

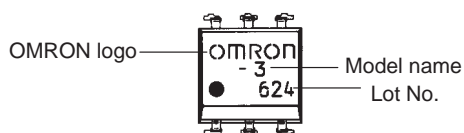
### G3VM Low-cost Series (Two-output Models)

- New G3VM Series with 350-V-output dielectric strength.
- Two-output models now available.
- Approved Standards: UL1577



### Ordering Information

#### ■ Appearance



**Note:** "G3VM" is not printed on the actual product

#### ■ Model Number Legend

G3VM- $\square$  $\square$   
 1 2

##### 1. Load Voltage

W: Load voltage, 350 VDC or 350 VAC min.

##### 2. Terminal

F: Surface-mounting terminals

None: PCB terminals

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick
DPST-NO	PCB terminals	350 VAC	G3VM-W-S	50
	Surface-mounting terminals		G3VM-WF-S	50

# Specifications

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

Item		Symbol	Rating	Unit
Input	LED forward current	$I_F$	50	mA
	LED forward current reduction rate (Ta ≥ 25°C)	$\Delta I_F/^\circ\text{C}$	-0.5	mA/°C
	Repetitive peak LED forward current (100 μs pulse)	$I_{FP}$	1	A
	LED reverse voltage	$V_R$	5	V
	Connection temperature	$T_j$	125	°C
Output	Output dielectric strength	$V_{OFF}$	350	V
	Continuous load current	Current per channel $I_O$	120	mA
	ON current reduction rate (Ta ≥ 25°C)	Current per channel $\Delta I_{ON}/^\circ\text{C}$	-1.2	mA/°C
	Connection temperature	$T_j$	125	°C
Storage temperature		$T_{stg}$	-55 to 100	°C
Operating temperature		$T_a$	-20 to 85	°C
Soldering temperature (10 s)		$T_{sol}$	260	°C
Dielectric strength (AC for 1 min with ambient humidity of 60% or less) (see note)		$V_{I-O}$	2,500	$V_{rms}$

Note: Apply voltage between a group of pins 1, 2, and 3, 4 and that of pins 8, 7 and 6, 5.

## ■ Recommended Operating Conditions

Item	Symbol	Minimum	Typical	Maximum	Unit
Operating voltage	$V_{DD}$	---	---	280	V
Forward current	$I_F$	5.0	7.5	25	mA
Continuous load current	$I_O$	---	---	100	mA
Operating temperature	$T_a$	-20	---	65	°C

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

Item		Symbol	Measurement conditions	Minimum	Typical	Maximum	Unit
Input	LED forward current	$V_F$	$I_F=10$ mA	1.0	1.15	1.3	V
	Reverse current	$I_R$	$V_R=5$ V	---	---	10	μA
	Capacity between terminals	$C_T$	$V=0$ , $f=1$ MHZ	---	30	---	pF
Output	Current leakage when the relay is open	$I_{LEAK}$	$V_{OFF}=350$ V	---	---	1	μA

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

Item	Symbol	Measurement conditions	Minimum	Typical	Maximum	Unit
Maximum resistance with output ON	$R_{ON}$	$I_{ON}=100$ mA, $I_F=10$ mA	---	22	35	Ω
		$I_{ON}=20$ to 100 mA, $I_F=10$ mA	---	26	40	

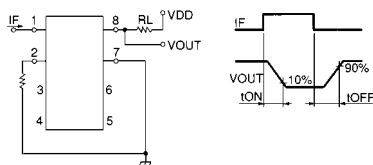
## ■ Insulation Characteristics (Ta = 25°C)

Item	Symbol	Measurement conditions	Minimum	Typical	Maximum	Unit
Floating capacity between I/O terminals	$C_{I-O}$	$V_S=0$ , $f=1$ MHZ	---	0.8	---	pF
Insulation resistance	$R_{I-O}$	$V_S=0$ , operating ambient humidity: ≤ 60%	$5 \times 10^{10}$	$10^{14}$	---	Ω
Dielectric strength	$V_{I-O}$	AC for 1 min	2,500	---	---	$V_{rms}$
		AC for 1 s in oil	---	5,000	---	
		DC for 1 min in oil	---	5,000	---	$V_{dc}$

■ Switching Characteristics (Ta = 25°C)

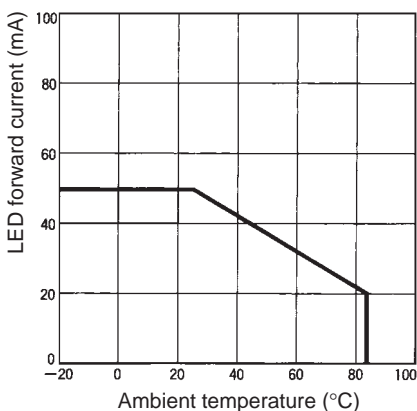
Item	Symbol	Measurement conditions	Minimum	Typical	Maximum	Unit
Turn-on time	t <sub>ON</sub>	R <sub>L</sub> =200 Ω V <sub>DD</sub> =20 V, I <sub>F</sub> =10 mA (see note)	---	---	1	ms
Turn-off time	t <sub>OFF</sub>		---	---	1	

