

# HF115F-T/TH

# MINIATURE HIGH POWER RELAY



File No.: E134517



File No.: 116934



File No.: CQC02001001951



## Features

- High Temperature: 105°C
- Low height 15.7 mm
- 5kV dielectric strength (between coil and contacts)
- Creepage distance: 10mm
- Meeting VDE 0700, 0631 reinforce insulation
- Product in accordance to IEC 60335-1 available
- Sockets available
- Wash tight 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, 1C
Contact resistance	100mΩ (at 1A 6VDC)
Contact material	See ordering info.
Contact rating (Res. load)	HF115F-TH: 10A 250VAC HF115F-T: 16A 250VAC
Max. switching voltage	440VAC / 125VDC
Max. switching current	16A
Max. switching power	HF115F-TH: 2500VA HF115F-T: 4000VA
Mechanical endurance	1 x 10 <sup>7</sup> OPS
Electrical endurance	1 x 10 <sup>5</sup> OPS (See approval reports for more details)

## CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
Surge voltage (between coil & contacts)	10kV (1.2X50μs)	
Operate time (at nomi. volt.)	15ms max.	
Release time (at nomi. volt.)	8ms max.	
Temperature rise (at nomi. volt.)	55K 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 105°C	
Termination	PCB	
Unit weight	Approx. 13.5g	
Construction	Wash tight, Flux proofed	

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

## COIL

Coil power	HF115F-TH: 250mW; HF115F-T: 400mW
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## COIL DATA

at 23°C

### Standard type (HF115F-T)

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
5	3.50	0.5	6.5	62 x (1±10%)
6	4.20	0.6	7.8	90 x (1±10%)
9	6.30	0.9	11.7	202 x (1±10%)
12	8.40	1.2	15.6	360 x (1±10%)
18	12.6	1.8	23.4	810 x (1±10%)
24	16.8	2.4	31.2	1440 x (1±10%)
48	33.6	4.8	62.4	5760 x (1±10%)
60	42.0	6.0	78	7500 x (1±15%)

### Sensitive type (HF115F-TH)

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
5	3.75	0.5	6.5	100 x (1±10%)
6	4.50	0.6	7.8	144 x (1±10%)
9	6.75	0.9	11.7	324 x (1±10%)
12	9.00	1.2	15.6	576 x (1±10%)
18	13.50	1.8	23.4	1296 x (1±10%)
24	18.00	2.4	31.2	2304 x (1±10%)
48	36.00	4.8	62.4	9216 x (1±15%)
60	45.00	6.0	78	12857 x (1±15%)

**Notes:** The max. allowable voltage in the COIL DATA is coil overdrive voltage, it is the instantaneous max. voltage which the relay coil could endure in a very short time.



HONGFA RELAY

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

2009 Rev. 1.01

## SAFETY APPROVAL RATINGS

<b>VDE</b>	HF115F-TH-1H(S)3	10A 250VAC at 105°C 6A 400VAC at 105°C
	HF115F-T-1H(S)3B	16A 250VAC at 105°C
	HF115F-TH-1Z(S)3B	10A 250VAC at 105°C
	HF115F-T-1Z(S)3B	NO: 16A 250VAC at 105°C NC: 5A 250VAC at 105°C
<b>UL&amp;CUL</b>	HF115F-TH-1H(S)3B	10A 277VAC
	HF115F-T-1H(S)3B	16A 277VAC

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

## ORDERING INFORMATION

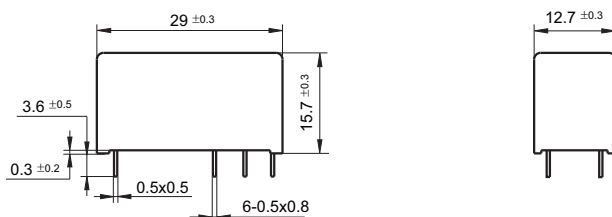
<b>HF115F-T/TH 012 -1H S 3 A (XXX)</b>	
<b>Type</b>	HF115F-T: Standard HF115F-TH: High Sensitive
<b>Coil voltage</b>	5, 6, 9, 12, 18, 24, 48, 60VDC
<b>Contact arrangement</b>	<b>1H:</b> 1 Form A <b>1Z:</b> 1 Form C
<b>Construction</b> <sup>1)</sup>	<b>S:</b> Wash tight <b>Nil:</b> Flux proofed
<b>Version</b>	<b>3:</b> 5.0mm
<b>Contact material</b>	<b>A:</b> AgSnO <sub>2</sub> <b>B:</b> AgNi <b>Nil:</b> AgCdO
<b>Customer special code</b>	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 wash tight 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.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

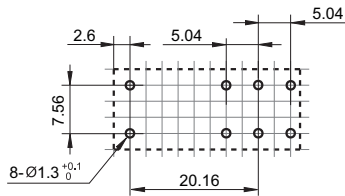
### Outline Dimensions



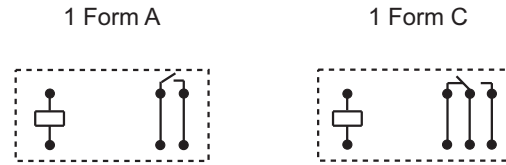
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

PCB Layout  
(Bottom view)



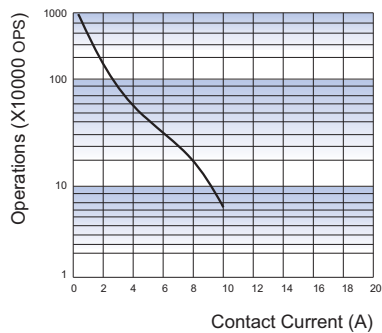
Wiring Diagram  
(Bottom view)



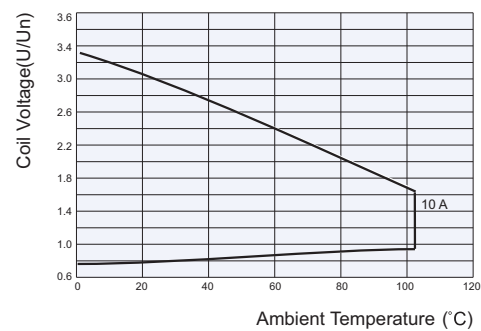
- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$ mm, tolerance should be  $\pm 0.2$ mm; outline dimension  $> 1$ mm and  $\leq 5$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 5$ mm, tolerance should be  $\pm 0.4$ mm.  
 2) The tolerance without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

## CHARACTERISTIC CURVES

ENDURANCE CURVE



COIL OPERATING RANGE (DC)



### 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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