HF33F-L MINIATURE HIGH POWER RELAY

File No.：E133481

File No.：40055285

File No.：CQC21002315240

Features

- Magnetic latching relay
- Low coil power
  1 coil magnetic latching relay: Approx. 0.25W
  2 coil magnetic latching relay: Approx. 0.5W
- High contact switching capacity: 16A 250VAC
- 1 Form A configurations

RoHS compliant

CONTACT DATA

Contact arrangement	1A
Contact resistance[1]	100mΩ max. (at 1A 6VDC)
Contact material	$AgSnO_2$
Contact rating(Res.)	16A 250VAC
Max.swtiching voltage	277VAC
Max.switching current	16A
Max.switching power	4432VA
Mechanical endurance	1×10^6 OPS
Electrical endurance[2]	1×10^5 OPS (16A 250VAC,85˚C, 1s on 9s off)

Notes: 1) The data shown above are initial values.
2) For plastic sealed type, the venting-hole should be excised in test.

CHARACTERISTICS

Insulation resistance		1000MΩ(500VDC)
Dielectric strength	Between open contacts	1000VAC 1min
	Between coil & contacts	2500VAC 1min
Operate time (at nomi. volt.)		10ms max.
Release time (at nomi. volt.)		10ms max.
Shock resistance	Functional	$98m/s^2$
	Destructive	$980m/s^2$
Vibration resistance		10Hz to 55Hz 1.5mm DA
Humidity		5% to 85%RH
Ambient temperature		-40˚C to 85˚C
Termination		PCB
Unit weight		Approx. 7g
Construction		Plastic sealed Flux proofed

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

COIL

Coil power	1 coil latching	Approx. 250mW
	2 coil latching	Approx. 500mW

COIL DATA 23˚C

1 coil latching(250mW)

Nominal Voltage VDC	Pick-up Voltage[1] VDC max.	Drop-out Voltage VDC min	Pulse Width ms max.	Coil Resistance Ω
3	2.25	2.25	50	36 x (1±10%)
5	3.75	3.75	50	100 x (1±10%)
6	4.5	4.5	50	144 x (1±10%)
9	6.75	6.75	50	324 x (1±10%)
12	9.00	9.00	50	576 x (1±10%)
18	13.5	13.5	50	1296 x (1±10%)
24	18.0	18.0	50	2304 x (1±10%)
48	36.0	36.0	50	9216 x (1±10%)

2 coil latching(500mW)

Nominal Voltage VDC	Pick-up Voltage[1] VDC max.	Drop-out Voltage VDC min	Pulse Width ms max.	Coil Resistance Ω
3	2.25	2.25	50	18 x (1±10%)
5	3.75	3.75	50	50 x (1±10%)
6	4.5	4.5	50	72 x (1±10%)
9	6.75	6.75	50	162 x (1±10%)
12	9.00	9.00	50	288 x (1±10%)
18	13.5	13.5	50	648 x (1±10%)
24	18.0	18.0	50	1152 x (1±10%)
48	36.0	36.0	50	4608 x (1±10%)

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

SAFETY APPROVAL RATINGS

UL/CUL	16A 250VAC/277VAC,85˚C TV-8 125VAC 40˚C 1/2HP 250VAC 85˚C 1/3HP 120VAC 85˚C 3A, 277 Vac, Electronic Ballast 85˚C 5A, 120 Vac, Electronic Ballast 85˚C 8A,120VAC, Tungsten 40˚C
CQC	16A,250VAC/277VAC, 85˚C
VDE	16A,250VAC/277VAC, 85˚C

ORDERING INFORMATION

	HF33F-L/	12	-H	L1	T	F	（XXX）
Type							
Coil voltage	3, 5, 6, 9, 12,18, 24, 48VDC						
Contact arrangement	**1H:**1 Form A						
Sort	**L1:** 1 coil latching **L2:** 2 coil latching						
Contact material	**T:** $AgSnO_2$						
Insulation class	**F:** Class F						
Special code	**XXX:** Customer special requiremen； **Nil:** Standard						

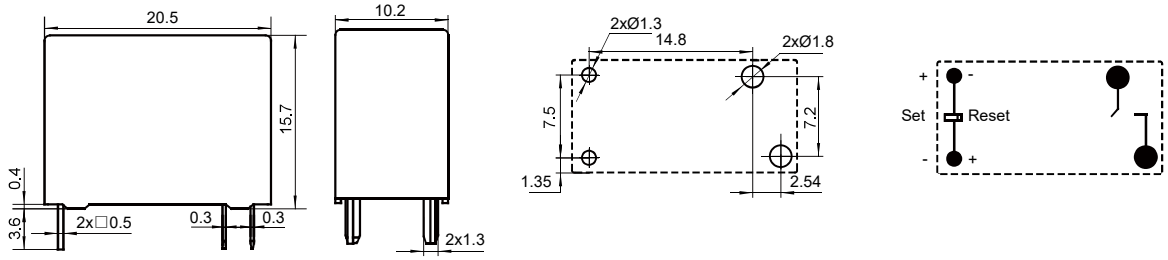
Notes: 1) We recommend flux proofed types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust, etc.).;
We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust, etc);
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB;
3) The customer special requirement express as special code after evaluating by Hongfa;
4) If you need to select a product with Plastic sealed specifications , please contact Hongfa Technology.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

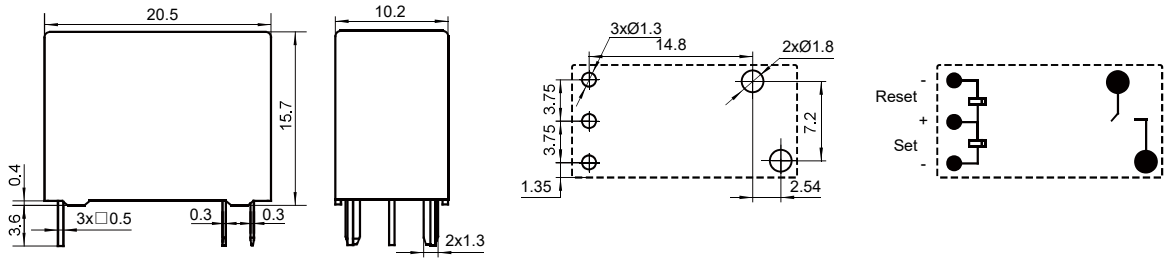
Unit: mm

Outline Dimensions | PCB Layout (Bottom view) | Wiring Diagram (Bottom view)

1 coil latching



2 coil latching



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 ≤1mm, tolerance should be ±0.2mm;
outline dimension＞1mm and ≤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.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

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 “seset” 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. The recommended soldering temperature range is 240℃~260℃ with the duration of 2-5s for PCB termination. It is not suggested to apply reflow soldering method, if it is required indeed, please contact with our technicians. t is general required that the wave soldering temperature at 250°C shall not more than 2s.the below chart is the wave soldering temperature distribution chart we recommended for your reference.
5. To maintain the initial performance parameters of the relay, please be careful not to drop the product.

Wave soldering temperature distribution chart