

# HF115F-A

## MINIATURE HIGH POWER RELAY

c **UL** US

File No.:E134517



File No.:116934



### Features

- AC voltage coil type
- 16A switching capability
- 1 & 2 pole configurations
- 5kV dielectric strength (between coil and contacts)
- Low height: 15.7 mm
- Creepage distance: 10mm
- Meeting VDE 0700, 0631 reinforce insulation
- Product in accordance to IEC 60335-1 available
- Sockets available
- Plastic sealed and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 12.7 x 15.7) mm

### CONTACT DATA

Contact arrangement	1A, 1B, 1C	2A, 2B, 2C
Contact resistance	100mΩ (at 1A 6VDC)	
Contact material	See ordering info.	
Contact rating (Res. load)	12A/16A 250VAC	8A 250VAC
Max. switching voltage	440VAC / 300VDC	
Max. switching current	12A / 16A	8A
Max. switching power	3000VA / 4000VA	2000VA
Mechanical endurance	1 x 10 <sup>6</sup> OPS	
Electrical endurance	5 x 10 <sup>4</sup> OPS (See approval reports for more details)	

### COIL

Coil power	0.75VA
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### COIL DATA (at 50Hz)

at 23°C

Nominal Voltage VAC	Pick-up Voltage VAC	Drop-out Voltage VAC	Coil Current mA	Coil DC Resistance Ω
24	18.00	3.60	31.6	350 x (1±10%)
115	86.30	17.30	6.6	8100 x (1±15%)
230	172.50	34.50	3.2	32500 x (1±15%)

### CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
	Between contact sets	2500VAC 1min
Temperature rise (at nomi. volt.)	65K max.	
Shock resistance *	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance *	10Hz to 150Hz 10g/5g	
Humidity	35% to 85% RH	
Ambient temperature	-40°C to 70°C	
Termination	PCB	
Unit weight	Approx. 13.5g	
Construction	Plastic sealed, Flux proofed	

Notes: 1) The data shown above are initial values.  
2) \* Index is not that of relay length direction.

### SAFETY APPROVAL RATINGS

UL/CUL	12A 250VAC 16A 250VAC 8A 250VAC
VDE (AgNi, AgNi+Au)	12A 250VAC 16A 250VAC 8A 250VAC
VDE (AgSnO <sub>2</sub> , AgSnO <sub>2</sub> +Au)	12A 250VAC 8A 250VAC

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



HONGFA RELAY

ISO9001, ISO/TS16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2010 Rev. 1.00

## ORDERING INFORMATION

Type	HF115F-A / 024 -1H S 1 A F (XXX)
Coil voltage	24, 115, 230VAC
Contact arrangement	1H: 1 Form A 1D: 1 Form B 1Z: 1 Form C 2H: 2 Form A 2D: 2 Form B 2Z: 2 Form C
Construction <sup>1)</sup>	S: Plastic sealed Nil: Flux proofed
Version	1: 3.5mm 1 pole 12A 2: 5.0mm 1 pole 12A 3: 5.0mm 1 pole 16A 4: 5.0mm 2 pole 8A
Contact material <sup>2)</sup>	A: AgSnO <sub>2</sub> B: AgNi Nil: AgCdO G: AgCdO+Au plated AG: AgSnO <sub>2</sub> +Au plated BG: AgNi+Au plated
Insulation standard	F: Class F
Customer special code	e.g. (335) stands for product in accordance to IEC 60335-1 (GWT)

**Notes:** 1) We recommend flux proofed types for a clean environment (free from contaminations like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.).  
If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.  
2) For gold plated type, the min. switching current and min. switching voltage is 10mA 5VDC.

