

G3VM-21AR/DR

MOS FET Relays

Higher power, 3-A switching with a 20-V
load voltage, DIP package.
Low 40 mΩ ON Resistance.

- Continuous load current of 3 A.
- Switches minute analog signals.
- Dielectric strength of 2,500 Vrms between I/O.

RoHS compliant

Application Examples

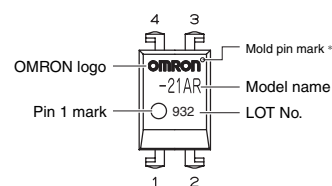
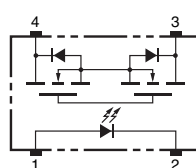
- Communication equipment
- Test & Measurement equipment
- Security equipment
- Factory Automation equipment
- Power circuit



NEW

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

Terminal Arrangement/Internal Connections



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* The indentation in the corner diagonally opposite from the pin 1 mark is from a pin on the mold.

List of Models

Package type	Contact form	Terminals	Load voltage (peak value) *	Model	Minimum package quantity	
					Number per stick	Number per tape and reel
DIP4	1a (SPST-NO)	PCB terminals	20 V	G3VM-21AR	100	---
		Surface-mounting terminals		G3VM-21DR		
				G3VM-21DR (TR)	---	1,500

* The AC peak and DC value are given for the load voltage.

Absolute Maximum Ratings (Ta = 25°C)

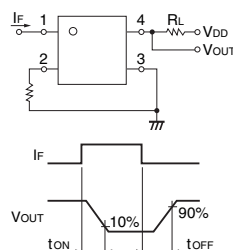
Item		Symbol	Rating	Unit	Measurement conditions
Input	LED forward current	IF	30	mA	
	Repetitive peak LED forward current	IFP	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate	ΔIF/°C	-0.3	mA/°C	Ta ≥ 25°C
	LED reverse voltage	VR	5	V	
Output	Connection temperature	TJ	125	°C	
	Load voltage (AC peak/DC)	VOFF	20	V	
	Continuous load current (AC peak/DC)	IO	3	A	
	ON current reduction rate	ΔIO/°C	-30	mA/°C	Ta ≥ 25°C
	Pulse ON current	IOP	9	A	t = 100 ms, Duty = 1/10
	Connection temperature	TJ	125	°C	
Dielectric strength between I/O (See note 1.)		VI-O	2500	Vrms	AC for 1 min
Operating temperature		Ta	-40 to +85	°C	With no icing or condensation
Storage temperature		Tstg	-55 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	VF	1.18	1.33	1.48	V	IF = 10 mA
	Reverse current	IR	---	---	10	μA	VR = 5 V
	Capacity between terminals	CT	---	70	---	pF	V = 0, f = 1 MHz
	Trigger LED forward current	IFT	---	0.7	3	mA	IO = 1 A
Output	Maximum resistance with output ON	RON	---	40	80	mΩ	IF = 5 mA, IO = 2 A, t < 1 s
	Current leakage when the relay is open	ILEAK	---	---	1.0	μA	VOFF = 20 V
	Capacity between terminals	COFF	---	300	---	pF	V = 0, f = 1 MHz
	Capacity between I/O terminals	CI-O	---	0.8	---	pF	f = 1 MHz, Vs = 0 V
	Insulation resistance between I/O terminals	RI-O	1000	---	---	MΩ	VI-O = 500 VDC, RoH ≤ 60%
Turn-ON time		TON	---	1	5	ms	IF = 5 mA, RL = 200 Ω, VDD = 20 V (See note 2.)
Turn-OFF time		TOFF	---	0.3	1	ms	

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



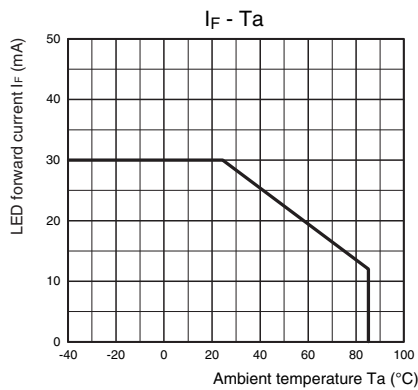
Recommended Operating Conditions

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

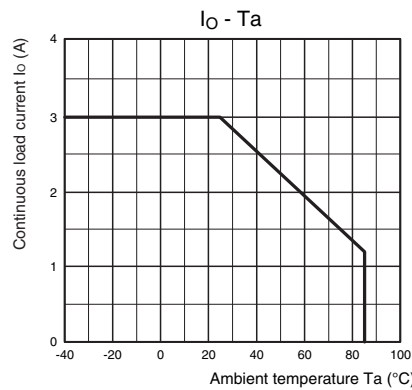
Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}	---	---	16	V
Operating LED forward current	I_F	5	10	25	mA
Continuous load current (AC peak/DC)	I_O	---	---	3	A
Operating temperature	T_a	-20	---	65	°C

Engineering Data

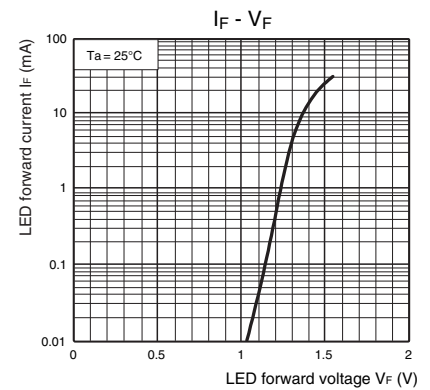
LED forward current vs. Ambient temperature



