

mm inch

### FEATURES

- Space saving, Vertical size with a maximum thickness of 4.5 mm.**  
Mounting space has been reduced to 30% (compared to conventional SSR's) while meeting high density PC board mounting requirements.
- 1A and 2A load types available**
- Zero-cross type and Random type available**

- High dielectric strength of 3,000V AC**  
(between input and output)
- Snubber circuit integrated**  
The snubber circuit is integrated to prevent malfunction caused by the rapid rise of voltage on the output side, such as inductive load and current.

RoHS Directive compatibility information  
<http://panasonic-denko.co.jp/ac/e/service/environment/>

### TYPES

Type	Load current	Load voltage	Input voltage	Part No.
Zero-cross	1A	75 to 264 V AC	5 V DC	AQG12105
			12 V DC	AQG12112
			24 V DC	AQG12124
	2A	75 to 264 V AC	5 V DC	AQG22105
			12 V DC	AQG22112
			24 V DC	AQG22124
Random	1A	75 to 264 V AC	5 V DC	AQG12205
			12 V DC	AQG12212
			24 V DC	AQG12224
	2A	75 to 264 V AC	5 V DC	AQG22205
			12 V DC	AQG22212
			24 V DC	AQG22224

### TYPICAL APPLICATIONS

- Manufacturing equipment**
  - NC machines
  - Injection molders
  - Robots
- Air conditioners**
- Computers**

### ORDERING INFORMATION

Ex. AQG 1 2 1 0 5

Load current	Load voltage	Type	Input voltage
1: 1 A 2: 2 A	2: 75 to 264 V AC	1: Zero-cross (3,000 V) 2: Random (3,000 V)	05: 5 V DC 12: 12 V DC 24: 24 V DC

(Note) Standard packing: Carton 20 pcs., Case 500 pcs.

# AQ-G

## SPECIFICATIONS

1. Ratings (at 20°C 68°F, Input voltage ripple: 1% or less)

### 1) Zero-cross type

Item	Type	Part No.						Remarks
		AQG12105	AQG12112	AQG12124	AQG22105	AQG22112	AQG22124	
Input side	Input voltage	4 to 6 V DC	9.6 to 14.4 V DC	19.2 to 28.8 V DC	4 to 6 V DC	9.6 to 14.4 V DC	19.2 to 28.8 V DC	
	Input impedance	Approx. 0.3k Ω	Approx. 0.8k Ω	Approx. 1.6k Ω	Approx. 0.3k Ω	Approx. 0.8k Ω	Approx. 1.6k Ω	
	Drop-out voltage, min.	1 V						
	Reverse voltage	3 V						
Load side	Max. load current	1 A AC			2 A AC			
	Load voltage	75 to 264 V AC						
	Frequency	45 to 65 Hz						
	Non-repetitive surge current	8 A			30 A			In one cycle at 60 Hz
	Max. "OFF-state" leakage current	1.5 mA (applied 200 V)						
	Max. "ON-state" voltage drop	1.6 V						at Max. carrying current
	Min. load current	20 mA						

### 2) Random type

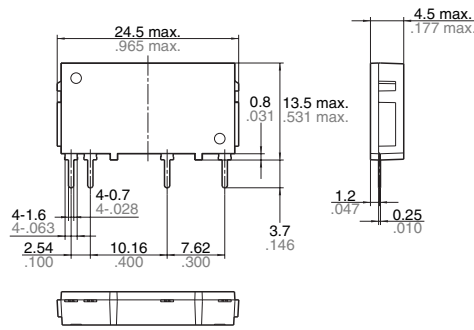
Item	Type	Part No.						Remarks
		AQG12205	AQG12212	AQG12224	AQG22205	AQG22212	AQG22224	
Input side	Input voltage	4 to 6 V DC	9.6 to 14.4 V DC	19.2 to 28.8 V DC	4 to 6 V DC	9.6 to 14.4 V DC	19.2 to 28.8 V DC	
	Input impedance	Approx. 0.3k Ω	Approx. 0.8k Ω	Approx. 1.6k Ω	Approx. 0.3k Ω	Approx. 0.8k Ω	Approx. 1.6k Ω	
	Drop-out voltage, min.	1 V						
	Reverse voltage	3 V						
Load side	Max. load current	1 A AC			2 A AC			
	Load voltage	75 to 264 V AC						
	Frequency	45 to 65 Hz						
	Non-repetitive surge current	8 A			30 A			In one cycle at 60 Hz
	Max. "OFF-state" leakage current	1.5 mA (applied 200 V)						
	Max. "ON-state" voltage drop	1.6 V						at Max. carrying current
	Min. load current	20 mA						

