

# G3VM-41DYTR Datasheet



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DiGi Electronics Part Number	G3VM-41DYTR-DG
Manufacturer	<a href="#">Omron Electronics Inc-EMC Div</a>
Manufacturer Product Number	G3VM-41DYTR
Description	SSR RELAY SPST-NO 2A 0-40V
Detailed Description	Solid State SPST-NO (1 Form A) 4-SMD (0.300", 7.62 mm)

This model G3VM-41DYTR is available at DiGi Electronics.

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## Purchase and inquiry

Manufacturer Product Number:

G3VM-41DYTR

Series:

G3VM

Mounting Type:

Surface Mount

Output Type:

AC, DC

Voltage - Load:

0 V ~ 40 V

On-State Resistance (Max):

150 mOhms

Package / Case:

4-SMD (0.300", 7.62mm)

Base Product Number:

G3VM

Manufacturer:

Omron Electronics Inc-EMC Div

Product Status:

Obsolete

Circuit:

SPST-NO (1 Form A)

Voltage - Input:

1.63VDC

Load Current:

2 A

Termination Style:

Gull Wing

Supplier Device Package:

4-SMD

## Environmental & Export classification

RoHS Status:

RoHS Compliant

ECCN:

EAR99

Moisture Sensitivity Level (MSL):

1 (Unlimited)

HTSUS:

8536.41.0030

# G3VM-□AY□/□DY□

MOS FET Relays Small DIP4 package with High dielectric strength type

## Small DIP4 package with Dielectric Strength of 5,000 VAC between I/O

- Load voltage 40V/60V/200V/350V/400V/600V
- Standard type: Trigger LED forward current 3mA (max.)
- High sensitive type: Trigger LED forward current 2mA (max.)



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

DIP G3VM□AY□/□DY□

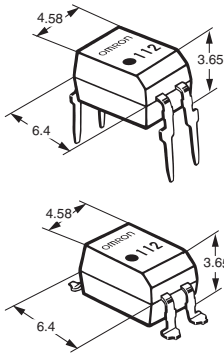
RoHS Compliant

Refer to "Common Precautions".

### Application Examples

- Electrical power unit
- Security equipment
- Medical equipment
- Test & measurement equipment
- Industrial equipment

### 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

- 4: 40V
- 6: 60V
- 20: 200V
- 35: 350V
- 40: 400V
- 60: 600V

#### 2. Contact form

- 1: 1a (SPST-NO)

#### 3. Package type

- A: DIP4 pin PCB terminals
- D: DIP4 pin Surface-mounting Terminals

#### 4. Additional functions

- Y: Dielectric strength between I/O above 2,500V type

#### 5. Other informations

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

### Ordering Information

#### Standard type

Package type	Contact form	Load voltage (peak value) *	Continuous load current (peak value) *	Packing/Tube		Packing/Tape & reel		
				Model		Minimum package quantity	Model	Minimum package quantity
				PCB terminals	Surface-mounting Terminals		Surface-mounting Terminals	
DIP4	1a	40V	2000mA	G3VM-41AY1	G3VM-41DY1	100 pcs.	G3VM-41DY1(TR05)	500 pcs.
		60V	500mA	G3VM-61AY1	G3VM-61DY1		G3VM-61DY1(TR05)	
		200V	250mA	G3VM-201AY1	G3VM-201DY1		G3VM-201DY1(TR05)	
		350V	100mA	G3VM-351AY1	G3VM-351DY1		G3VM-351DY1(TR05)	
		400V	120mA	G3VM-401AY1	G3VM-401DY1		G3VM-401DY1(TR05)	
		600V	90mA	G3VM-601AY1	G3VM-601DY1		G3VM-601DY1(TR05)	

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

#### High sensitive type

Package type	Contact form	Load voltage (peak value) *	Continuous load current (peak value) *	Packing/Tube		Packing/Tape & reel		
				Model		Minimum package quantity	Model	Minimum package quantity
				PCB terminals	Surface-mounting Terminals		Surface-mounting Terminals	
DIP4	1a	40V	2000mA	G3VM-41AY	G3VM-41DY	100 pcs.	G3VM-41DY(TR)	1,500 pcs.
		60V	500mA	G3VM-61AY	G3VM-61DY		G3VM-61DY(TR)	
		200V	250mA	G3VM-201AY	G3VM-201DY		G3VM-201DY(TR)	
		350V	100mA	G3VM-351AY	G3VM-351DY		G3VM-351DY(TR)	
		400V	120mA	G3VM-401AY	G3VM-401DY		G3VM-401DY(TR)	
		600V	90mA	G3VM-601AY	G3VM-601DY		G3VM-601DY(TR)	

