HF180F POWER RELAY

File No.:E133481

File No.:R 50430279

File No.:CQC19002213614

Features

- Latching relay，Zero consumption at standby
- 2 Form A+ 2 Form B contact arrangement
- General for ac/dc load
- Supports multiple voltage energize,quick switch between contact sets
- Contact gap⩾3mm
- Creepage ⩾4mm，Clearance⩾3mm(between contact set)

CONTACT DATA

Contact arrangement	2A＋2B
Contact resistance(initial)[1)]	15mΩ max. (6VDC 20A)
Contact materia	$AgSnO_2$
Contact rating (Res. load)	25A 410VDC/290VAC
Max. switching voltage	410VDC/290VAC
Max. switching current	25A
Max. switching power	10250W/7250VA
Min. Applicable Load	6V 1A
Mechanical endurance	1 x 10^5ops
Electrical endurance	1 x 10^4ops (2H/2D：25A 410VDC/290VAC, Resistive load, 85˚C, 5s on 5 off)

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

CHARACTERISTICS

Insulation resistance		1000MΩ (500VDC)
Dielectric strength	Between open contacts	2500VAC 1min
	Between coil & contacts	5000VAC 1min
	Between contact sets	2500VAC 1min
Surge voltage	Between coil & contacts	10kV(1.2 / 50μs)
	Between open contacts	4kV(1.2 / 50μs)
Operate time (at rated. volt.)		20ms max. (8ms max., at 6 times volt)
Release time (at rated. volt.)		20ms max. (8ms max., at 6 times volt)
Vibration resistance		10Hz to 55Hz 3mm DA
Shock resistance	Functional	196m/s²
	Destructive	980m/s²
Humidity		5% to 85%RH
Ambient temperature		-40˚C to 85˚C

Notes: The data shown above are initial values.

COIL

Coil power	Single coil latching：Approx. 2.0W
	Double coils latching：Approx. 4.0W

COIL DATA 23˚C

Single coil latching

Nominal Voltage VDC	Pick-up Voltage VDC max[1)]	Drop-out Voltage VDC min[1)]	Pulse Duration ms	Max. Voltage VDC[2)]	Coil Resistance Ω
5	4.0	4.0	100	30	12.5 x (1±10%)
9	7.2	7.2	100	54	40.5 x (1±10%)
12	9.6	9.6	100	72	72.0 x (1±10%)
24	19.2	19.2	100	144	288 x (1±10%)

Double coils latching

Nominal Voltage VDC	Pick-up Voltage VDC max[1)]	Drop-out Voltage VDC min[1)]	Pulse Duration ms	Max. Voltage VDC[2)]	Coil Resistance Ω
5	4.0	4.0	100	30	6.25 x(1±10%)
9	7.2	7.2	100	54	20.25 x (1±10%)
12	9.6	9.6	100	72	36.0 x (1±10%)
24	19.2	19.2	100	144	144 x (1±10%)

Notes: 1) The data shown above are initial values.
2) *Maximun voltage refers to the maximun voltage which relay coil could endure in a short period of time(⩽50s).

SAFETY APPROVAL RATINGS

CQC	25A 410VDC/290VAC Resistive at 85˚C
UL/CUL	25A 410VDC/290VAC Resistive at 85˚C
TÜV (IEC 62368)	25A 410VDC/290VAC Resistive at 85˚C

Notes: 1) All values unspecified are at room temperature.
2) Only typical loads are listed above. Other load specifications can be available upon request.

ORDERING INFORMATION

	HF180F/	12	-2HD	L2	T	F	(XXX)
Type							
Coil voltage	5, 9, 12, 24VDC						
Contact arrangement	**2HD: 2** Form A+ **2** Form B						
Construction(1)(2)	**Nil:** Unplastic sealed						
Sort	**L1:** Single coil latching **L2:** Double coils latching						
Contact material	**T:** $AgSnO_2$						
Insulation standard	**F:** Class F						
Special code 3)	**XXX:** Customer special requirement			**Nil:** Standard			

Notes: 1)Please avoid using the relay in an environment containing organic silicon,otherwise the entry of organic silicon into the relay may acceleration contact failure.If there are harmful substances and elements such as water vapor,H_2S, SO_2, NO_2,Cl,P,etc.In the use of environmental gases, it may lead to increased contact resistance and poor contact during the use of relays.In the above situations,please control the materials or use plastic sealed type and arrange relevant tests to confirm.

