

■Absolute Maximum Ratings (Ta = 25°C)

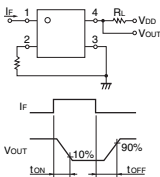
Item		Symbol	G3VM-41PR12	G3VM-41PR6	G3VM-41PR10	G3VM-41PR11	G3VM-41PR5	G3VM-51PR	Unit	Measurement conditions
Input	LED forward current	I _F	50						mA	
	LED forward current reduction rate	ΔI _F /°C	-0.5						mA/°C	Ta≥25°C
	LED reverse voltage	V _R	5						V	
	Connection temperature	T _J	125						°C	
Output	Load voltage (AC peak/DC)	V _{OFF}	40					50	V	
	Continuous load current (AC peak/DC)	I _o	100	120	140	300	mA			
	ON current reduction rate	ΔI _o /°C	-1.0	-1.2	-1.4	-3	mA/°C	Ta≥25°C		
	Pulse ON current	I _{op}	300	360	420	900	mA	t=100 ms, Duty=1/10		
	Connection temperature	T _J	125						°C	
	Dielectric strength between I/O (See note 1.)	V _{IO}	500						Vrms	AC for 1 min
	Ambient operating temperature	T _a	-40 to +85						°C	
Ambient 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.

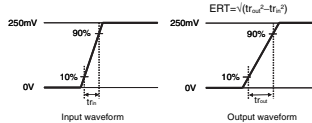
■Electrical Characteristics (Ta = 25°C)

Item		Symbol	G3VM-41PR12 G3VM-41PR6 G3VM-41PR10 G3VM-41PR11 G3VM-41PR5 G3VM-51PR								Unit	Measurement conditions		
Input	LED forward voltage	V _F	Minimum	1.0								V	I _F =10 mA	
		Typical	1.15											
		Maximum	1.3											
	Reverse current	I _R	Maximum	10								μA	V _R =5 V	
	Capacitance between terminals	C _T	Typical	15								pF	V=0, f=1 MHz	
	Trigger LED forward current	I _{FT}	Typical	1.0	0.6	0.5	1.0	0.6	0.5	mA	I _O =100 mA			
Maximum		3												
Output	Release LED forward current	I _{FC}	Minimum	0.1						0.2	mA	I _{OFF} =10 μA		
	Maximum resistance with output ON	R _{ON}	Typical	15	10	12	7	1		Ω	I _F =5 mA, t<1 s I _O =Continuous load current ratings			
		Maximum	20	15	14	10	1.5							
	Current leakage when the relay is open	I _{LEAK}	Maximum	1	0.2	1					nA	V _{OFF} =Load voltage ratings		
		Typical	0.3	1	0.45	0.7	10	12						
	Capacitance between terminals	C _{OFF}	Maximum	0.6	2	0.8	1.3	14	—	pF	V=0, f=100 MHz, t<1 s			
		Typical	0.3	1	0.45	0.7	10	12						
	Capacitance between I/O terminals		C _{I-O}	Typical	0.4								pF	f=1 MHz, V _S =0 V
	Insulation resistance between I/O terminals	R _{I-O}	Minimum	1000								MΩ	V _{I-O} =500 VDC, R _{oH} ≤60%	
			Typical	10 ⁸										
Turn-ON time	t _{ON}	Typical	0.04	0.05	0.03	0.04	0.2			ms	I _F =5 mA, R _L =200 Ω, V _{OD} =20 V (See note2.)			
		Maximum	0.2					0.5						
Turn-OFF time	t _{OFF}	Typical	0.12	0.16	0.2	0.14	0.2	0.1		ps	I _F =5 mA, V _{OD} =0.25 V, Tr(in)=25 ps (See Note.3)			
		Maximum	0.2	0.3			0.2	0.3	0.4					
Equivalent rise time	ERT	Typical	—							40	ps			
		Maximum	—							90				

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



Note: 3. Equivalent Rise Time



■Recommended Operating Conditions

For usage with high reliability, Recommended Operation Conditions is a measure that takes into account the derating of Absolute Maximum Ratings and Electrical Characteristics.

Each item on this list is an independent condition, so it is not simultaneously satisfy several conditions.

