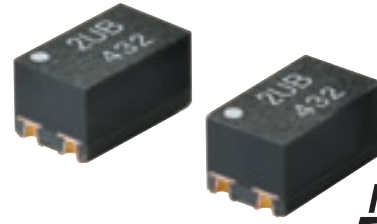


# G3VM-61UR□/81UR□/101UR

MOS FET Relays VSON package with High Load voltage

## World's smallest New VSON Package with High Load voltage

- Load voltage 60V/80V/100V



**NEW**

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

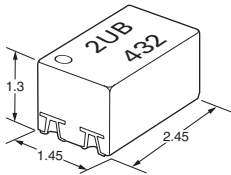
RoHS Compliant

⚠ Refer to "Common Precautions".

### Application Examples

- Semiconductor test equipment
- Communication equipment
- Test & measurement equipment
- Data loggers

### Package (Unit : mm, Average)



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

### Model Number Legend

G3VM-□□□□□  
1 2 3 4 5

#### 1. Load Voltage

- 6: 60V
- 8: 80V
- 10: 100V

#### 2. Contact form

- 1: 1a (SPST-NO)

#### 3. Package type

- U: VSON 4 pin

#### 4. Additional functions

- R: Low On-resistance

#### 5. Other informations

When specifications overlap, serial code is added in the recorded order.

### Ordering Information

Package type	Contact form	Terminals	Load voltage (peak value) *	Continuous load current (peak value) *	Packing/Tape cut		Packing/Tape & reel		
					Model	Minimum package quantity	Model	Minimum package quantity	
VSON4	1a (SPST-NO)	Surface-mounting Terminals	60V	120mA	G3VM-61UR1	1 pc.	G3VM-61UR1(TR05)	500 pcs.	
				400mA	G3VM-61UR		G3VM-61UR(TR05)		
				80V	120mA		G3VM-81UR		G3VM-81UR(TR05)
					200mA		G3VM-81UR1		G3VM-81UR1(TR05)
			100V	100mA	G3VM-101UR		G3VM-101UR(TR05)		

Note: When ordering tape packing, add "(TR05)" (500pcs/reel) to the model number.  
Ask your OMRON representative for orders under 500 pcs. We can supply products with the tape already cut.  
Tape-cut VSONs are packaged without humidity resistance. Use manual soldering to mount them.  
Refer to common precautions.

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

### Absolute Maximum Ratings (Ta = 25°C)

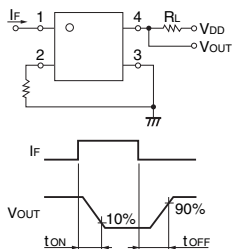
Item	Symbol	G3VM-61UR1	G3VM-61UR	G3VM-81UR	G3VM-81UR1	G3VM-101UR	Unit	Measurement conditions
LED forward current	IF	30					mA	
LED forward current reduction rate	ΔIF/°C	-0.3					mA/°C	Ta≥25°C
LED reverse voltage	VR	5					V	
Connection temperature	TJ	125					°C	
Load voltage (AC peak/DC)	V <sub>OFF</sub>	60		80		100	V	
Continuous load current (AC peak/DC)	I <sub>o</sub>	120	400	120	200	100	mA	
ON current reduction rate	ΔI <sub>o</sub> /°C	-1.2	-4.0	-1.2	-2	-1	mA/°C	Ta≥25°C
Pulse ON current	I <sub>op</sub>	360	1200	360	600	300	mA	t=100ms, Duty=1/10
Connection temperature	TJ	125					°C	
Dielectric strength between I/O (See note 1.)	V <sub>I-O</sub>	300					V <sub>rms</sub>	AC for 1 min
Ambient operating temperature	Ta	-40~+85					°C	With no icing or condensation
Ambient storage temperature	Tstg	-40~+125					°C	
Soldering temperature	-	260					°C	10s

