

# HFD23

# SUBMINIATURE SIGNAL RELAY



File No.:E133481



File No.:CQC09002035070



### Features

- Max.2A switching capability
- High sensitive: 150mW
- 1 Form C configuration
- Plastic sealed type available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (12.5 x 7.5 x 10.0) mm

### CONTACT DATA

Contact arrangement	1C
Contact resistance	100mΩ (at 0.1A 6VDC)
Contact material	AgNi +Au plated
Contact rating (Res. load)	0.5A 125VAC / 1A 30VDC
Max. switching voltage	125VAC / 60VDC
Max. switching current	2A
Max. switching power	62.5VA / 30W
Min. permissible load	1mA 5V
Mechanical endurance	1 x 10 <sup>7</sup> OPS (300 OPS/min)
Electrical endurance	1 x 10 <sup>5</sup> OPS (30 OPS/min)

### CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	1000VAC 1min
	Between open contacts	400VAC 1min
Operate time (at nomi. volt.)	5ms max.	
Release time (at nomi. volt.)	5ms max.	
Bounce time (at nomi.volt.)	Approx. 5ms	
Temperature rise (at nomi.volt.)	65K max.	
Shock resistance	98m/s <sup>2</sup>	
Vibration resistance	10Hz to 55Hz 3.3mm DA	
Humidity	98% RH, 40°C	
Ambient temperature	-30°C to 70°C	
Unit weight	Approx. 2.2g	
Termination	PCB (DIP)	
Construction	Plastic sealed	

Notes: The data shown above are initial values.

### COIL

Coil power	Sensitive:150mW; Standard: 200mW
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### COIL DATA

at 23°C

#### Standard type (200mW)

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
1.5	1.20	0.15	2.25	11.3 x (1±10%)
3	2.40	0.30	4.5	45 x (1±10%)
5	4.00	0.50	7.5	125 x (1±10%)
6	4.80	0.60	9.0	180 x (1±10%)
9	7.20	0.90	13.5	405 x (1±10%)
12	9.60	1.20	18.0	720 x (1±10%)
24	19.20	2.40	36.0	2880 x (1±15%)

#### Sensitive type (150mW)

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
1.5	1.20	0.15	2.25	15 x (1±10%)
3	2.40	0.30	4.5	60 x (1±10%)
5	4.00	0.50	7.5	167 x (1±10%)
6	4.80	0.60	9.0	240 x (1±10%)
9	7.20	0.90	13.5	540 x (1±10%)
12	9.60	1.20	18.0	960 x (1±10%)
24	19.20	2.40	36.0	3840 x (1±15%)

### SAFETY APPROVAL RATINGS

UL/CUL	1.0A 30VDC 0.3A 60VDC 0.5A 125VAC
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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

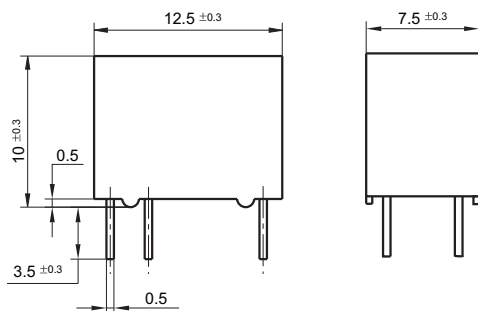
Type	HFD23 / 012 -1Z S (XXX)			
Coil voltage	1.5, 3, 5, 6, 9, 12, 24VDC			
Contact arrangement	1Z: 1 Form C			
Coil power	S: Sensitive type (150mW) P: Standard type (200mW)			
Customer special code				

Notes: 1) If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.

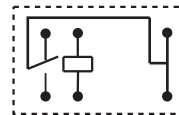
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

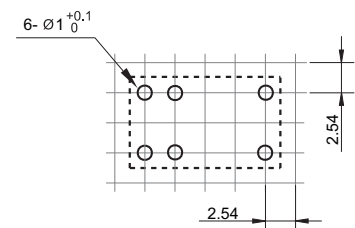
Outline Dimensions



Wiring Diagram  
(Bottom view)



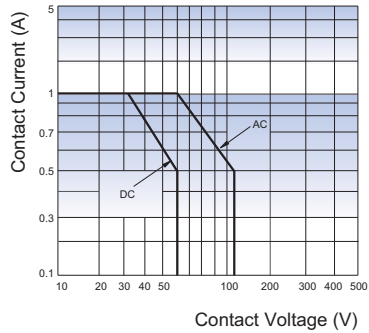
PCB Layout  
(Bottom view)



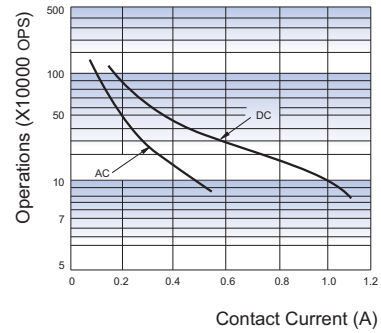
- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$ mm, tolerance should be  $\pm 0.2$ mm; outline dimension  $> 1$ mm and  $\leq 5$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 5$ mm, tolerance should be  $\pm 0.4$ mm.  
 2) The tolerance without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

## CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



ENDURANCE CURVE



### Notice

- 1) To avoid using relays under strong magnetic field which will change the parameters of relays such as pick-up voltage and drop-out voltage.
- 2) The relay may be damaged because of falling or when shocking conditions exceed the requirement.
- 3) Regarding the plastic sealed relay, we should leave it cooling naturally until below 40°C after welding, then clean it and deal with coating, remarkably the temperature of solvents should also be controlled below 40°C. Please avoid cleaning the relay by ultrasonic, avoid using the solvents like gasoline, Freon, and so on, which would affect the configuration of relay or influence the environment.
- 4) About preferable condition of operation, storage and transportation, please refer to "Explanation to terminology and guidelines of relay".

### 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.