

# JE9 (HF8509)

# HIGH POWER LATCHING RELAY



File No.:E133481



File No.:CQC02001001950



### Features

- 60A switching capability
- 4kV dielectric strength (between coil and contacts)
- Heavy load up to 15000VA
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (38.0 x 30.0 x 16.0) mm

### CONTACT DATA

Contact arrangement	1A		
Voltage drop <sup>2)</sup>	Typ.: 100mV (at 10A) Max.: 250mV (at 10A)		
Contact material	AgSnO <sub>2</sub> , AgCdO		
Contact rating (Res. load)	60A 250VAC 5000 OPS	50A 250VAC 10000 OPS	40A 250VAC 100000 OPS
Max. switching voltage	250VAC		
Max. switching current	60A		
Max. switching power	15000VA		
Mechanical endurance	1 x 10 <sup>6</sup> OPS		
Electrical endurance	1 x 10 <sup>5</sup> OPS (at 40A 250VAC)		

### CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
Creepage distance	8mm	
Operate time (at nomi. volt.)	20ms max.	
Release time (at nomi. volt.)	20ms max.	
Shock resistance	Functional	100m/s <sup>2</sup> (10g)
	Destructive	1000m/s <sup>2</sup> (100g)
Vibration resistance	10Hz to 55Hz 1.5mm DA	
Humidity	98% RH, 40°C	
Ambient temperature	-40°C to 70°C	
Termination	PCB & QC	
Unit weight	Approx. 33g	
Construction	Wash tight, Dust protected	

### COIL

Coil power      Single Coil: 1.0W;    Double Coil: 2.0W

### COIL DATA <sup>3)</sup>

Nominal Voltage VDC	Pick-up Voltage VDC	Pulse Duration ms	Coil Resistance Ω	
5	3.5	50	Single Coil	24 x (1±10%)
6	4.2	50		35 x (1±10%)
9	6.3	50		80 x (1±10%)
12	8.4	50		145 x (1±10%)
24	16.8	50		575 x (1±10%)
48	33.6	50		2270 x (1±10%)
5	3.5	50	Double Coils	2 x 12 x (1±10%)
6	4.2	50		2 x 17.5 x (1±10%)
9	6.3	50		2 x 40 x (1±10%)
12	8.4	50		2 x 72 x (1±10%)
24	16.8	50		2 x 285 x (1±10%)
48	33.6	50		2 x 1135 x (1±10%)

- Notes:** 1) The data shown above are initial values.  
 2) Equivalent to the max. initial contact resistance is 50mΩ (at 1A 24VDC), and measured when coil is energized with 100% nominal voltage at 25°C.  
 3) When requiring other nominal voltage, special order allowed.

### SAFETY APPROVAL RATINGS

UL&CUR	AgCdO	40A 250VAC at 70°C 50A 250VAC at 70°C 60A 250VAC at 70°C
	AgSnO <sub>2</sub>	40A 250VAC at 70°C 50A 250VAC at 70°C 60A 250VAC at 70°C