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

## G3VM-□AY□/□DY□

## MOS FET Relays

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

● Standard type, High sensitive type

Item	Symbol	G3VM-41AY1	G3VM-61AY1	G3VM-201AY1	G3VM-351AY1	G3VM-401AY1	G3VM-601AY1	Unit	Measurement conditions	
		G3VM-41DY1	G3VM-61DY1	G3VM-201DY1	G3VM-351DY1	G3VM-401DY1	G3VM-601DY1			
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	
	Connection temperature	TJ						125	°C	
Output	Load voltage (AC peak/DC)	V <sub>OFF</sub>	40	60	200	350	400	600	V	
	Continuous load current (AC peak/DC)	I <sub>o</sub>	2,000	500	250	100	120	90	mA	
	ON current reduction rate	ΔI <sub>o</sub> /°C	-20	-5	-2.5	-1	-1.2	-0.9	mA/°C	Ta≥25°C
	Pulse ON current	I <sub>op</sub>	6	1.5	0.75	0.3	0.36	0.27	A	t=100ms, Duty=1/10
	Connection temperature	TJ	125						°C	
Dielectric strength between I/O *	V <sub>I-O</sub>	5,000						V <sub>rms</sub>	AC for 1 min	
Ambient operating temperature	Ta	-40~+85						°C	With no icing or condensation	
Ambient storage temperature	Tstg	-55~+125						°C		
Soldering temperature	-	260						°C	10s	

\* 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.

DIP

G3VM□AY□/□DY□

## G3VM-□AY□/□DY□

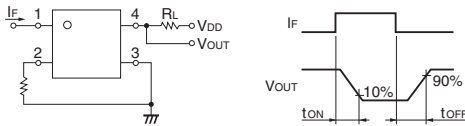
## MOS FET Relays

## ■Electrical Characteristics (Ta = 25°C)

## ●Standard type

Item	Symbol		G3VM-41AY1	G3VM-61AY1	G3VM-201AY1	G3VM-351AY1	G3VM-401AY1	G3VM-601AY1	Unit	Measurement conditions	
			G3VM-41DY1	G3VM-61DY1	G3VM-201DY1	G3VM-351DY1	G3VM-401DY1	G3VM-601DY1			
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	50						pF	V=0, f=1MHz	
Trigger LED forward current	I <sub>FT</sub>	Minimum	0.5	0.6				0.5	mA	G3VM-41AY1/DY1 : I <sub>o</sub> =1A Others : I <sub>o</sub> =Continuous load current ratings	
		Maximum	3								
Release LED forward current	I <sub>FC</sub>	Minimum	0.1						mA	I <sub>OFF</sub> =10μA	
Maximum resistance with output ON	R <sub>ON</sub>	Typical	0.09(0.06)	0.6	5	35(25)	22(17)	45(30)	Ω	I <sub>F</sub> =5mA, I <sub>o</sub> =Continuous load current ratings (value at t<1s)	
		Maximum	0.15(0.10)	2	8	50(35)	35(28)	60(40)			
Current leakage when the relay is open	I <sub>LEAK</sub>	Maximum	1						μA	V <sub>OFF</sub> =Load voltage ratings	
Capacity between terminals	C <sub>OFF</sub>	Typical	300	130	90	30	80	75	pF	V=0, f=1MHz	
Capacity between I/O terminals	C <sub>I-O</sub>	Typical	0.8						pF	f=1MHz, V <sub>S</sub> =0V	
Insulation resistance between I/O terminals	R <sub>I-O</sub>	Minimum	1000						MΩ	V <sub>I-O</sub> =500VDC, R <sub>oH</sub> ≤60%	
		Typical	10 <sup>8</sup>								
Turn-ON time	t <sub>ON</sub>	Typical	2.8	1	0.3	0.6	0.5	ms	G3VM-41AY1/DY1 : R <sub>L</sub> =200Ω, I <sub>F</sub> =10mA, V <sub>DD</sub> =20V G3VM-601AY1/DY1 : R <sub>L</sub> =200Ω, I <sub>F</sub> =5mA, V <sub>DD</sub> =10V Others : R <sub>L</sub> =200Ω, I <sub>F</sub> =5mA, V <sub>DD</sub> =20V *		
		Maximum	5	3	2						
Turn-OFF time	t <sub>OFF</sub>	Typical	0.3	0.2	0.1	0.2					
		Maximum	1								