2. Characteristics (at 20°C 68°F, Input voltage ripple: 1% or less)

Item	Zero-cross type	Random type	Remarks
Operate time max.	(1/2 cycle of voltage sine wave) + 1 ms	1 ms	
Release time, max.	(1/2 cycle of voltage sine wave) + 1 ms		
Insulation resistance, min.	10 <sup>9</sup> Ω between input and output		Using 500 V DC megger
Breakdown voltage	3,000 Vrms between input and output		Initial for 1 min.
Vibration resistance	10 to 55 Hz double amplitude of 0.75 mm		X, Y, Z axes
Shock resistance	1,000 m/s <sup>2</sup>		X, Y, Z axes
Ambient temperature	-30°C to +80°C -22°F to +176°F		Non-condensing at low temperatures
Storage temperature	-30°C to +100°C -22°F to +212°F		
Operational method	Zero-cross (Turn-ON and Turn-OFF)	Random turn ON, zero-cross turn OFF	

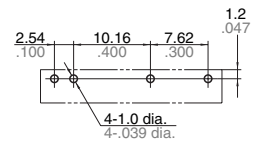
# DIMENSIONS

## 1. 1A type



General tolerance:  $\pm 0.2 \pm .008$

## PC board pattern (Bottom view)

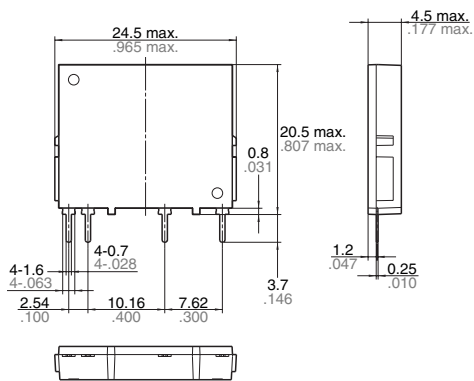


Tolerance:  $\pm 0.1 \pm .004$

## Schematic AC type

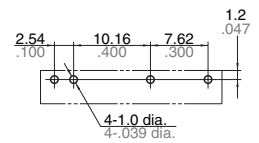


## 2. 2A type



General tolerance:  $\pm 0.2 \pm .008$

## PC board pattern (Bottom view)



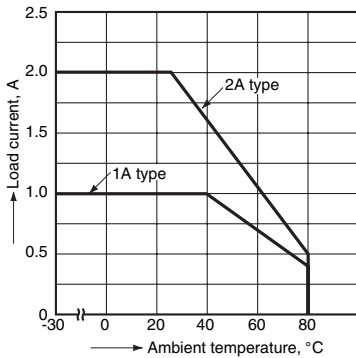
Tolerance:  $\pm 0.1 \pm .004$

## Schematic AC type

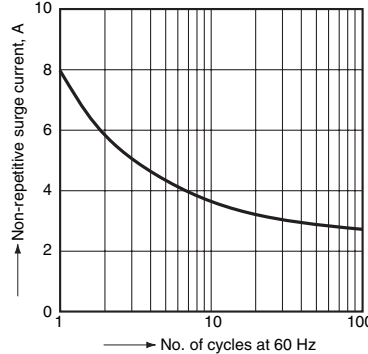


# REFERENCE DATA

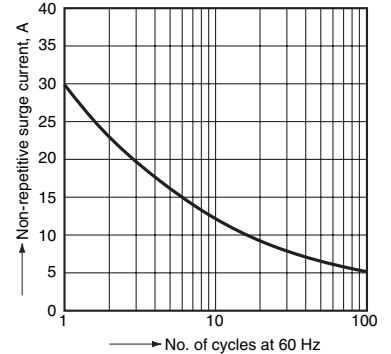
## 1. Load current vs. ambient temperature



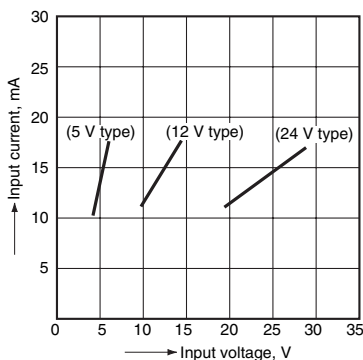
## 2.-(1) Non-repetitive surge current vs. carrying time (1A type)



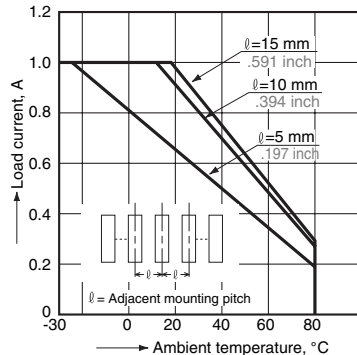
## 2.-(2) Non-repetitive surge current vs. carrying time (2A type)



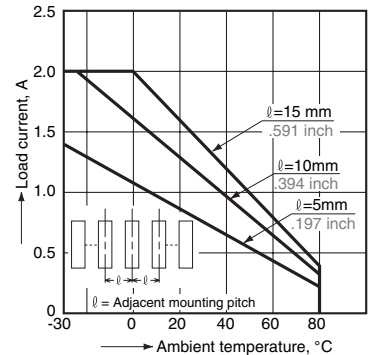
## 3. Input current vs. input voltage characteristics



## 4.-(1) Load current vs. ambient temperature characteristics for adjacent mounting (1A type)



## 4.-(2) Load current vs. ambient temperature characteristics for adjacent mounting (2A type)



# For Cautions for Use.