



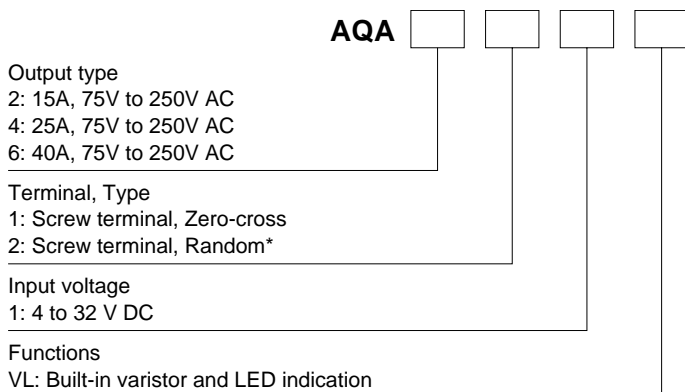
## FEATURES

1. **Compact Size**  
W 40 × L 58 × H 25.5 mm  
W 1.575 × L 2.283 × H 1.004 inch
2. **With terminal cover for safety (output side only).**  
\* Cover on input side available as option.
3. **Mounting pitch 47.5 mm 1.870 inch**
4. **Built in varistor for excellent surge absorption**
5. **With LED indication for operation status verification**

## TYPICAL APPLICATIONS

- Heater control
- **Business use:**
    - Cooking machine
    - Vending machine
    - Freezer
    - Refrigerator
  - **Industrial use:**
    - Molding machine
    - Temperature controlled bath
    - Printing machine
    - Packing machine

## ORDERING INFORMATION



\* Random type is available by custom order.

## TYPES

### 1. AQ-A Solid State Relays

Type	Load current	Load voltage	Input voltage	Part No.
Zero-cross	15A	75V to 250V AC	4 to 32V DC	AQA211VL
	25A			AQA411VL
	40A			AQA611VL

Standard Packing; carton: 2 pcs., case: 60 pcs.  
Note: Random type also available. Please inquire.

### 2. Accessories

Type	Part No.	Packaged quantity
Standard heat sink (15A)	AQP-HS-J10A	5 in a carton, 20 in a case
Standard heat sink (25A)	AQP-HS-30/40A	5 in a carton, 20 in a case
Standard heat sink (40A)	AQP-HS-J25A	No carton, 5 in a case
Slim heat sink (45mm wide) (Mountable on a DIN rail)	AQP-HS-SJ20A	No carton, 8 in a case
DIN rail mounting plate	AQP-DPJ	5 in a bag, 50 in a case
Terminal cover	AQA801	—

# RATING

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

Item	Part No.	AQA211VL	AQA411VL	AQA611VL	Remarks
Input side	Input voltage	4 to 32V DC			
	Input current	Max. 20mA			
	Drop-out voltage	Min. 1V			
Output side	Max. load current	15A	25A	40A	
	Load voltage	75 to 250V AC			
	Frequency	45 to 65Hz			
	Non-repetitive surge current	150A	250A	400A	In one cycle at 60Hz
	"OFF-state" leakage current	Max. 10mA			at 60Hz
	"ON-state" voltage drop	Min. 1.6V			at Max. carrying current
	Min. load current*	100mA			

Note: \* When the load current is less than the rated minimum load current, please refer to [Cautions for Use](#).

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

Item	AQA211VL	AQA411VL	AQA611VL	Remarks
Operate time	Max. 1/2 cycle of voltage sine wave + 1ms			
Release time	Max. 1/2 cycle of voltage sine wave + 1ms			
Insulation resistance	Min. 100MΩ between input and output			at 500 V DC
Breakdown voltage	4,000 Vrms between input and output 2,500 Vrms between input, output and case			for 1min.
Vibration resistance (Functional)	10 to 55Hz double amplitude of 1.5mm			X, Y, Z axes
Shock resistance (Functional)	Min. 980 m/s <sup>2</sup>			X, Y, Z axes
Ambient temperature	-20°C to +80°C -4°F to +176°F			Non-condensing at low temperatures
Storage temperature	-20°C to +85°C -4°F to +185°F			Non-condensing at low temperatures
Operational method	Zero-cross (Turn ON and Turn OFF)			

# REFERENCE DATA

## 1. Load current vs. ambient temperature

Use load current within range specified in the figure below.