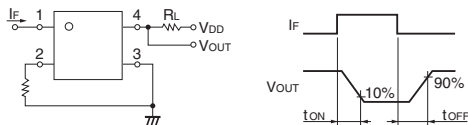
## \* Turn-ON and Turn-OFF Times



## ●High sensitive type

Item	Symbol		G3VM-41AY	G3VM-61AY	G3VM-201AY	G3VM-351AY	G3VM-401AY	G3VM-601AY	Unit	Measurement conditions	
			G3VM-41DY	G3VM-61DY	G3VM-201DY	G3VM-351DY	G3VM-401DY	G3VM-601DY			
Input	LED forward voltage	V <sub>F</sub>	Minimum						1.45	V	I <sub>F</sub> =10mA
			Typical						1.63		
			Maximum						1.75		
Reverse current	I <sub>R</sub>	Maximum	10						μA	V <sub>R</sub> =5V	
Capacity between terminals	C <sub>T</sub>	Typical	40						pF	V=0, f=1MHz	
Trigger LED forward current	I <sub>FT</sub>	Minimum	0.3						mA	G3VM-41AY/DY : I <sub>o</sub> =1A Others : I <sub>o</sub> =Continuous load current ratings	
		Maximum	2								
Release LED forward current	I <sub>FC</sub>	Minimum	0.1						mA	I <sub>OFF</sub> =10μA	
Maximum resistance with output ON	R <sub>ON</sub>	Typical	0.09(0.06)	0.6	5	35(25)	22(17)	45(30)	Ω	I <sub>F</sub> =5mA, I <sub>o</sub> =Continuous load current ratings (value at t<1s)	
		Maximum	0.15(0.10)	2	8	50(35)	35(28)	60(40)			
Current leakage when the relay is open	I <sub>LEAK</sub>	Maximum	1						μA	V <sub>OFF</sub> =Load voltage ratings	
Capacity between terminals	C <sub>OFF</sub>	Typical	300	130	90	30	80	75	pF	V=0, f=1MHz	
Capacity between I/O terminals	C <sub>I-O</sub>	Typical	0.8						pF	f=1MHz, V <sub>S</sub> =0V	
Insulation resistance between I/O terminals	R <sub>I-O</sub>	Minimum	1000						MΩ	V <sub>I-O</sub> =500VDC, R <sub>oH</sub> ≤60%	
		Typical	10 <sup>8</sup>								
Turn-ON time	t <sub>ON</sub>	Typical	2	0.5	0.1	0.2	ms	G3VM-601AY/DY : R <sub>L</sub> =200Ω, I <sub>F</sub> =5mA, V <sub>DD</sub> =10V Others : R <sub>L</sub> =200Ω, I <sub>F</sub> =5mA, V <sub>DD</sub> =20V *			
		Maximum	5	1							
Turn-OFF time	t <sub>OFF</sub>	Typical	0.3	0.2							
		Maximum	1								

## \* 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.

### Standard type

Item	Symbol		G3VM-41AY1	G3VM-61AY1	G3VM-201AY1	G3VM-351AY1	G3VM-401AY1	G3VM-601AY1	Unit
			G3VM-41DY1	G3VM-61DY1	G3VM-201DY1	G3VM-351DY1	G3VM-401DY1	G3VM-601DY1	
Load voltage (AC peak/DC)	V <sub>DD</sub>	Maximum	32	48	160	280	320	480	V
		Minimum	5						
Operating LED forward current	I <sub>F</sub>	Typical	7.5						mA
		Maximum	25						
		Maximum	2000	500	250	100	120	90	
Continuous load current (AC peak/DC)	I <sub>o</sub>	Maximum	2000	500	250	100	120	90	
Ambient operating temperature	T <sub>a</sub>	Minimum	-20						°C
		Maximum	65						

