

# HAG01M SERIES

## POWER RELAY



File No.:E75887



File No.:R 50471143



### FEATURES

- With arc extinguishing magnets
- High performance DC relay for photovoltaic power generation systems, energy storage system and xEV charging device, etc

### CONTACT RATINGS

|                           |                                                                              |
|---------------------------|------------------------------------------------------------------------------|
| Contact Arrangement       | 1A                                                                           |
| Contact Resistance        | Max.10mΩ (by voltage drop 6VDC 20A)                                          |
| Contact Material          | Silver Alloy(Non-Cd)                                                         |
| Contact Rating(Resistive) | 15A 500VDC,<br>On 1s/Off 19s, 30,000 ops.                                    |
| Max. Switching Voltage    | 500VDC                                                                       |
| Max. Switching Current    | 15A                                                                          |
| Mechanical Life           | 1×10 <sup>6</sup> operations                                                 |
| Electrical Life           | 15A 500VDC, ON 1s/OFF 19s 30,000 ops<br>20A 300VDC, ON 1s/OFF 19s 30,000 ops |

### ORDERING INFORMATION

|                                    |        |   |   |   |    |    |
|------------------------------------|--------|---|---|---|----|----|
|                                    | HAG01M | F | A | S | DC | 12 |
| Model                              |        |   |   |   |    |    |
| F:Class F H:Class H                |        |   |   |   |    |    |
| A:SPDM<br>single-pole, double-make |        |   |   |   |    |    |
| C:Dust Cover Type S:Sealed Type    |        |   |   |   |    |    |
| E:Flux Tight Type                  |        |   |   |   |    |    |
| Coil:DC                            |        |   |   |   |    |    |
| Coil Voltage                       |        |   |   |   |    |    |

### CHARACTERISTICS

|                               |                         |                                               |
|-------------------------------|-------------------------|-----------------------------------------------|
| Insulation Resistance         |                         | 1000MΩ (at 500VDC)                            |
| Dielectric Strength           | Between coil & contacts | 5000VAC 1min                                  |
|                               | Between open contacts   | 2000VAC 1min                                  |
| Surge Voltage                 |                         | 10kV(1.2/50μS)                                |
| Operate time (at nomi. volt.) |                         | ≤30ms                                         |
| Release time (at nomi. volt.) |                         | ≤10ms                                         |
| Humidity                      |                         | 5%~85% RH                                     |
| Operating Condition           |                         | -40°C~+85°C                                   |
| Shock Resistance              | Functional              | 98m/s <sup>2</sup>                            |
|                               | Destructive             | 980m/s <sup>2</sup>                           |
| Vibration resistance          |                         | 10Hz ~ 55Hz 1.5mm DA                          |
| Unit weight                   |                         | Approx. 130g                                  |
| Construction                  |                         | Sealed Type, Dust Cover Type, Flux Tight Type |

Notes: The data shown above are initial values.

#### Notes:

1. PC board assembled with dust cover type and flux tight type relays can not be washed and/or coated.
2. Dust cover type and flux tight type relays can not be used in the environment with dust, or H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub> or similar gaseous environment etc.

### COIL DATA

at 25°C

| Nominal Voltage VDC | Operate Voltage (Max.) VDC | Release Voltage (Min.) VDC | *Max. Allowable Voltage VDC | Coil Resistance Ω±10% |
|---------------------|----------------------------|----------------------------|-----------------------------|-----------------------|
| 6                   | 4.50                       | 0.30                       | 6.60                        | 14.4                  |
| 9                   | 6.75                       | 0.45                       | 9.90                        | 32.4                  |
| 12                  | 9.00                       | 0.60                       | 13.20                       | 57.6                  |
| 24                  | 18.00                      | 1.20                       | 26.40                       | 230.4                 |

Note:\*\*Max Allowable Voltage\*: The relay coil can endure max allowable voltage for a short period time only.

### COIL

|            |              |
|------------|--------------|
| Coil Power | Approx. 2.5W |
|------------|--------------|

This datasheet is for customers' reference. All the specifications are subject to change without notice.



\* SINCE 1976 \*

Tel:13650051936

Website : www.edamcn.com

Email: leo@edamcn.com

# RELAYS

# HAG01M SERIES

## POWER RELAY

### SAFETY APPROVAL RATINGS

|        |                                                         |
|--------|---------------------------------------------------------|
| UL&CUL | 20A 300VDC, ON 0.5s/OFF 9s, 25°C, 3×10 <sup>4</sup> OPS |
|        | 20A 300VDC, ON 0.5s/OFF 9s, 85°C, 1×10 <sup>4</sup> OPS |

#### NOTES:

1. All values without specified temperature are at 25°C.
2. The above lists the typical loads only. Other loads may be available upon request.

|     |                                                        |
|-----|--------------------------------------------------------|
| TüV | 10A 500VDC, ON 1s/OFF 9s, 25°C, 3×10 <sup>4</sup> OPS  |
|     | 15A 500VDC, ON 1s/OFF 19s, 25°C, 3×10 <sup>4</sup> OPS |
|     | 20A 300VDC, ON 1s/OFF 19s, 25°C, 3×10 <sup>4</sup> OPS |
|     | 10A 500VDC, ON 1s/OFF 9s, 85°C, 1×10 <sup>4</sup> OPS  |
|     | 15A 500VDC, ON 1s/OFF 19s, 85°C, 1×10 <sup>4</sup> OPS |
|     | 20A 300VDC, ON 1s/OFF 19s, 85°C, 1×10 <sup>4</sup> OPS |

