

# HF3FF

# SUBMINIATURE HIGH POWER RELAY



File No.:E134517



File No.:40025218



File No.:R50148356



File No.:CQC08002027861



## Features

- 15A switching capability
- 1 Form A and 1 Form C configurations
- Subminiature, standard PCB layout
- Plastic sealed and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (19.0 x 15.2 x 15.5) mm

## CONTACT DATA

Contact arrangement	1A	1C
Contact resistance	100mΩ max.(at 1A 6VDC)	
Contact material	AgSnO <sub>2</sub> , AgCdO	
Contact rating (Res. load)	10A 277VAC/28VDC	
Max. switching voltage	277VAC / 30VDC	
Max. switching current	15A	10A
Max. switching power	2770VA / 210W	
Mechanical endurance	1 x 10 <sup>7</sup> OPS	
Electrical endurance <sup>1)</sup>	1 x 10 <sup>5</sup> OPS (NO, at 7A 250VAC) 5 x 10 <sup>4</sup> OPS (NO, at 10A 250VAC)	

## CHARACTERISTICS

Insulation resistance	100MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	1500VAC 1min
	Between open contacts	750VAC 1min
Operate time (at nomi. volt.)	10ms max.	
Release time (at nomi. volt.)	5ms max.	
Shock resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance	10Hz to 55Hz 1.5mm DA	
Humidity	5% to 85% RH	
Ambient temperature	-40°C to 70°C	
Termination	PCB	
Unit weight	Approx. 10g	
Construction	Plastic sealed, Flux proofed	

- Notes:** 1) For sealed type, the vent-hole cover should be excised.  
 2) The data shown above are initial values.  
 3) Please find coil temperature curve in the characteristic curves below.  
 4) UL insulation system: Class B

## COIL

Coil power	5VDC to 24VDC: Approx. 360mW; 48VDC: Approx. 510mW
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## COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Allowable Voltage VDC	Coil Resistance Ω
5	3.80	0.5	6.5	70 x (1±10%)
6	4.50	0.6	7.8	100 x (1±10%)
9	6.80	0.9	11.7	225 x (1±10%)
12	9.00	1.2	15.6	400 x (1±10%)
18	13.5	1.8	23.4	900 x (1±10%)
24	18.0	2.4	31.2	1600 x (1±10%)
48	36.0	4.8	62.4	4500 x (1±10%)
48 <sup>1)</sup>	36.0	4.8	62.4	6400 x (1±10%)

**Notes:** 1) There are 2 types for 48V--510mW and 360mW. The coil resistance for 510mW type is 4500ohm while for that for 360mW type is 6400ohm. If 360mW type is required, please add a special suffix (068) in the ordering information.

## SAFETY APPROVAL RATINGS

UL/CUL	1 Form A	10A 277VAC / 28VDC TV-5 120VAC (AgSnO <sub>2</sub> ) 15A 125VAC 1/2HP 125VAC (AgSnO <sub>2</sub> )
	1 Form C	10A 277VAC / 28VDC 10A 120VAC 1/2 HP 125VAC (AgSnO <sub>2</sub> )
VDE (only AgSnO <sub>2</sub> )	1 Form A	10A 250VAC 12A 125VAC
	1 Form C	5A 250VAC NO: 10A 250VAC NO: 12A 125VAC