**Notes:** Only some typical ratings are listed above. If more details are required, please contact us.



HONGFA RELAY

ISO9001、ISO/TS16949、ISO14001、OHSAS18001 CERTIFIED

2007 Rev. 2.00

## ORDERING INFORMATION

		<b>JE9</b>		<b>-3</b>	<b>I /</b>	<b>12</b>	<b>-H</b>	<b>S</b>	<b>T</b>	<b>-R</b>	<b>A</b>	<b>X-X</b>	<b>(XXX)</b>
<b>Type</b> <sup>1)</sup>	JE9 HF8509 (Old type)												
<b>Version</b> (See the following)	<b>1:</b> 1 type, PCB terminals <b>2:</b> 2 type, PCB terminals <b>3:</b> Double Coil												
<b>Load type</b> <sup>2)</sup>	<b>I:</b> Inrush <b>Nil:</b> Standard												
<b>Coil voltage</b>	5, 6, 9, 12, 24, 48VDC												
<b>Contact form</b>	<b>H:</b> 1 Form A												
<b>Construction</b> <sup>3)</sup>	<b>S:</b> Wash tight <b>Nil:</b> Dust protected												
<b>Contact material</b>	<b>T:</b> AgSnO <sub>2</sub> <b>Nil:</b> AgCdO												
<b>Polarity</b>	<b>R1 to R5:</b> Negative polarity (See diagram wiring below) <b>Nil:</b> Positive polarity												
<b>Solder direction of twisted wire</b>	<b>A to I:</b> See below direction of solder wire <b>Nil:</b> Without solder wire												
<b>Twisted copper wire length</b>	<b>First X:</b> length of left side <b>Second X:</b> length of right side												
<b>Customer special code</b> <sup>4)</sup> (Only for special requirements)	e.g. (551) stands for RoHS compliant (Cadmium containing contacts) (555) stands for RoHS compliant (Cadmium-free contacts)												

- Notes:**
- 1) We have now gradually updated our ordering information. We suggest new type should be selected.
  - 2) For high inrush load with the steady-state current of less than 40A, please choose type I.
  - 3) Under the ambience with dangerous gas like H<sub>2</sub>S, SO<sub>2</sub> or NO<sub>2</sub>, wash tight type is recommended; please test the relay in real applications. If the ambience allows, dust protected is preferentially recommended.
  - 4) JE9 is an environmental friendly product. Please mark a special code (555) or (551) when ordering. (551) stands RoHS compliant with Cadmium contact; (555) stands for RoHS compliant with Cadmium-free contact.

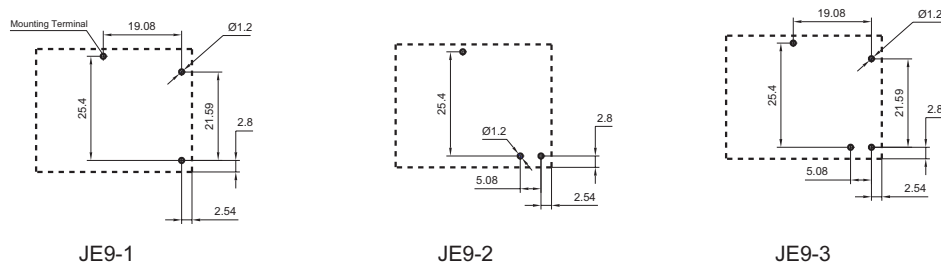
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