Tested condition

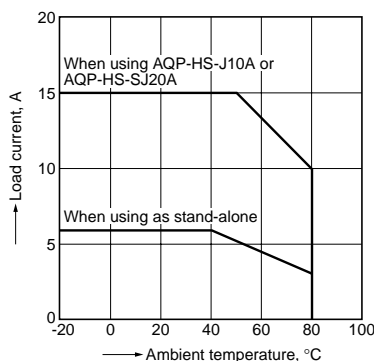
### With external heat sink

- (1) When using standard heat sink (AQP-HS-J25A)
  - (2) When using standard heat sink (AQP-HS-30/40A)
  - (3) When using standard heat sink (AQP-HS-J10A)
  - (4) When using standard heat sink (AQP-HS-SJ20A)
- 2) If attached to a heat sink, use a heat conductive compound (Ex. Momentive Performance Materials Inc. YG6111 or TSK5303) of similar coating to improve cooling.

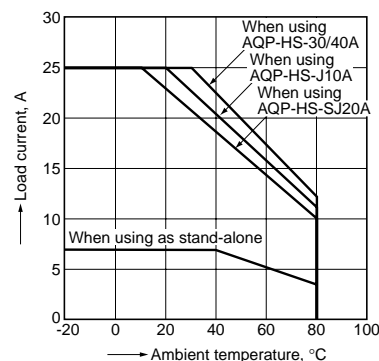
### Without external heat sink

If the mounting surface is not metallic and a heat sink is not used, expose the bottom surface and plate surface to improve heat dissipation.

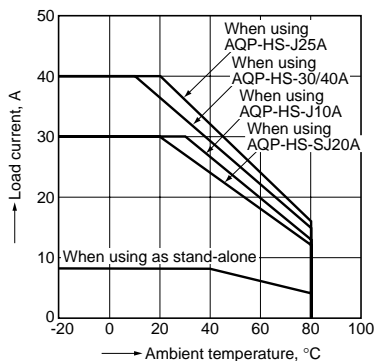
(1) 15A type (AQA211VL)



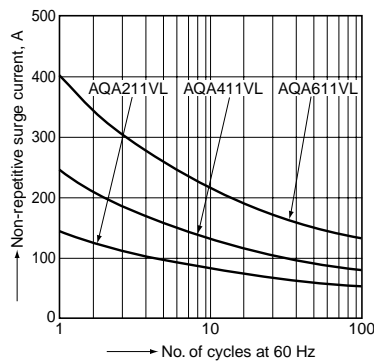
(2) 25A type (AQA411VL)



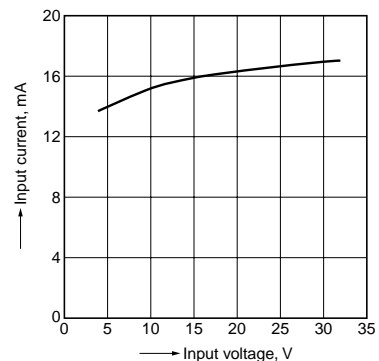
(3) 40A type (AQA611VL)



## 2. Non-repetitive surge current vs. carrying time characteristics



## 3. Input current vs. input voltage characteristics



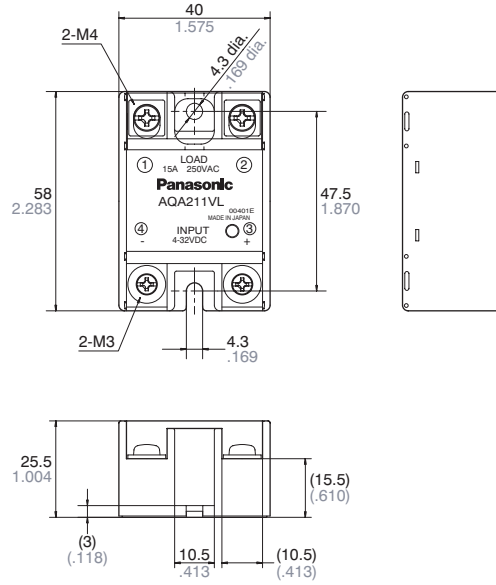
# AQ-A

**DIMENSIONS** (mm inch) Interested in CAD data? You can obtain CAD data for all products with a **CAD Data** mark from [your local Panasonic Electric Works representative](#).