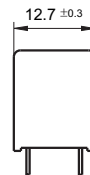
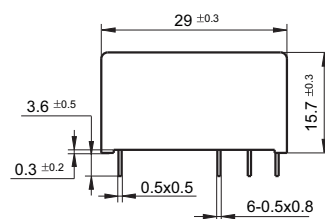
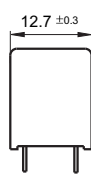
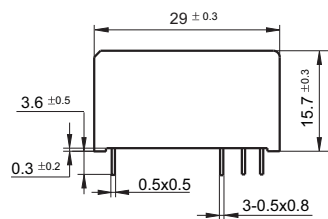
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

### Outline Dimensions

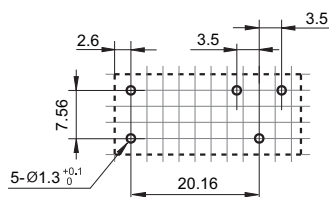
3.5mm Pinning (HF115F-A/ □□□ -□□ -□ -1 -□□)

5mm Pinning (HF115F-A/ □□□ -□□ -□ -2/3/4 -□□)

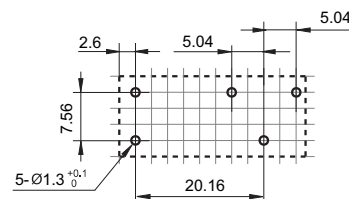


### PCB Layout (Bottom view)

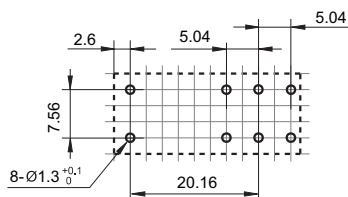
3.5mm 1Pole 12A



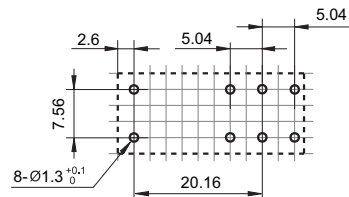
5mm 1Pole 12A



5mm 1Pole 16A



5mm 2Pole 8A



Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$ mm, tolerance should be  $\pm 0.2$ mm; outline dimension  $> 1$ mm and  $\leq 5$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 5$ mm, tolerance should be  $\pm 0.4$ mm.  
2) The tolerance without indicating for PCB layout is always  $\pm 0.1$ mm.  
3) The width of the gridding is 2.52mm.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

### Wiring Diagram (Bottom view)

HF115F-A/ □□□ -□□ -□ -1/2 -□□, 3.5/5mm Pinning, 1 Pole, 12A



1 Form A



1 Form B



1 Form C

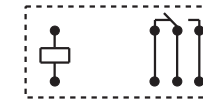
HF115F-A/ □□□ -□□ -□ -3 -□□, 5mm Pinning, 1 Pole, 16A



1 Form A



1 Form B



1 Form C

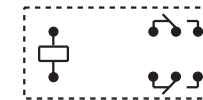
HF115F-A/ □□□ -□□ -□ -4 -□□, 5mm Pinning, 2 Pole, 8A



2 Form A



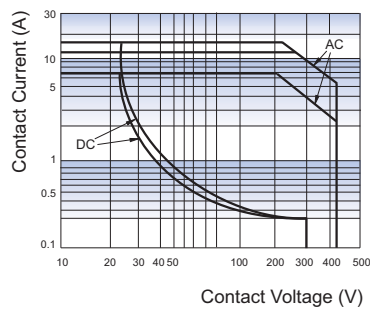
2 Form B



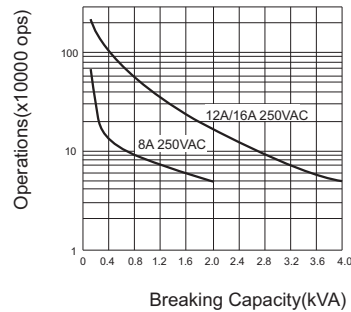
2 Form C

## CHARACTERISTIC CURVES

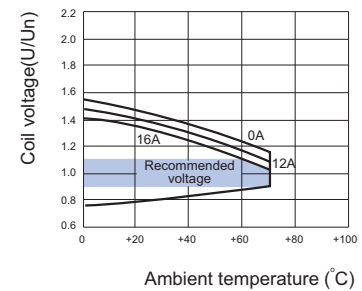
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL OPERATING RANGE (AC) \*



**Notes:** \* The use of a relay with an energising voltage other than the rated coil voltage may lead to reduced electrical life.

An energising voltage over the above range may damage the insulation of relay coil.

### 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.

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