Note: Switching Time Measuring Circuit

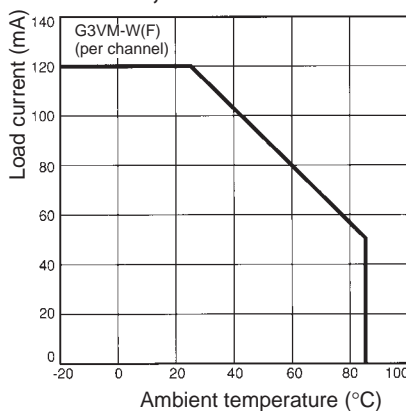


Engineering Data

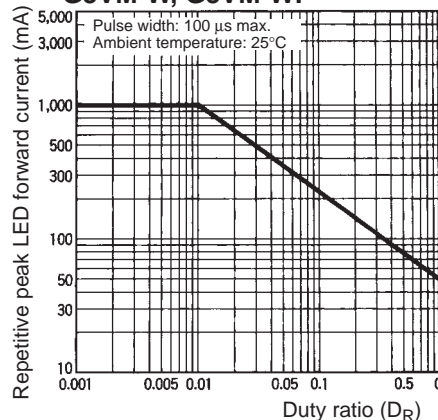
LED Forward Current vs. Ambient Temperature  
G3VM-W, G3VM-WF



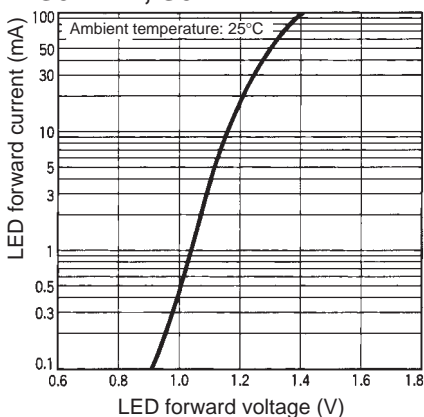
Load Current vs. Ambient Temperature Characteristics  
G3VM-W, G3VM-WF



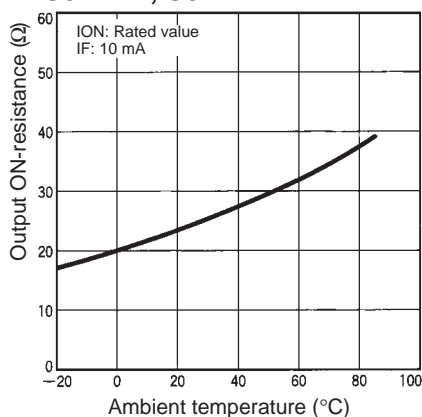
Repetitive Peak LED Forward Current vs. Duty Ratio  
G3VM-W, G3VM-WF



LED Forward Current vs. LED Forward Voltage  
G3VM-W, G3VM-WF



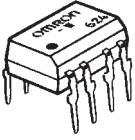
Output ON-resistance vs. Ambient Temperature  
G3VM-W, G3VM-WF



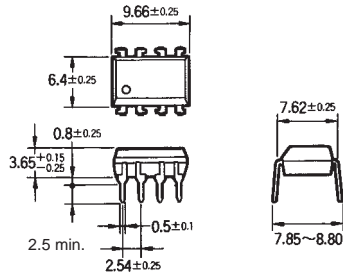
# Dimensions

**Note:** All units are in millimeters unless otherwise indicated.

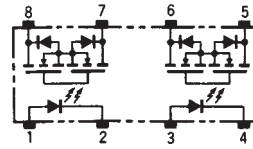
## G3VM-W



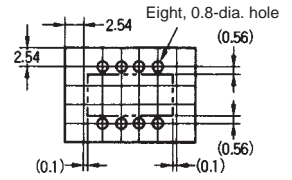
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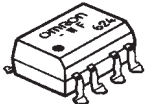
### Terminal Arrangement/ Internal Connections (Top View)



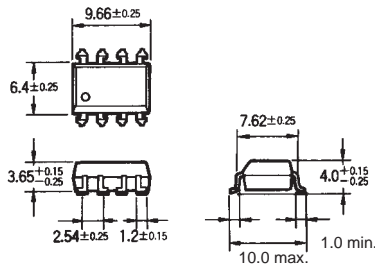
### PCB Dimensions (Bottom View)



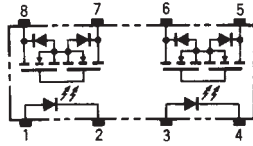
## G3VM-WF



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



### Actual Mounting Pad Dimensions (Recommended Value, Bottom View)