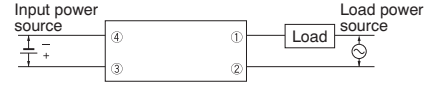
**CAD Data**



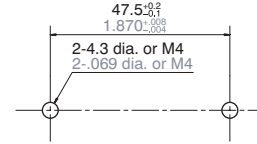
**External dimensions**



**Schematic**



**Mounting dimensions**



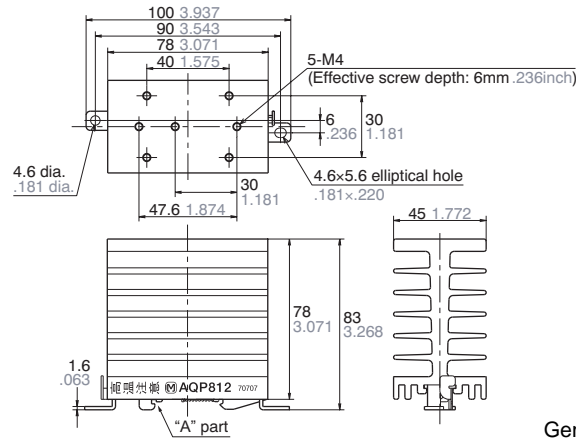
## ACCESSORIES (mm inch)

### AQP-HS-SJ20A Slim Heat Sink

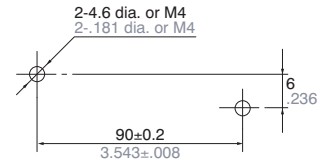
**CAD Data**



**External dimensions**



**Mounting dimensions**



Note: When using on a DIN rail, please install so that the "A" part is on top.