### High sensitive type

Item	Symbol		G3VM-41AY	G3VM-61AY	G3VM-201AY	G3VM-351AY	G3VM-401AY	G3VM-601AY	Unit
			G3VM-41DY	G3VM-61DY	G3VM-201DY	G3VM-351DY	G3VM-401DY	G3VM-601DY	
Load voltage (AC peak/DC)	V <sub>DD</sub>	Maximum	32	48	160	280	320	480	V
		Minimum	3						
Operating LED forward current	I <sub>F</sub>	Typical	5						mA
		Maximum	15		20				
		Maximum	2000	500	250	100	120	90	
Continuous load current (AC peak/DC)	I <sub>o</sub>	Maximum	2000	500	250	100	120	90	
Ambient operating temperature	T <sub>a</sub>	Minimum	-20						°C
		Maximum	65						

## Spacing and Insulation

### Standard type and High sensitive type

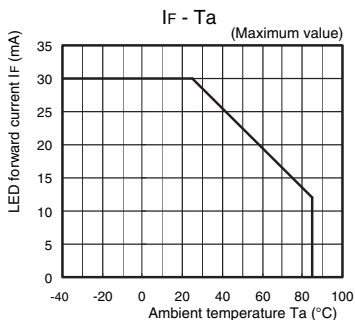
Item	Standard	Unit
Creepage distances	Minimum 7.0	mm
Clearance distances	Minimum 7.0	
Internal isolation thickness	Minimum 0.4	

# G3VM-□AY□/□DY□

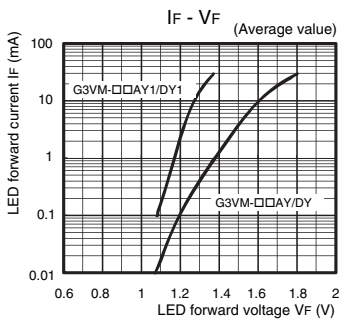
## MOS FET Relays

### Engineering Data

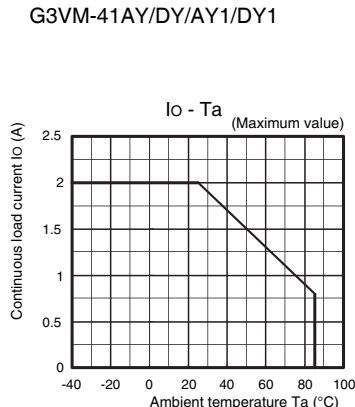
●LED forward current vs. Ambient temperature



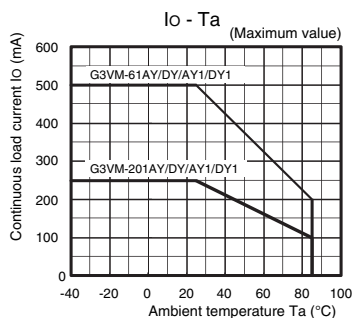
●LED forward current vs. LED forward voltage



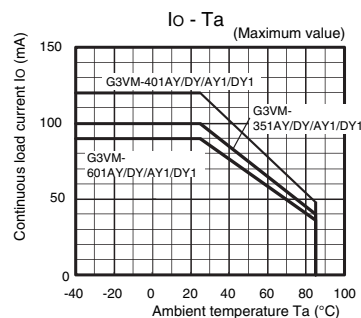
●Continuous load current vs. Ambient temperature



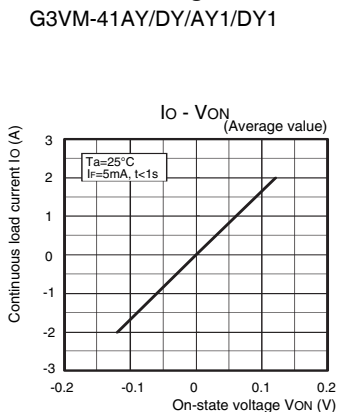
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G3VM-201AY/DY/AY1/DY1



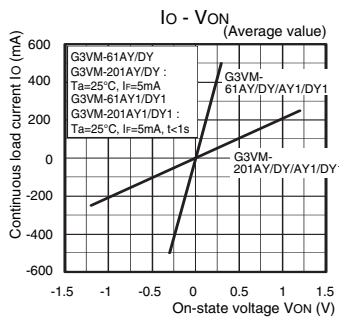
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G3VM-601AY/DY/AY1/DY1



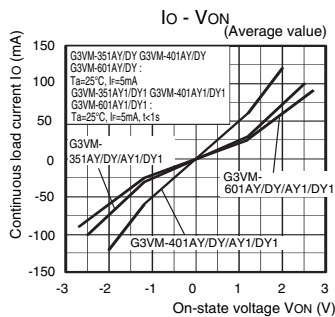
●Continuous load current vs. On-state voltage