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-61UR1	G3VM-61UR	G3VM-81UR	G3VM-81UR1	G3VM-101UR	Unit	Measurement conditions		
Input	LED forward voltage	V <sub>F</sub>	Minimum					1.1	V	I <sub>F</sub> =10mA	
			Typical					1.27			
			Maximum					1.4			
	Reverse current	I <sub>R</sub>	Maximum					10	μA	V <sub>R</sub> =5V	
	Capacity between terminals	C <sub>T</sub>	Typical					30	pF	V=0, f=1MHz	
	Trigger LED forward current	I <sub>FT</sub>	Typical		1	-		1	-		
		Maximum		3					mA		
Release LED forward current	I <sub>FC</sub>	Minimum					0.1	mA		I <sub>OFF</sub> =10μA	
Output	Maximum resistance with output ON	R <sub>ON</sub>	Typical		10	1.0	7	6	8	Ω	I <sub>F</sub> =5mA, t<1s, I <sub>O</sub> =Continuous load current ratings
			Maximum		15	1.5	12	8	14		
	Current leakage when the relay is open	I <sub>LEAK</sub>	Maximum		1		0.02	1	0.2	nA	V <sub>OFF</sub> =Load voltage ratings
	Capacity between terminals	C <sub>OFF</sub>	Typical		0.7	20	5	6.5	6	pF	V=0, f=100MHz, t<1s
	Maximum		1.3	-	7	11	8				
Capacity between I/O terminals	C <sub>I-O</sub>	Typical					1	pF		f=1MHz, V <sub>S</sub> =0V	
Insulation resistance between I/O terminals	R <sub>I-O</sub>	Typical					10 <sup>8</sup>		MΩ		V <sub>I-O</sub> =500VDC, R <sub>oH</sub> ≤60%
Turn-ON time	t <sub>ON</sub>	Typical		0.05	-			-		ms	I <sub>F</sub> =5mA, R <sub>L</sub> =200Ω, V <sub>DD</sub> =20V (See note 2.)
		Maximum		0.2	0.5	0.5	0.4	0.3			
Turn-OFF time	t <sub>OFF</sub>	Typical		0.015			-		-		
		Maximum		0.2	0.5	0.2	0.4	0.3			

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



## ■Recommended Operating Conditions

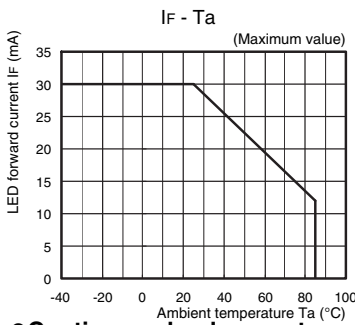
For usage with high reliability, Recommended Operation Conditions is a measure that takes into account the derating of Absolute Maximum Ratings and Electrical Characteristics.

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

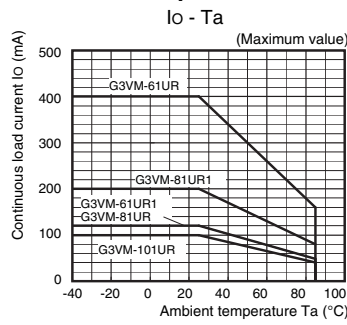
Item	Symbol		G3VM-61UR1	G3VM-61UR	G3VM-81UR	G3VM-81UR1	G3VM-101UR	Unit
Load voltage (AC peak/DC)	V <sub>DD</sub>	Maximum	48		64		80	V
Operating LED forward current	I <sub>F</sub>	Minimum	5					mA
		Typical	7.5					
		Maximum	20					
Continuous load current (AC peak/DC)	I <sub>O</sub>	Maximum	120	400	120	200	100	
Ambient operating temperature	T <sub>a</sub>	Minimum	-20					°C
		Maximum	65					

## Engineering Data

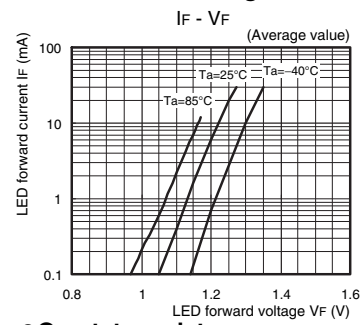
### LED forward current vs. Ambient temperature



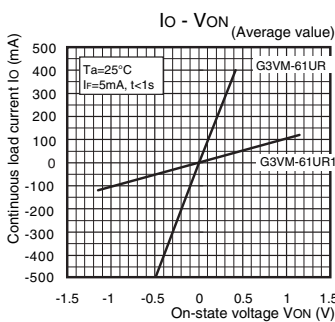
### Continuous load current vs. Ambient temperature



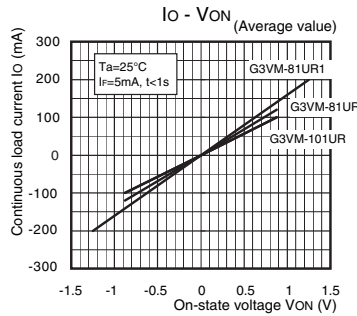
### LED forward current vs. LED forward voltage



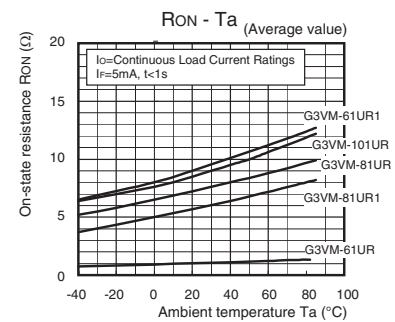
### Continuous load current vs. On-state voltage