**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

2012 Rev. 1.01

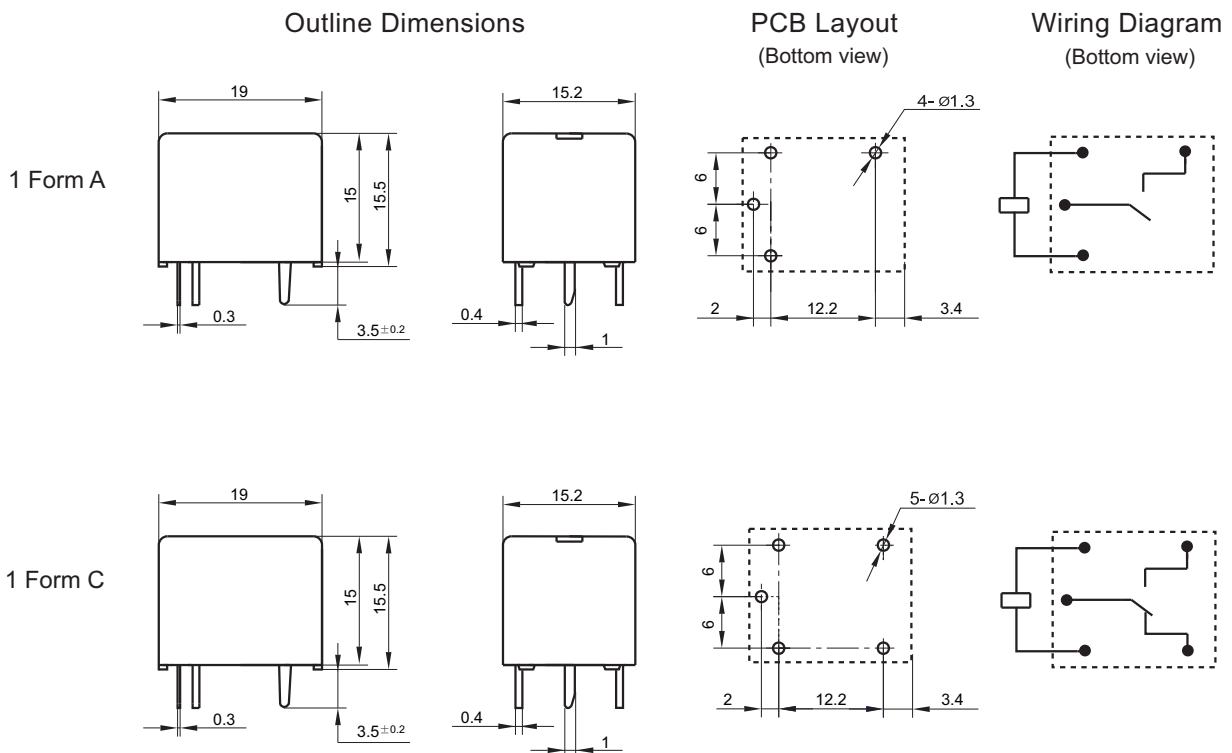
## ORDERING INFORMATION

Type	HF3FF / 012 -1H S T (XXX)	
Coil voltage	5, 6, 9, 12, 18, 24, 48VDC	
Contact arrangement	1H:1 Form A	1Z:1 Form C
Construction <sup>1)</sup>	S: Plastic sealed	Nil: Flux proofed
Contact material	T: AgSnO <sub>2</sub>	Nil: AgCdO
Customer special code		

**Notes:** 1) Under the ambience with dangerous gas like H<sub>2</sub>S, SO<sub>2</sub> or NO<sub>2</sub>, plastic sealed type is recommended; Please test the relay in real applications.  
If the ambience allows, flux proofed type is preferentially recommended.  
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

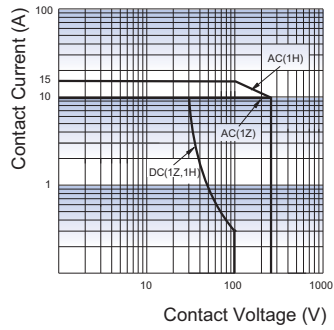
Unit: mm



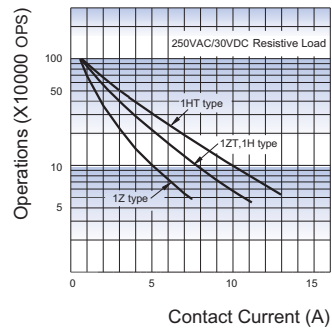
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be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

## CHARACTERISTIC CURVES

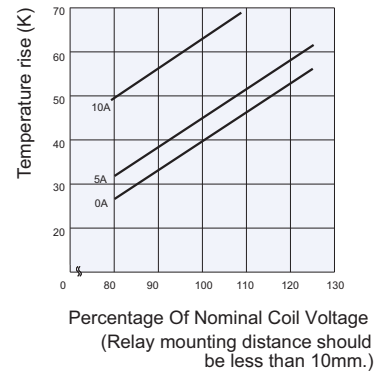
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



### 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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