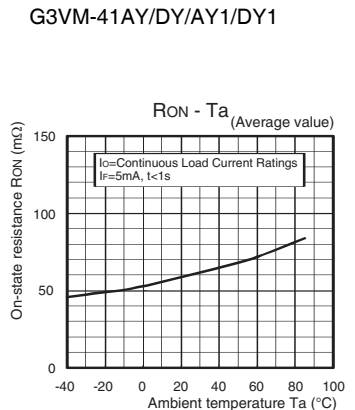
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G3VM-201AY/DY/AY1/DY1



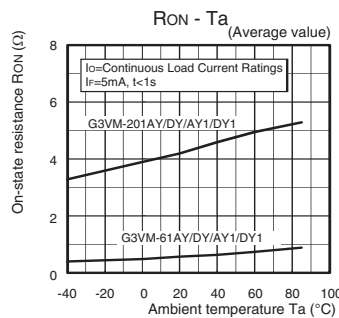
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G3VM-401AY/DY/AY1/DY1  
G3VM-601AY/DY/AY1/DY1



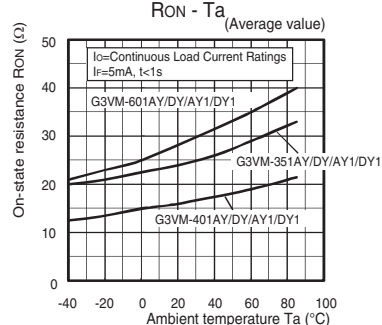
●On-state resistance vs. Ambient temperature



G3VM-61AY/DY/AY1/DY1  
G3VM-201AY/DY/AY1/DY1



G3VM-351AY/DY/AY1/DY1  
G3VM-401AY/DY/AY1/DY1  
G3VM-601AY/DY/AY1/DY1



DIP

G3VM-□AY□/□DY□

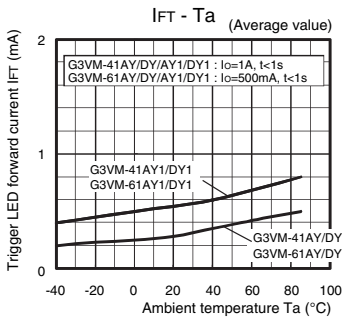
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## MOS FET Relays

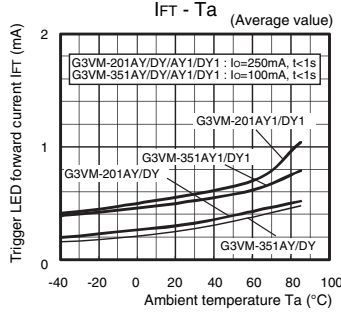
### Engineering Data

● **Trigger LED forward current vs. Ambient temperature**

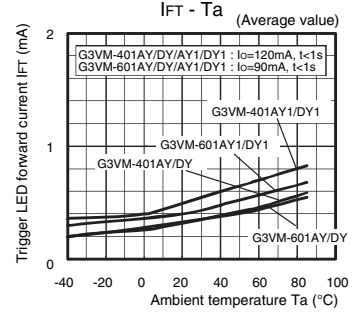
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G3VM-61AY/DY/AY1/DY1



G3VM-201AY/DY/AY1/DY1  
G3VM-351AY/DY/AY1/DY1

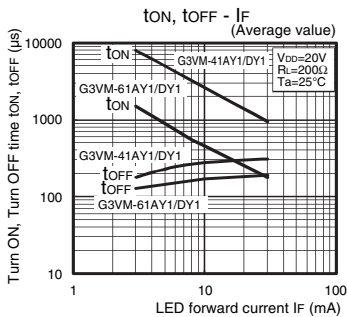


G3VM-401AY/DY/AY1/DY1  
G3VM-601AY/DY/AY1/DY1

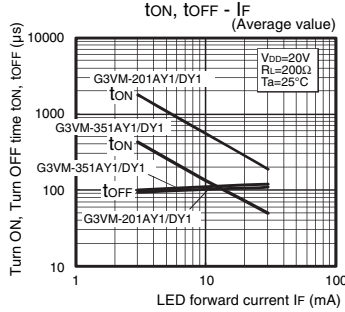


● **Turn ON, Turn OFF time vs. LED forward current**

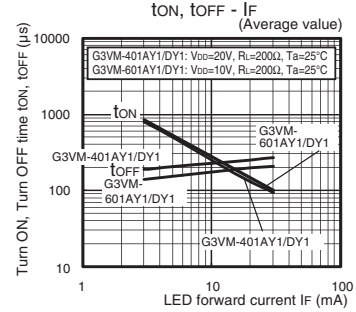
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G3VM-61AY1/DY1