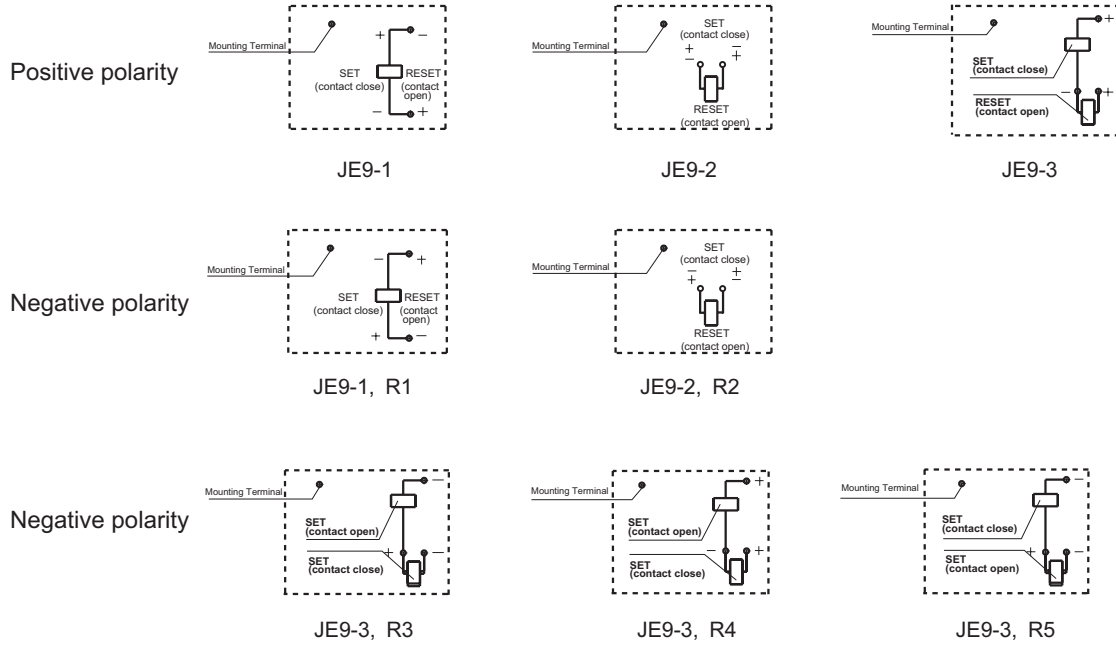
### Outline Dimensions



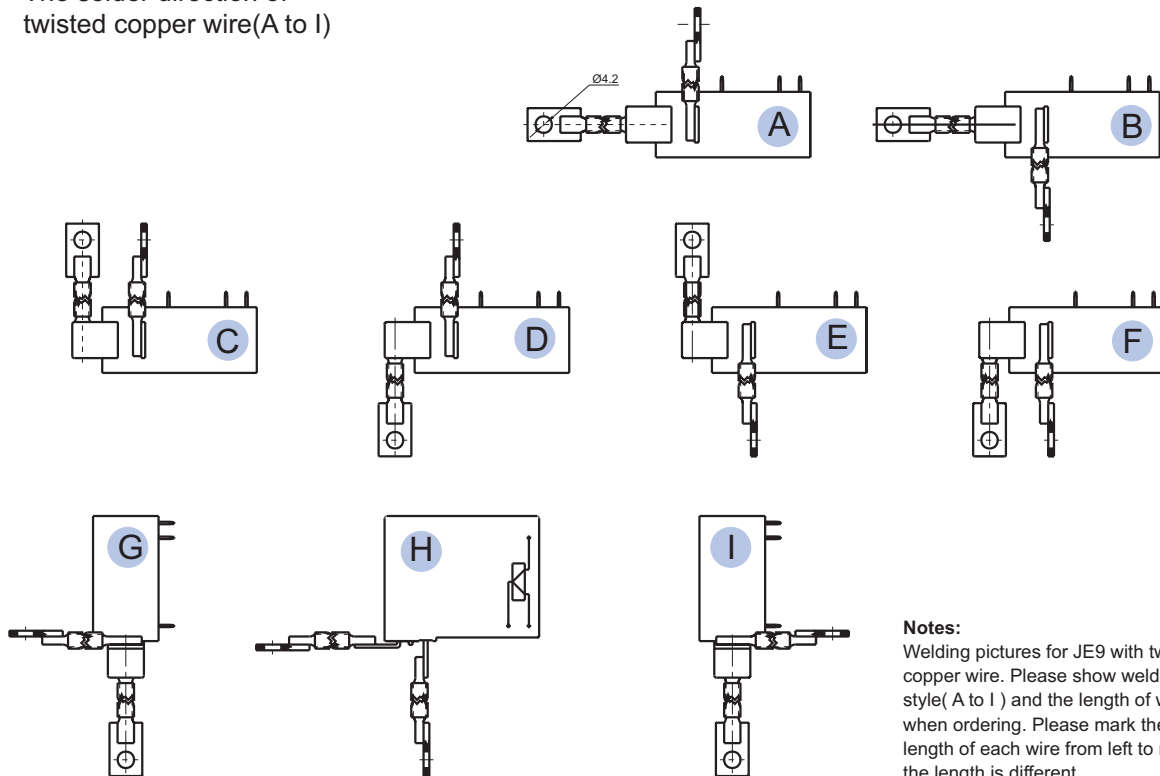
### PCB Layout (Bottom view)



Wiring Diagram (Bottom view)



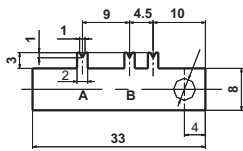
The solder direction of twisted copper wire(A to I)



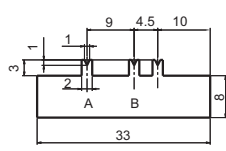
**Notes:**  
Welding pictures for JE9 with twisting copper wire. Please show welding style(A to I) and the length of wires when ordering. Please mark the length of each wire from left to right if the length is different.

