

# HF32F

## SUBMINIATURE INTERMEDIATE POWER RELAY



File No.: E134517



File No.: 40012204



File No.: CQC02001001942



### Features

- 10A switching capability
- 1 Form A and 1 Form C configurations
- Subminiature, standard PCB layout
- Wash tight and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (18.4 x 10.2 x 15.3) mm

### CONTACT DATA

Contact arrangement	1A, 1C		
Contact resistance	100mΩ (at 1A 6VDC)		
Contact material	AgNi, AgCdO		
Contact rating (Res. load)	1A		1C
	Standard	Sensitive	Standard
	H: 5A 250VAC 5A 30VDC 10A 125VAC	HL: 3A 250VAC 3A 30VDC HLQ: 8A 250VAC	3A 250VAC 3A 30VDC
Max. switching voltage	250VAC / 30VDC		
Max. switching current	10A		
Max. switching power	1250VA / 150W		
Mechanical endurance	1 x 10 <sup>5</sup> OPS		
Electrical endurance	1 x 10 <sup>5</sup> OPS		

### COIL

Coil power	Standard: 450mW; Sensitive:200mW
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### COIL DATA

at 23°C

#### Standard type (450mW)

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
3	2.25	0.15	3.9	20 x (1±10%)
5	3.75	0.25	6.5	55 x (1±10%)
6	4.50	0.30	7.8	80 x (1±10%)
9	6.75	0.45	11.7	180 x (1±10%)
12	9.00	0.60	15.6	320 x (1±10%)
18	13.5	0.90	23.4	720 x (1±10%)
24	18.0	1.20	31.2	1280 x (1±10%)
48	36.0	2.40	62.4	5120 x (1±10%)

#### Sensitive type (200mW Only for 1 Form A)

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
3	2.25	0.15	4.5	45 x (1±10%)
5	3.75	0.25	7.5	125 x (1±10%)
6	4.50	0.30	9.0	180 x (1±10%)
9	6.75	0.45	13.5	400 x (1±10%)
12	9.00	0.60	18.0	720 x (1±10%)
18	13.5	0.90	27.0	1600 x (1±10%)
24	18.0	1.20	36.0	2800 x (1±10%)

### CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	2500VAC 1min 4000VAC 1min
	Between open contacts	1000VAC 1min
Operate time (at nomi. volt.)	8ms max.	
Release time (at nomi. volt.)	5ms max.	
Humidity	35% to 95% RH	
Ambient temperature	Standard	-40°C to 70°C
	High capacity	-40°C to 60°C
Shock resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance	10Hz to 55Hz 1.5mm DA	
Termination	PCB	
Unit weight	Approx. 6g	
Construction	Wash tight, Flux proofed	

Notes: 1) The data shown above are initial values.

2) Please find coil temperature curve in the characteristic curves below.



HONGFA RELAY

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

2008 Rev. 1.00

## SAFETY APPROVAL RATINGS

UL&CUL	1 Form A	H type: 5A 250VAC /30VDC at 70°C 10A 125VAC at 70°C 1/10HP 125VAC at 70°C 1/6HP 250VAC at 70°C 10LRA /1.5FLA,120VAC at 70°C
		HL type: 3A 250VAC /30VDC at 70°C 5A 125VAC at 70°C
		H(S)LQ3 type: 8A 250VAC at 70°C
	1 Form C	3A 250VAC/30VDC at 70°C
VDE	1 Form A	H type: 5A 250VAC /30VDC at 70°C
		HL type: 3A 250VAC /30VDC at 70°C
		H(S)LQ3 type: 8A 250VAC at 85°C
	1 Form C	3A 250VAC/30VDC at 70°C

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

## ORDERING INFORMATION

<b>Type</b>	HF32F / 012 -H S L Q 3 (XXX)
<b>Coil voltage</b>	3, 5, 6, 9, 12, 18, 24, 48VDC
<b>Contact arrangement</b>	H: 1 Form A Z: 1 Form C
<b>Construction</b> <sup>1)</sup>	S: Wash tight Nil: Flux proofed
<b>Coil Power</b>	L: Sensitive (Only for 1 Form A) Nil: Standard
<b>Contact Capacity</b>	Q: High Capacity (Only for Sensitive) Nil: Standard
<b>Contact material</b>	3: AgNi Nil: AgCdO
<b>Customer special code</b>	e.g. (220) stands for 4000VAC dielectric strength (Only for 1 Form A)

**Notes:** 1) 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, flux proofed type is preferentially recommended.

# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

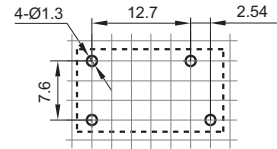
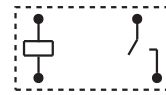
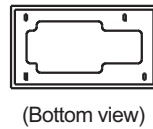
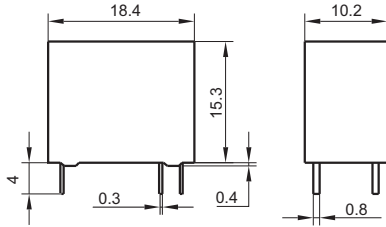
Unit: mm

## Outline Dimensions

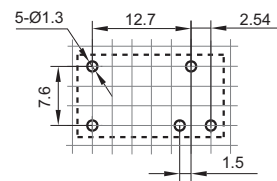
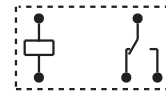
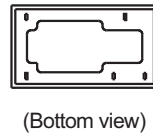
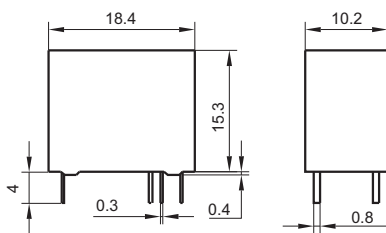
## Wiring Diagram (Bottom view)

## PCB Layout (Bottom view)

### 1 Form A



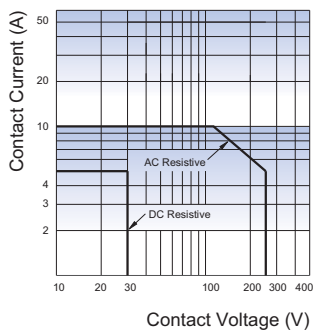
### 1 Form C



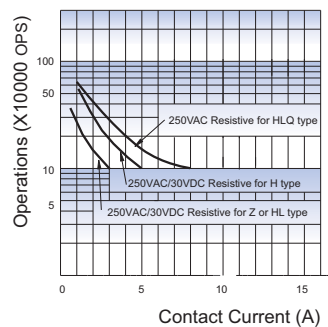
- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$ mm, tolerance should be  $\pm 0.2$ mm; outline dimension  $\leq 5$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 5$ mm, tolerance should be  $\pm 0.4$ mm.  
 2) The tolerance without indicating for PCB layout is always  $\pm 0.1$ mm.  
 3) The width of the gridding is 2.54mm.

# CHARACTERISTIC CURVES

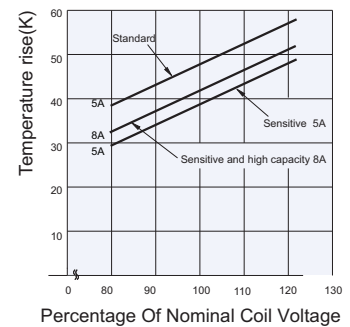
## MAXIMUM SWITCHING POWER



## EDURANCE 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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