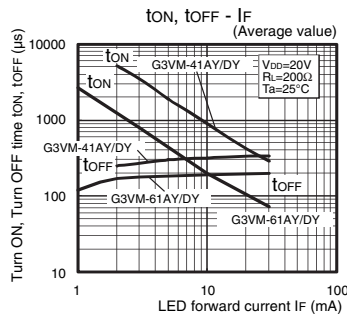
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G3VM-351AY1/DY1



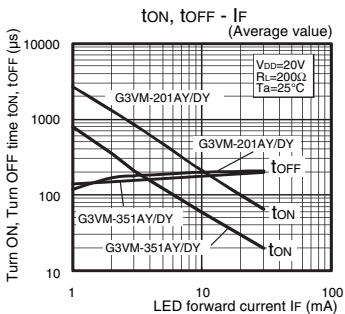
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G3VM-601AY1/DY1



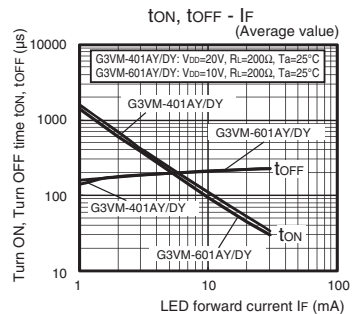
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G3VM-61AY/DY



G3VM-201AY/DY  
G3VM-351AY/DY

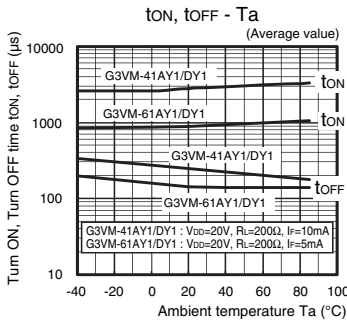


G3VM-401AY/DY  
G3VM-601AY/DY

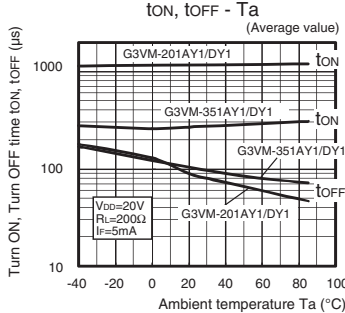


● **Turn ON, Turn OFF time vs. Ambient temperature**

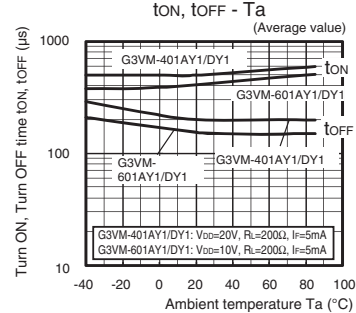
G3VM-41AY1/DY1  
G3VM-61AY1/DY1



G3VM-201AY1/DY1  
G3VM-351AY1/DY1



G3VM-401AY1/DY1  
G3VM-601AY1/DY1



DIP G3VM-□AY□/□DY□

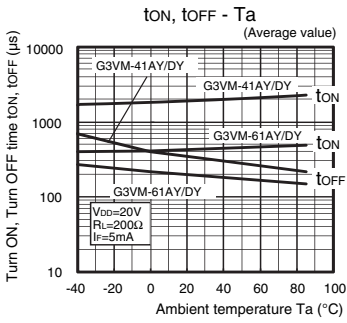
# G3VM-□AY□/□DY□

## MOS FET Relays

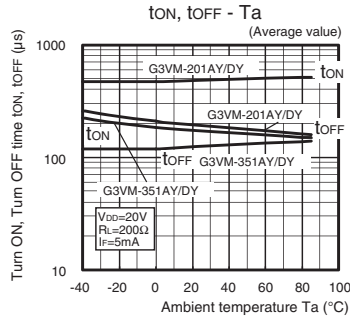
### Engineering Data

**● Turn ON, Turn OFF time vs. Ambient temperature**

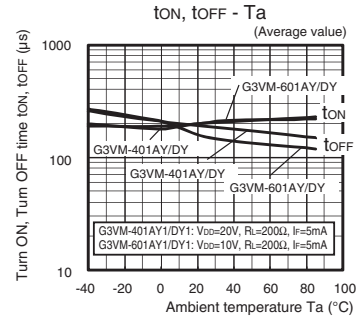
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G3VM-61AY1/DY1