Style of manganin shunt

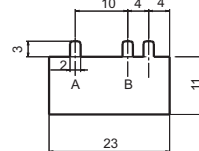
Notes: Style F1 to F44, the thickness of shunt: h=1 or h=2, R: resistance of shunt between A-B ( $\mu\Omega, \pm 10\%$ )



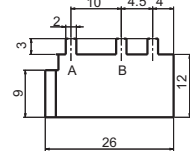
F1(h=1,R=500), F2(h=2,R=250)



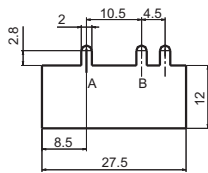
F3(h=1,R=500), F4(h=2,R=250)



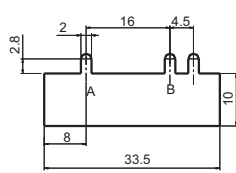
F5(h=1,R=400), F6(h=2,R=200)



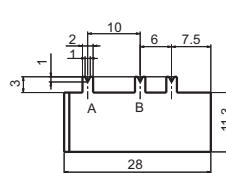
F7(h=1,R=360), F8(h=2,R=180)



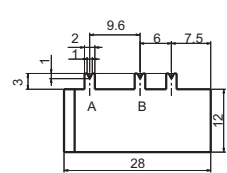
F9(h=1,R=370), F10(h=2,R=185)



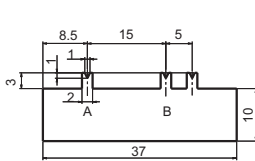
F11(h=1,R=700), F12(h=2,R=350)



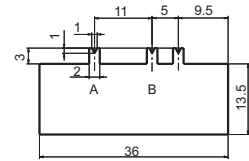
F13(h=1,R=390), F14(h=2,R=195)



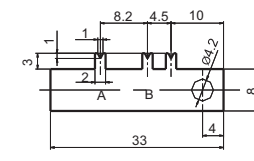
F15(h=1,R=350), F16(h=2,R=175)



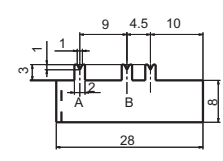
F17(h=1,R=660), F18(h=2,R=330)



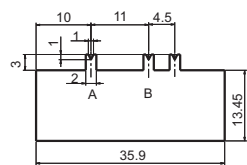
F19(h=1,R=360), F20(h=2,R=180)



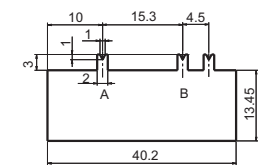
F21(h=1,R=450), F22(h=2,R=225)



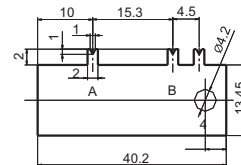
F23(h=1,R=500), F24(h=2,R=250)



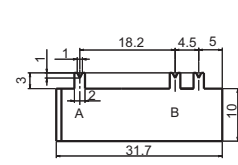
F25(h=1,R=380), F26(h=2,R=190)



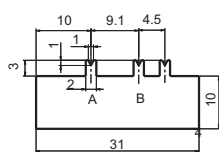
F27(h=1,R=500), F28(h=2,R=250)



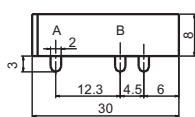
F29(h=1,R=500), F30(h=2,R=250)



