

# HF5F

# MINIATURE HIGH POWER RELAY



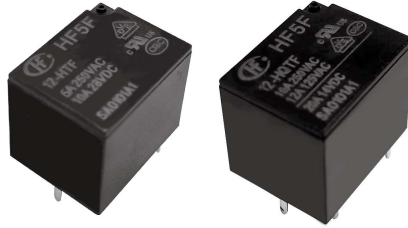
File No.:E133481



File No.:40054965



File No.:21002311603



## Features

- Small volume and low height
- 1 Form A and 1 Form C configurations
- Surge Resistance Satisfies TV-8
- Ambient temperature up to 105°C
- UL insulation system: Class F available
- Outline dimensions: (15.6×12.4×13.6) mm

RoHS compliant

## CONTACT DATA

Contact arrangement	1A	1C	
		NO	NC
Contact resistance	100 mΩ max. (1A 6VDC)		
Contact material	AgSnO <sub>2</sub>		
Contact rating (Res. load)	Standard: 6A 250VAC/ High Load: 10A 250VAC	5A 250VAC	
	10A 28VDC	5A 28VDC	
Max. switching voltage	277VAC/28VDC		
Max. switching current	20A(14VDC)/12A(125VAC)		
Max. continuous current	20A(NO 23°C 1h)		
Mechanical endurance	1×10 <sup>7</sup> OPS		
Electrical endurance	NO:		
	Standard:	6A 250VAC Resistive load 5×10 <sup>4</sup> OPS 10A 28VDC Resistive load 1×10 <sup>5</sup> OPS	
	High Load:	10A 250VAC Resistive load 1×10 <sup>5</sup> OPS 10A 28VDC Resistive load 1×10 <sup>5</sup> OPS	
	NC:	5A 250VAC Resistive load 3×10 <sup>4</sup> OPS 5A 28VDC Resistive load 5×10 <sup>4</sup> OPS	

Notes: 1) The data shown above are initial values.  
2) Maximum switching current and maximum continuous current only meet the high load type, the standard type is 10A.

## CHARACTERISTICS

Insulation resistance	100MΩ(500VDC)	
Dielectric strength	Between coil & contacts	1500VAC 1min
	Between open contacts	600VAC 1min
Operate time(at rated voltage)	10ms max.	
Release time(at rated voltage)	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 105°C	
Termination	PCB	
Unit weight	Approx. 5g	
Construction	Plastic sealed, Flux proofed	

Notes: 1) The data shown above are initial values.  
2) If plastic sealed is used or ambient temperature is higher than 85°C, please contact us.

## COIL

Coil power Approx. 450mW

Notes: 1) The coil holding voltage is the voltage applied to coil 100ms after the rated voltage.

## COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC <sup>1)</sup> max.	Drop-out Voltage VDC min.	Max. Coil Voltage <sup>2)</sup> VDC	Coil Resistance Ω
3	2.25	0.3	3.9	20 ×(1±10%)
5	3.75	0.5	6.5	55 ×(1±10%)
9	6.75	0.9	11.7	180 ×(1±10%)
12	9	1.2	15.6	320 ×(1±10%)
18	13.5	1.8	23.4	720 ×(1±10%)
24	18	2.4	31.2	1280 ×(1±10%)
48	36	4.8	62.4	5120 ×(1±10%)

Notes: 1) The data shown above are initial values.  
2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

## SAFETY APPROVAL RATINGS

UL/CUL	NO	6A 277/250/125VAC Room temp. 10A 277/250/125VAC 105°C(High Load) 12A 125VAC Room temp.(High Load) 10A 28VDC Room temp. 1/2HP 250VAC 85°C 1/4HP 120VAC 85°C TV-5 120VAC 40°C TV-8 120VAC 40°C(High Load 590) 1A, 277VAC, Electronic Ballast Room temp.
	NC	5A 277/250/125VAC Room temp. 5A 28VDC Room temp.
VDE	NO	6A 250/125VAC Room temp. 10A 250/125VAC 85°C(High Load) 10A 28VDC Room temp.
	NC	5A 250/125VAC Room temp. 5A 28VDC Room temp.
CQC	NO	6A 277/250/125VAC Room temp. 10A 277/250/125VAC 105°C(High Load) 10A 28VDC Room temp.
	NC	5A 277/250/125VAC Room temp. 5A 28VDC Room temp.

Notes: The typical loads listed above are only part of the product certification. The detailed test conditions of each load are different, so the electrical durability is different. For more information, please contact us.