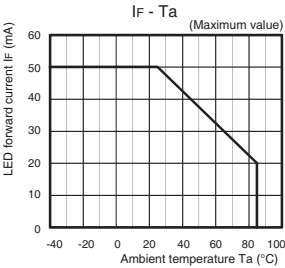
Item	Symbol		G3VM-41PR12	G3VM-41PR6	G3VM-41PR10	G3VM-41PR11	G3VM-41PR5	G3VM-51PR	Unit	
Load voltage (AC peak/DC)	V _{OD}	Maximum	32						40	V
Operating LED forward current	I _F	Minimum	5						mA	
		Typical	7.5							
		Maximum	20							
Continuous load current (AC peak/DC)	I _O	Maximum	100	120	140	300				
Ambient operating temperature	T _a	Minimum	-20						°C	
		Maximum	65							

G3VM-41PR□/51PR

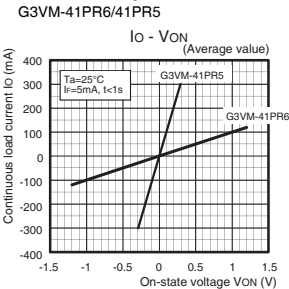
MOS FET Relays

■Engineering Data

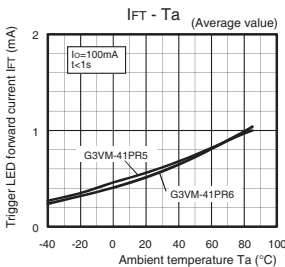
●LED forward current vs. Ambient temperature



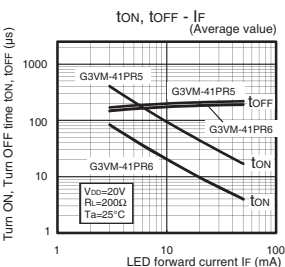
●Continuous load current vs. On-state voltage



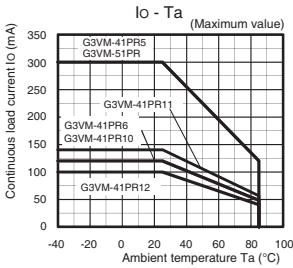
●Trigger LED forward current vs. Ambient temperature



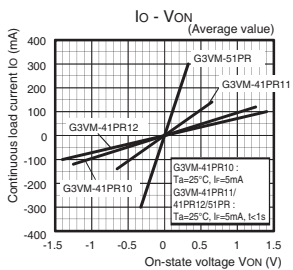
●Turn ON, Turn OFF time vs. LED forward current



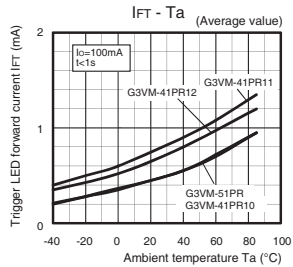
●Continuous load current vs. Ambient temperature



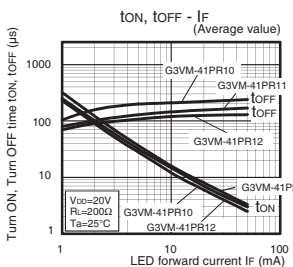
●On-state resistance vs. Ambient temperature



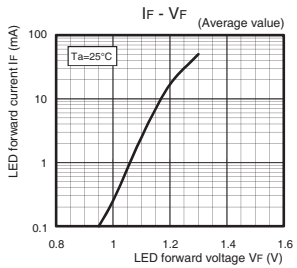
●Trigger LED forward current vs. Ambient temperature



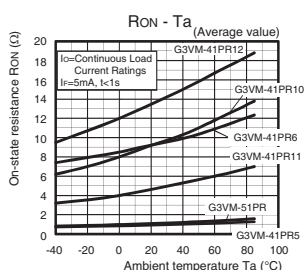
●Turn ON, Turn OFF time vs. LED forward current



●LED forward current vs. LED forward voltage



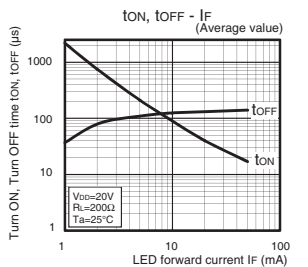
●On-state resistance vs. Ambient temperature