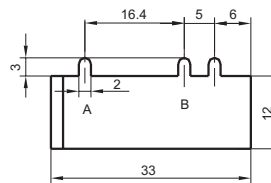
F31(h=1,R=800), F32(h=2,R=400)



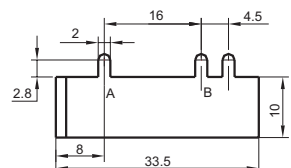
F33(h=1,R=400), F34(h=2,R=200)



F35(h=1,R=600), F36(h=2,R=300)



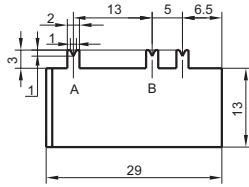
F37(h=1,R=600), F38(h=2,R=300)



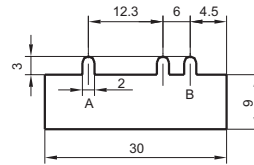
F39(h=1,R=700), F40(h=2,R=350)

**Style of manganin shunt**

**Notes:** Style F1 to F44, the thickness of shunt: h=1 or h=2, R: resistance of shunt between A-B ( $\mu\Omega, \pm 10\%$ )

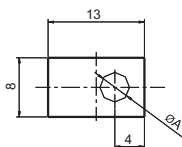


**F41**(h=1,R=440), **F42**(h=2,R=220)

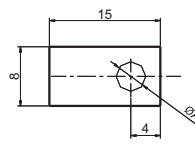


**F43**(h=1,R=600), **F44**(h=2,R=300)

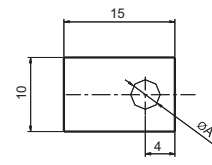
**Connector style**



**Style 056:** A=Ø4.2  
**Style 056-1:** A=Ø5.2

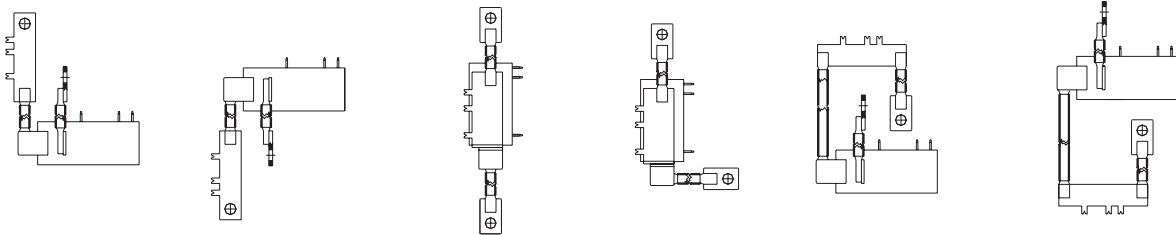


**Style 076:** A=Ø4.2  
**Style 076-1:** A=Ø5.2



**Style 077:** A=Ø4.2  
**Style 077-1:** A=Ø5.2  
**Style 077-2:** A=Ø6.2

**Typical shunt connection ways**



**Notes:** We can make special connection according to customer's requirement.  
Please provide us with the drawing, and shunt specification and connector's specification.

**Remark:** 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$ .  
2) The tolerance without indicating for PCB layout is always  $\pm 0.1\text{mm}$ .

**Notice**

- Relay is on the "set" status when being released from stock, with the consideration of shock arisen from transit and relay mounting, relay would be changed to "reset" status, therefore, when application (connecting the power supply), please reset the relay to "set" or "reset" status on request.
- In order to maintain "set" or "reset" status, energized voltage to coil should reach the rated voltage, impulse width should be 5 times more than "set" or "reset" time. Do not energize voltage to "set" coil and "reset" coil simultaneously. And also long energized time (more than 1 min) should be avoided.
- The terminals of relay without twisted copper wire can not be tin-soldered, can not be moved willfully, more over two terminals can not be fixed at the same time.

**Disclaimer**

This datasheet is for the customers' reference. All the specifications are subject to change without notice.  
We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.