	Α	100 μs pulses, 100 pps
	LED forward current reduction rate LED reverse voltage		Δ I _F /°C	-0.5	mA/°C	$T_a \ge 25^{\circ}C$
			V_R	5	V	
	Connection temperature		T _j	125	°C	
Output	Output Load voltage (AC peak		V_{OFF}	200	V	
	Continuous load current	Connection A	I _o	200	mA	
		Connection B		200		
		Connection C		400		
	ON current reduction rate	Connection A	Δ $I_{ON}/^{\circ}C$	-2.0	mA/°C	$T_a \ge 25^{\circ}C$
		Connection B		-2.0		
		Connection C		-4.0		
	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	-40 to +85	°C	With no icing or condensation
Storage temperature			T _{stg}	-55 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.

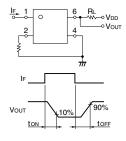
Connection Diagram



■ 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	V	I _F = 10 mA
	Reverse current		I _R			10	μΑ	V _R = 5 V
Capacity between termin		ninals	C _T		30		pF	V = 0, f = 1 MHz
	Trigger LED forward current		I _{FT}		1	3	mA	I _O = 200 mA
Output	Maximum resistance with output ON	Connection A	R _{on}		5	8	Ω	I _F = 5 mA, I _O = 200 mA
		Connection B			3	5	Ω	I _F = 5 mA, I _O = 200 mA
		Connection C			1.5		Ω	I _F = 5 mA, I _O = 400 mA
	Current leakage when the relay is open		I _{LEAK}		0.00035	1.0	μΑ	V _{OFF} = 200 V
	Capacity between terminals A Connection		C _{OFF}		100		pF	V = 0, f = 1MHz
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	$\begin{aligned} &V_{\text{I-O}} = 500 \text{ VDC}, \\ &R_{\text{oH}} \leq 60\% \end{aligned}$
Turn-ON time			t _{ON}		0.6	1.5	ms	$I_F = 5 \text{ mA}, R_L = 200 \Omega,$
Turn-OFF time			t _{OFF}		0.1	1.0	ms	$V_{DD} = 20 \text{ V (See note 2)}$

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



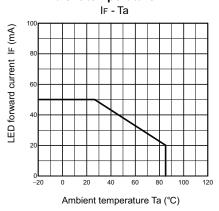
■ Recommended Operating Conditions

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

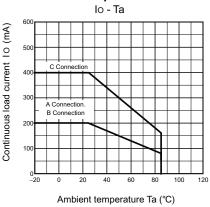
Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}			160	V
Operating LED forward current	I _F	5	7.5	25	mA
Continuous load current (AC peak/DC)	Io			130	mA
Operating temperature	T _a	- 20		60	°C

■ Engineering Data

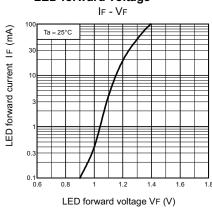
LED forward current vs. Ambient temperature



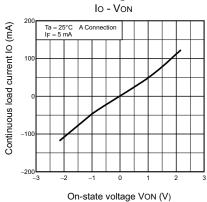
Continuous load current vs. Ambient temperature



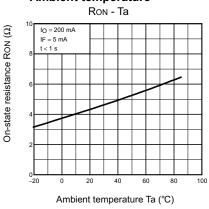
LED forward current vs. LED forward voltage



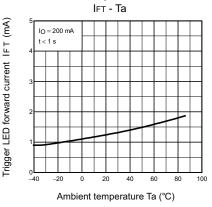
Continuous load current vs. On-state voltage



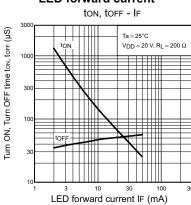
On-state resistance vs. Ambient temperature



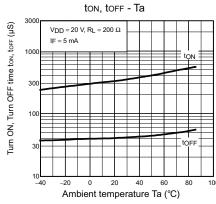
Trigger LED forward current vs. Ambient temperature



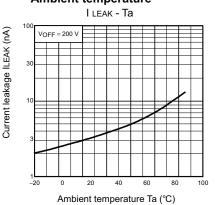
Turn ON, Turn OFF time vs. LED forward current



Turn ON, Turn OFF time vs. Ambient temperature



Current leakage vs. Ambient temperature





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