●Trigger LED forward current vs. Ambient temperature



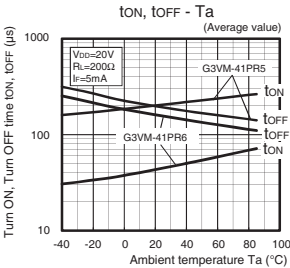
●Turn ON, Turn OFF time vs. LED forward current



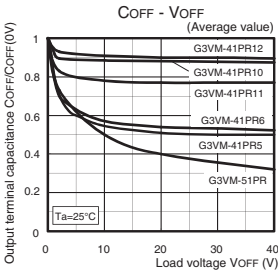
Engineering Data

● Turn ON, Turn OFF time vs. Ambient temperature

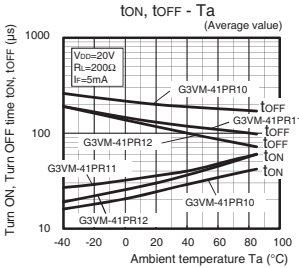
G3VM-41PR6/41PR5



● Output terminal capacitance vs. Load voltage

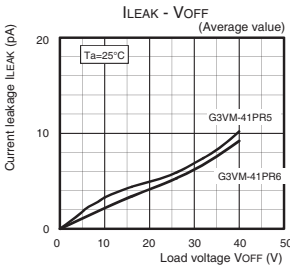


G3VM-41PR12/41PR10/41PR11

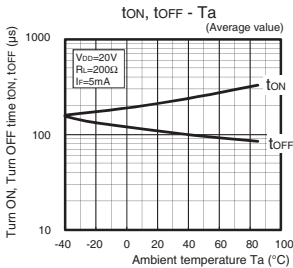


● Current leakage vs. Load voltage

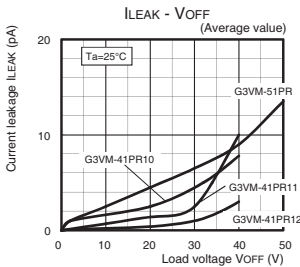
G3VM-41PR6/41PR5



G3VM-51PR



G3VM-41PR12/41PR10/41PR11/51PR



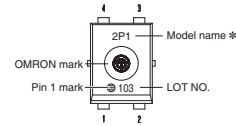
G3VM-41PR□/51PR

MOS FET Relays

■Appearance / Terminal Arrangement / Internal Connections

●Appearance

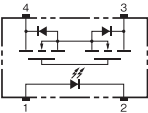
USOP (Ultra Small Outline Package)
USOP 4-pin



* Actual model name marking for each model

Model	Marking
G3VM-41PR12	4PC
G3VM-41PR6	4P6
G3VM-41PR10	4PA
G3VM-41PR11	4PB
G3VM-41PR5	4P5
G3VM-51PR	5P0

●Terminal Arrangement/Internal Connections (Top View)

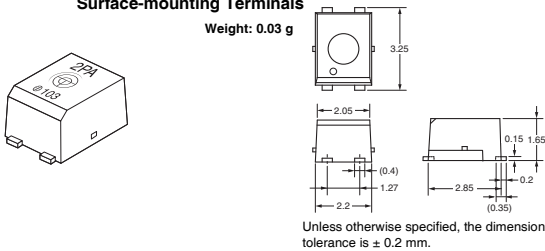


Note: 1. The actual product is marked differently from the image shown here.
Note: 2. "G3VM" does not appear in the model number on the Relay.

■Dimensions (Unit: mm)

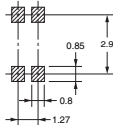
Surface-mounting Terminals

Weight: 0.03 g



Unless otherwise specified, the dimensional tolerance is ± 0.2 mm.

Actual Mounting Pad Dimensions (Recommended Value, Top View)



Unless otherwise specified, the dimensional tolerance is ± 0.2 mm.

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

■Approved Standards

UL recognized

Approved Standards	Contact form	File No.
UL recognized	1a (SPST-NO)	E80555

■Safety Precautions

• Refer to the *Common Precautions for All MOS FET Relays* for precautions that apply to all MOS FET Relays.

Mouser Electronics

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[G3VM-41PR5\(TR05\)](#)