HFD23 SUBMINIATURE SIGNAL RELAY

c UL us
File No.:E133481

CQC
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 max. (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. applicable load 1)	1mA 5V
Mechanical endurance	1 x 10^7OPS
Electrical endurance	1 x 10^5OPS(1A 30VDC)

Notes: 1) Min. applicable load is reference value. Please perform the confirmation test with the actual load before production since reference value may change according to switching frequencies, environmental conditions and expected contact resistance and reliability.

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.
Temperature rise (at nomi.volt.)		65K max.
Vibration resistance		10Hz to 55Hz 3.3mm DA
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Humidity		5% to 85% RH
Ambient temperature		-30°C to 70°C
Unit weight		Approx. 2.2g
Termination		PCB (DIP)
Construction		Plastic sealed

Notes: 1) The data shown above are initial values.
2) UL insulation system: Class A

COIL

Coil power	Sensitive: Approx. 150mW; Standard: Approx. 200mW

COIL DATA at 23°C

Standard type

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	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

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	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%)

Notes: 1) When user's requirements can't be found in the above table, special order allowed.
2) In case 5V of transistor drive circuit, it is recommended to use 4.5V type relay, and 3V to use 2.4V type relay.

SAFETY APPROVAL RATINGS

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

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

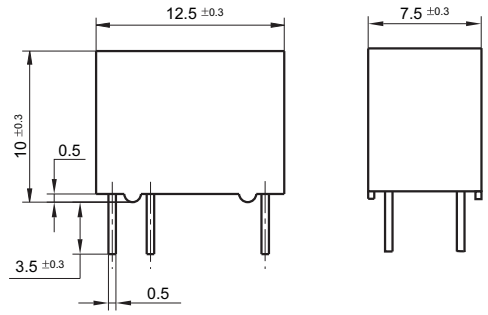
ORDERING INFORMATION

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

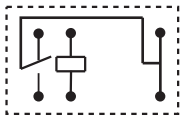
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

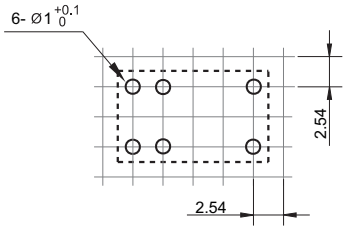
Outline Dimensions



Wiring Diagram
(Bottom view)



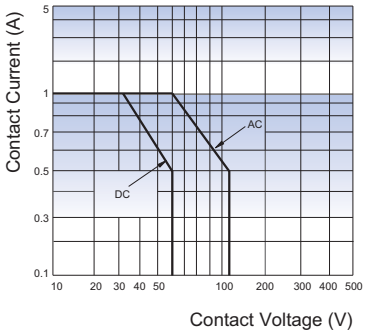
PCB Layout
(Bottom view)



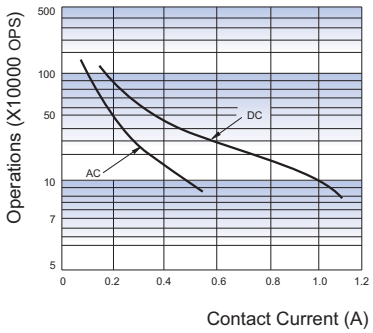
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.
3) The 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 untill 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 guidetines 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.