HONGFA RELAY

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/IEC 27001 CERTIFIED

2023 Rev. 1.00

## ORDERING INFORMATION

Type	HF5F/	12	-H	S	Q	T	F	(XXX)
Coil voltage	3,5,9,12,18,24,48 VDC							
Contact arrangement	H: 1 Form A Z: 1 Form C							
Construction	S: Plastic sealed NIL: Flux proofed							
Contact rating	Q: High Load NIL: Standard type							
Contact material	T: AgSnO <sub>2</sub>							
Insulation class	F: Class F							
Special code	XXX: Customer special requiremen; Nil: Standard							

Notes: 1) If plastic sealed is used or ambient temperature is higher than 85°C, please contact us.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

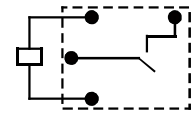
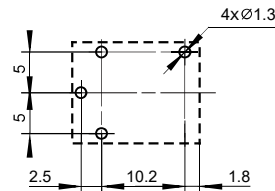
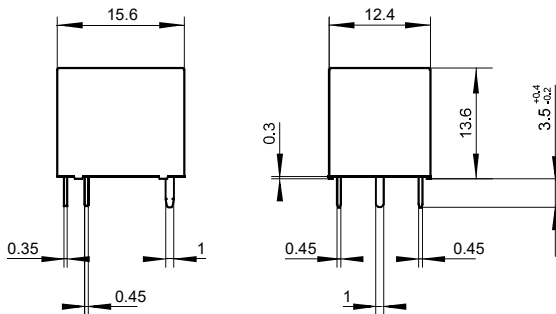
Unit: mm

### Outline Dimensions

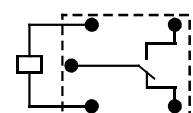
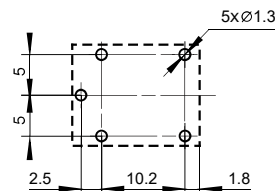
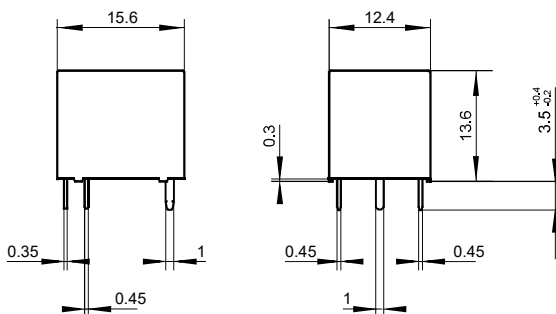
### PCB Layout (Bottom view)

### Wiring Diagram (Bottom view)

#### 1 Form A



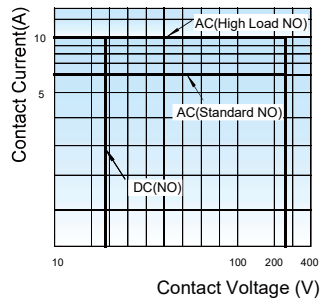
#### 1 Form C



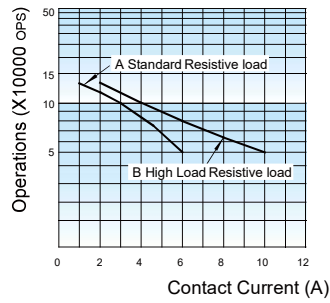
- Notes: 1) The pin dimension of the product outline drawing is the size before tinning (it will become larger after tinning), and the mounting hole size is the recommended design size of the PCB board hole. The specific PCB board hole design size can be mapped and adjusted according to the actual product.
- 2) 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;
- 3) The tolerance without indicating for PCB layout is always  $\pm 0.1$ mm.

## CHARACTERISTIC CURVES

MAX.SWITCHING POWER

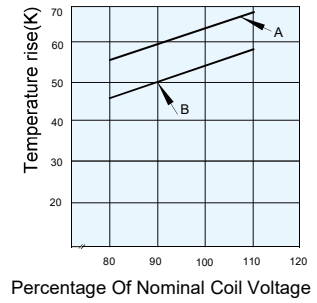


ENDURANCE CURVE



A:NO,250VAC,Resistive load,  
Room temp.,1s on 9s off  
B:NO,250VAC,Resistive load,  
85°C,1s on 9s off

COIL TEMPERATURE RISE



Test conditions:  
A:85°C 10A(High Load)  
B:85°C 6A(Standard)  
Mounting distance:10mm

### Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications 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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