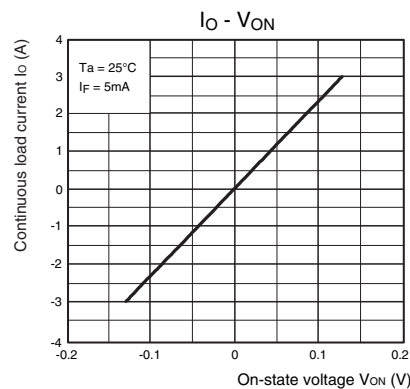
Continuous load current vs. Ambient temperature



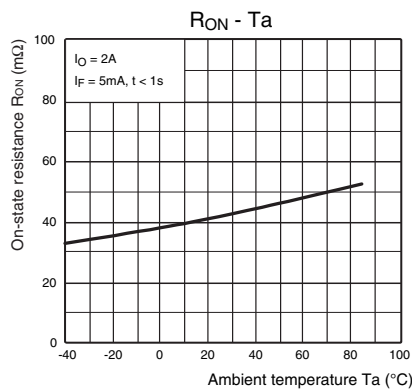
LED forward current vs. LED forward voltage



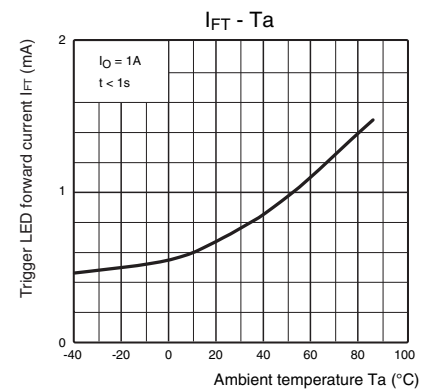
Continuous load current vs. On-state voltage



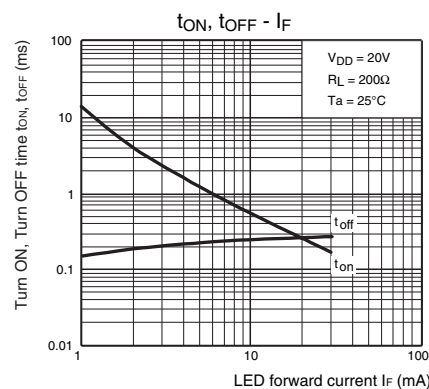
On-state resistance vs. Ambient temperature



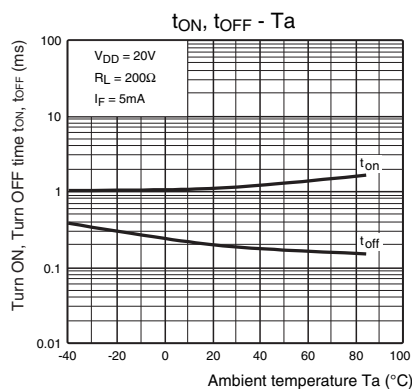
Trigger LED forward current vs. Ambient temperature



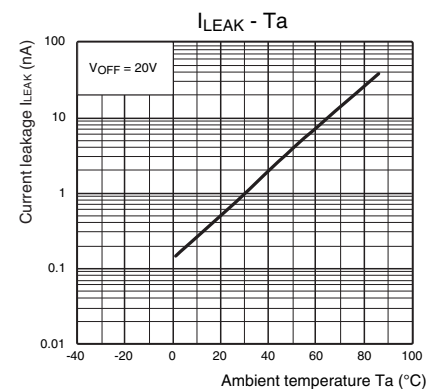
Turn ON, Turn OFF time vs. LED forward current



Turn ON, Turn OFF time vs. Ambient temperature



Current leakage vs. Ambient temperature

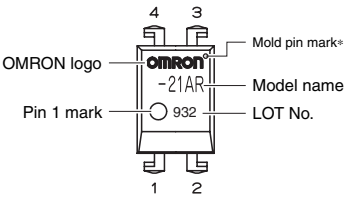


Safety Precautions

- Refer to "Common Precautions" for all G3VM models.

■ Appearance

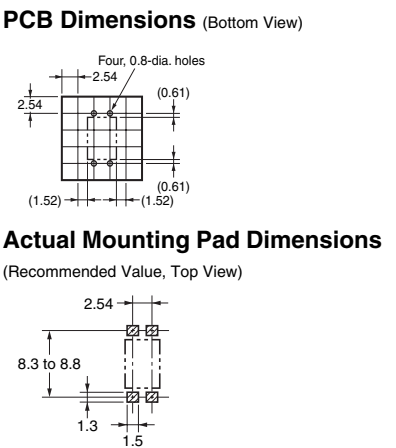
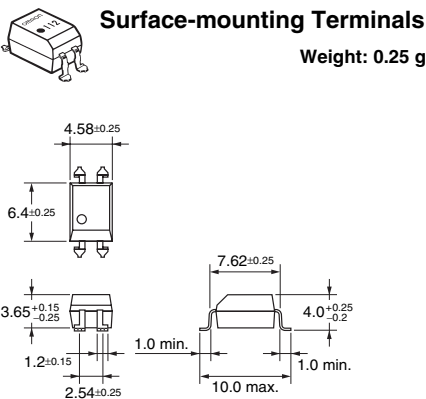
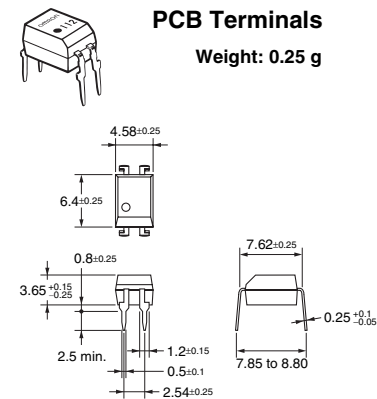
DIP (Dual Inline Package)
DIP4



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■ Dimensions

(Unit: mm)



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• Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
• Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

Note: Do not use this document to operate the Unit.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9