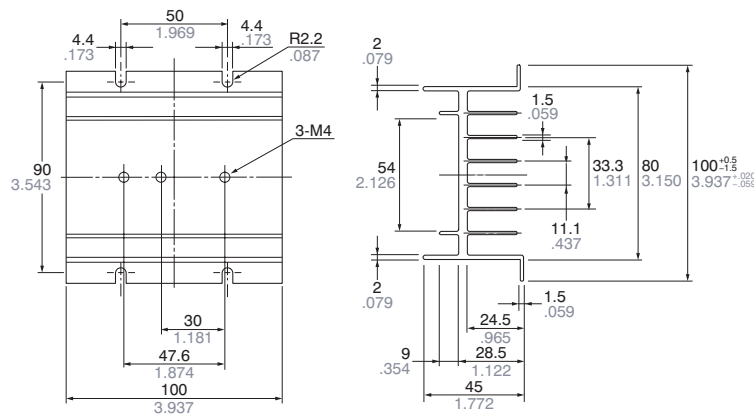
General tolerance:  $\pm 1.0 \pm 0.039$

### AQP-HS-J10A Standard Heat Sink

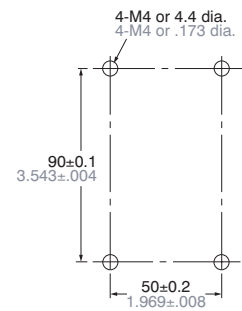
**CAD Data**



**External dimensions**



**Mounting dimensions**

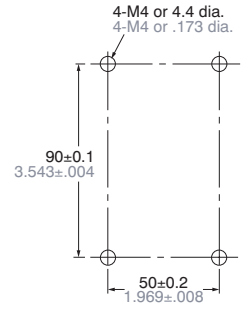
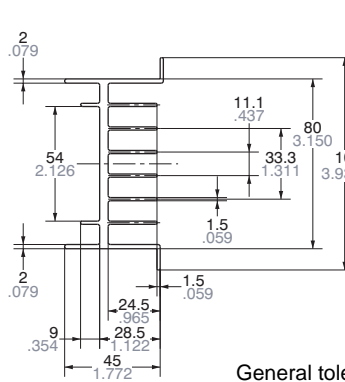
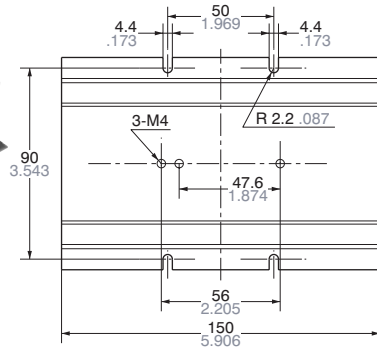


**AQP-HS-30/40A Standard Heat Sink**

**External dimensions**

**Mounting dimensions**

**CAD Data**



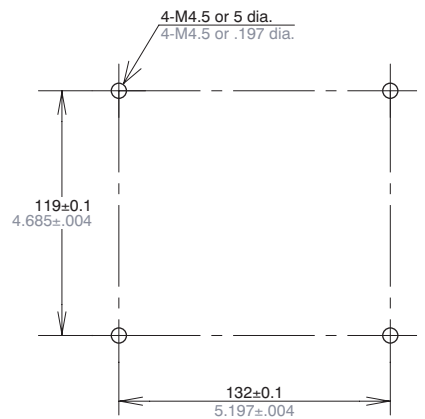
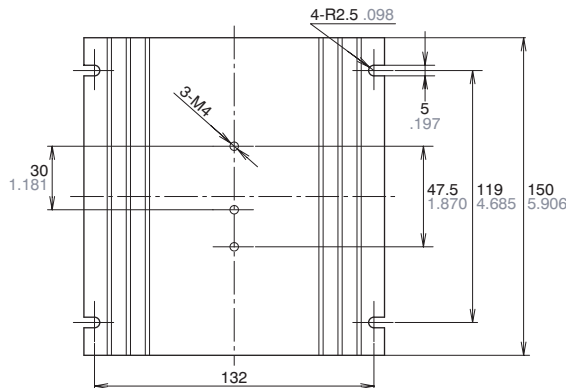
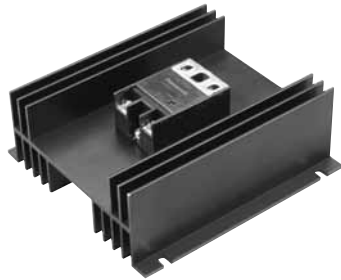
General tolerance: ±0.5 ±.020

**AQP-HS-J25A Standard Heat Sink**

**External dimensions**

**Mounting dimensions**

**CAD Data**

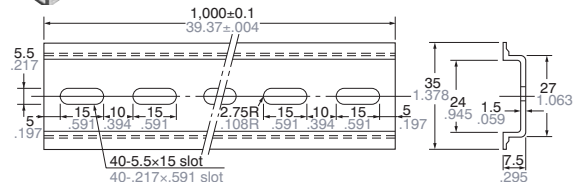
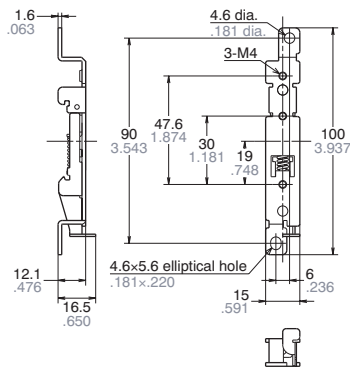


**AQP-DPJ DIN Rail Mounting Plate**

**AT8-DLA1 Mounting Rail**

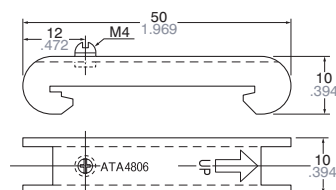
**CAD Data**

**CAD Data**



**ATA4806 Fastening plate**

**CAD Data**



**Cautions for Use**