G3VM-201AY/DY  
G3VM-351AY/DY

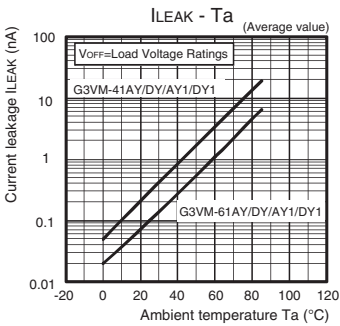


G3VM-401AY/DY  
G3VM-601AY/DY

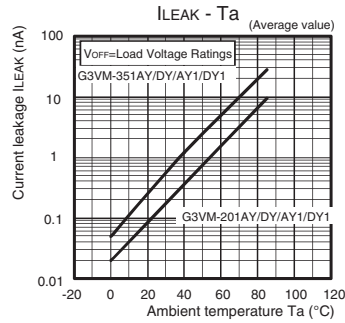


**● Current leakage vs. Ambient temperature**

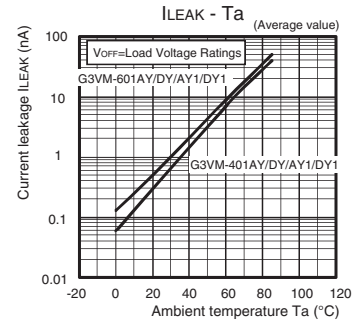
G3VM-41AY/DY/AY1/DY1  
G3VM-61AY/DY/AY1/DY1



G3VM-201AY/DY/AY1/DY1  
G3VM-351AY/DY/AY1/DY1



G3VM-401AY/DY/AY1/DY1  
G3VM-601AY/DY/AY1/DY1



DIP

G3VM-□AY□/□DY□

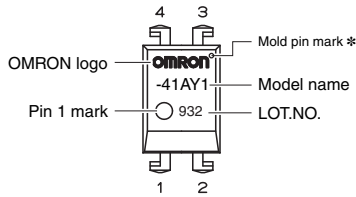
# G3VM-□AY□/□DY□

## MOS FET Relays

### ■Appearance/Terminal Arrangement/Internal Connections

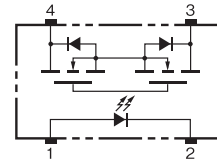
#### ■Appearance

DIP (Dual Inline Package)  
DIP4



Note: The actual product is marked differently from the image shown here.  
\* The indentation in the corner diagonally opposite from the pin 1 mark is from a pin on the mold.

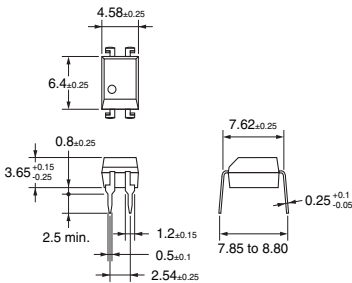
#### ■ Terminal Arrangement/Internal Connections



#### ■Dimensions (Unit: mm)



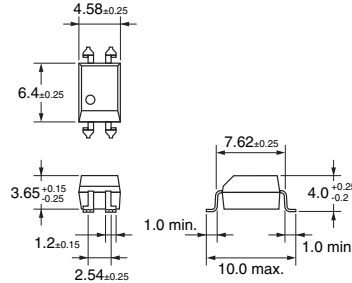
**PCB Terminals**  
Weight: 0.25 g



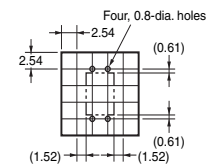
Note: The actual product is marked differently from the image shown here.



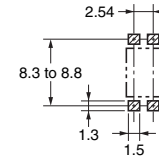
**Surface-mounting Terminals**  
Weight: 0.25 g



**PCB Dimensions (BOTTOM VIEW)**



**Actual Mounting Pad Dimensions**  
(Recommended Value, TOP VIEW)



#### ■Approved Standards

UL recognized

●Standard type and High sensitive type

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

#### ■Safety Precautions

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

Please check each region's Terms & Conditions by region website.

### OMRON Corporation Electronic and Mechanical Components Company

#### Regional Contact

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