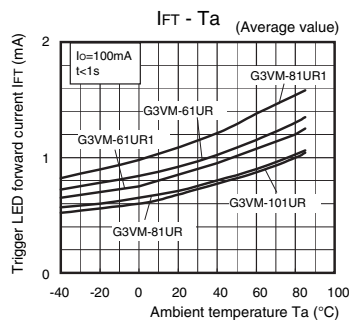
### G3VM-81UR/81UR1/101UR



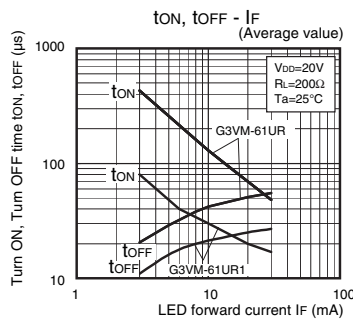
### On-state resistance vs. Ambient temperature



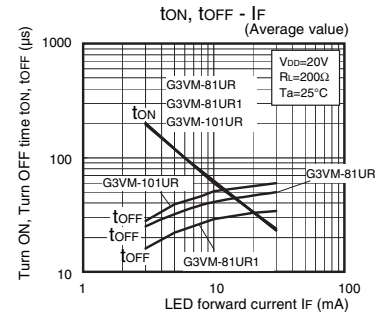
### Trigger LED forward current vs. Ambient temperature



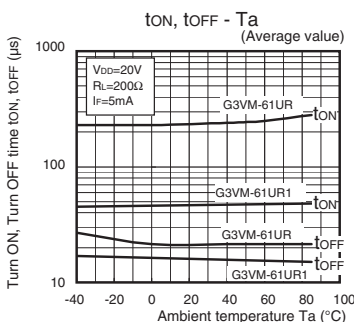
### Turn ON, Turn OFF time vs. LED forward current



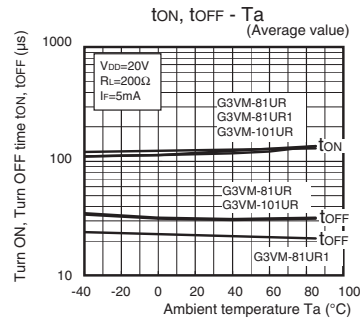
### G3VM-81UR/81UR1/101UR



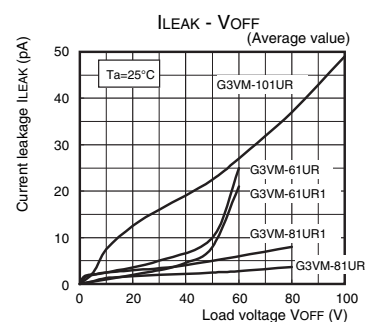
### Turn ON, Turn OFF time vs. Ambient temperature



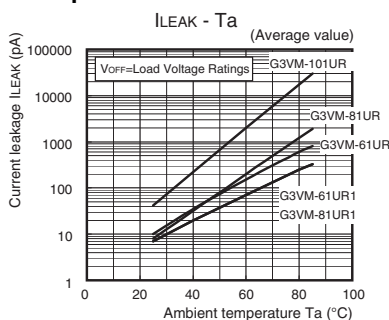
### G3VM-81UR/81UR1/101UR



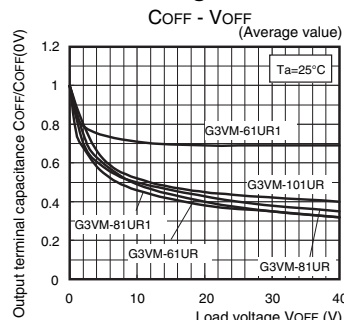
### Current leakage vs. Load voltage



### Current leakage vs. Ambient temperature



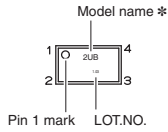
### Output terminal capacitance vs. Load voltage



### ■Appearance / Terminal Arrangement / Internal Connections

#### ■Appearance

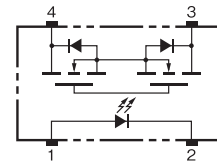
VSON (Very Small Outline Non-leaded)  
VSON4 pin



\* Actual model name marking for each model

Model	Marking
G3VM-61UR1	6U1
G3VM-61UR	6U0
G3VM-81UR	8U0
G3VM-81UR1	8U1
G3VM-101UR	AU0

#### ■Terminal Arrangement/Internal Connections (Top View)

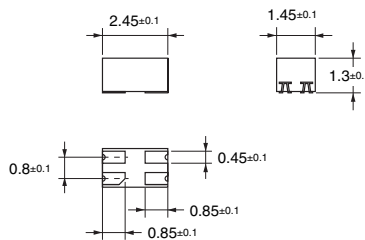
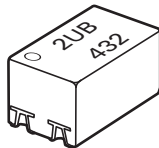


**Note:** The actual product is marked differently from the image shown here.

#### ■Dimensions (Unit: mm)

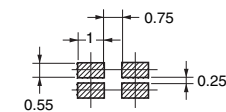
##### Surface-mounting Terminals

Weight: 0.01g



##### Actual Mounting Pad Dimensions

(Recommended Value, Top View)



Unless otherwise specified, the dimensional tolerance is ±0.1 mm.

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

#### ■Approved Standards

Applying for UL recognition

#### ■Safety Precautions

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

• 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.

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