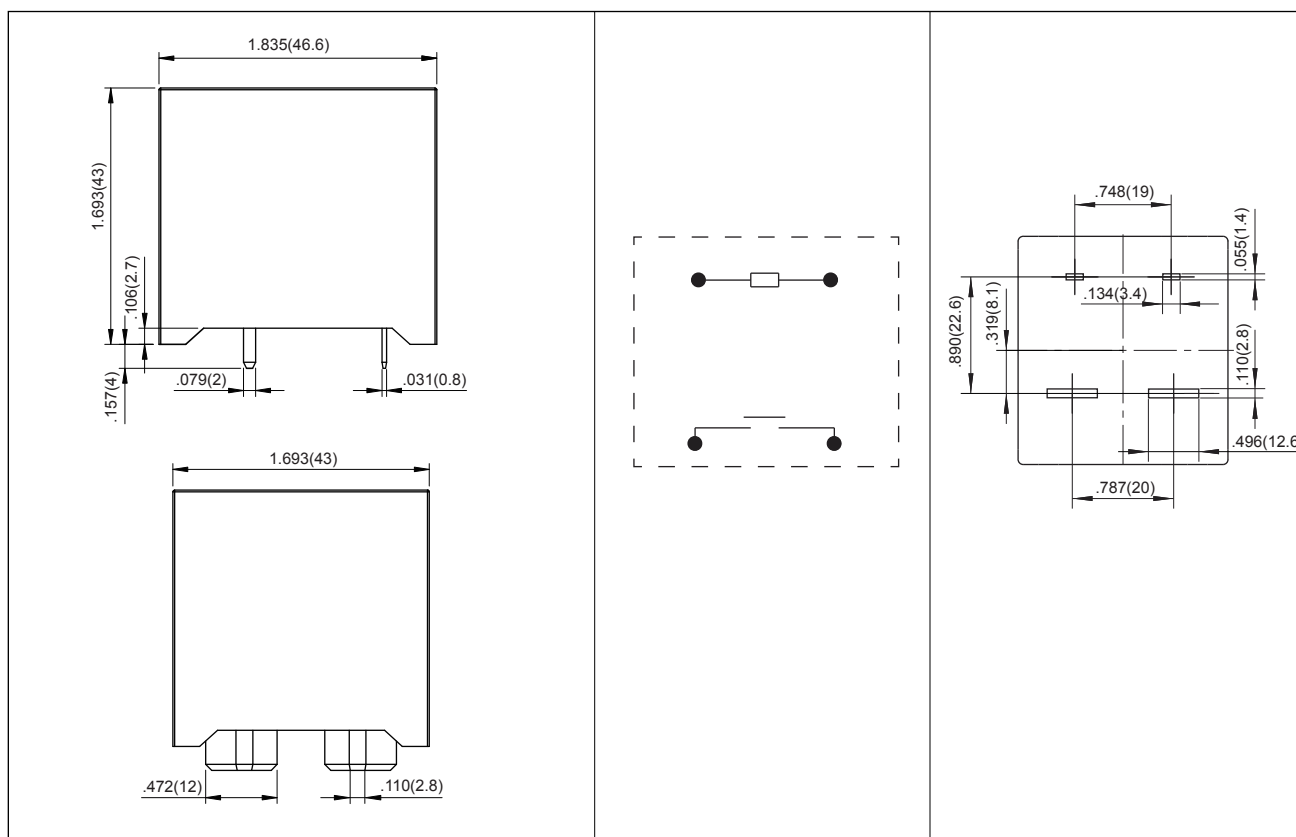
### OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

Unit: inch(mm)

Outline Dimensions

Wiring Diagram  
(Bottom view)

PCB Layout  
(Bottom view)



- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
- 2) The tolerance without indicating for PCB layout is always ±0.1mm.

This datasheet is for customers' reference. All the specifications are subject to change without notice.



\* SINCE 1976 \*

Tel:13650051936

Website : [www.edamcn.com](http://www.edamcn.com)

Email: [leo@edamcn.com](mailto:leo@edamcn.com)

# RELAYS

# HAG01M SERIES

## POWER RELAY

### PACKAGING SPECIFICATION

| BLISTER BOX | OUTER CARTON | OUTER CARTON SIZE    |
|-------------|--------------|----------------------|
| 9PCS        | 54PCS        | L455mm*W220mm*H185mm |

### APPLICATION GUIDELINES

#### Automatic Wave Soldering

- \* Wave solder is the optimum method for soldering.
- \* Adjust the level of solder so that it does not overflow onto the top of the PC board.
- \* Unless otherwise specified, solder under the following conditions depending on the type of relay.

| Preheat time<br>20°C-100°C | Rising slope<br>20°C-120°C | Decreasing slope<br>Peak-150°C | Soldering temperature<br>255°C-265°C |
|----------------------------|----------------------------|--------------------------------|--------------------------------------|
| 90±5 seconds               | <3°C/s                     | <4°C/s                         | 3~5s                                 |

#### Hand Soldering

- \* Keep the tip of the soldering iron clean.

|                      |                          |
|----------------------|--------------------------|
| Solder Iron          | 30W or 60W               |
| Iron Tip Temperature | Approx. 350°C 662°F      |
| Solder Time          | Within approx. 3 seconds |

- \* Immediate air cooling is recommended to prevent deterioration of the relay and surrounding parts due to soldering heat.
- \* Although the sealed type relay can be cleaned, avoid immersing the relay into cold liquid (such as washing solvent) immediately after soldering. Doing so may deteriorate the sealing performance.

#### Discard the dropped product

This datasheet is for customers' reference. All the specifications are subject to change without notice.