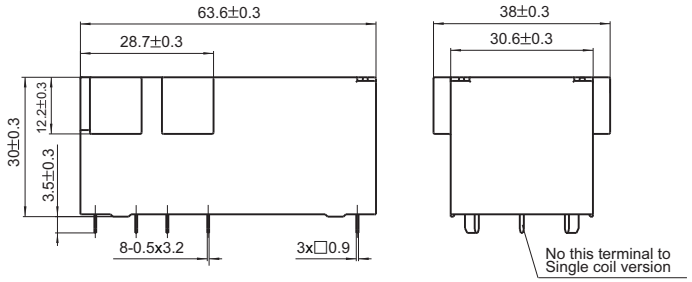
2)After the flux proofed relays are mounted on the PCB and soldered, they cannot be cleaned or surface treated.

3)The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

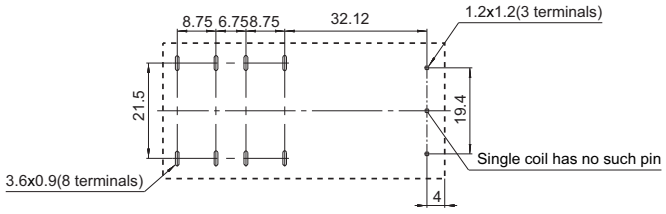
Unit: mm

Outline Dimensions



PCB Layout

(Bottom view)

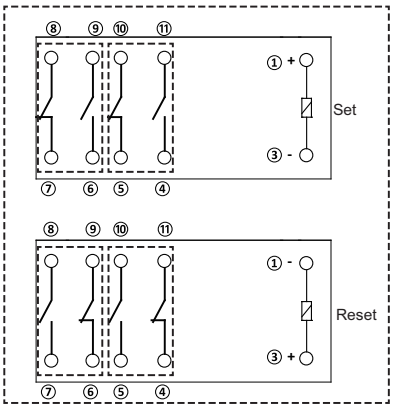


OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

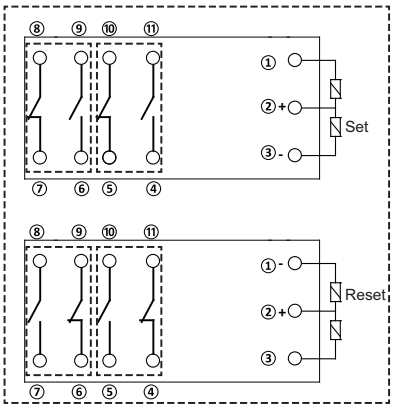
Unit: mm

Wiring Diagram (Bottom view)

Single coil latching



Double coils latching



Remark: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 ≤1mm, tolerance should be ±0.2mm; outline dimension ＞1mmand ≤5mm, tolerance should be ±0.3mm; outline dimension ＞5mm, tolerance should be ±0.4mm.

3) The tolerance without indicating for PCB layout is always ±0.1mm.

Notice:

1. Relay is on the “reset” status when being released from stock, with the consideration of shock risen from transit and relay mounting, relay would be changed to “set” or "reset" status, therefore, when application (connecting the power supply), please reset the relay to “set” or “reset” status on request.
2. In order to maintain “set” or “reset” status, energized voltage to coil should reach the rated voltage, impulse width should be 5 times more than “set” or “reset” time. Do not energize voltage to “set” coil and “reset” coil simultaneously. And also long energized time (more than 1 min) should be avoided.
3. Keep the product away from strong magnetic field during transportation, storage and application, to avoid change of set/reset voltage.
4. Relay contains a magnet. Install offset or with 30 mm spacing to avoid interference.