HF186F MINIATURE HIGH POWER RELAY

File No.: E133481

File No.: R 50476790

File No.: CQC20002260253

Features

- 55A 277VAC loading current capability
- 3.0 mm contact gap
- Low coil holding voltage contributes to saving energy of equipment.
- 10kV surge voltage(Between coil and contact)
- UL insulation system: Class F
- outline dimensions:（30×20×31）mm

RoHS compliant

CONTACT DATA

Contact arrangement	1A
Contact resistance	10mΩ max. (20 A 6VDC)
Contact material	$AgSnO_2$
Contact rating (Res. load)	Making 20A Loading 55A, Breaking 20A 277VAC
Max.switching voltage	600VAC
Max.switching current	50A
Max.continuous current	66A at 85˚C 55A at 105˚C
Max.switching power	13850VAC
Mechanical endurance	1 x 10^6OPS
Electrical endurance	⩾5×10^4 OPS (105˚C，1s on 9s off, Making 20 A Loading 55 A breaking 20A, 277VAC, Resistive load) ⩾1×10^4 OPS （85˚C，1s on 9s off，50A 277VAC, Resistive load)

Notes: The data shown above are initial values.

COIL

Coil power	Approx. 2.5W
Holding voltage	40% to 70%U_N (at 23˚C) 45% to 55%U_N (at 105˚C)

Notes: 1) The coil holding voltage is the voltage applied to coil 100ms after the rated voltage.
2）To avoid overheating and burning,the coil can not be consistently applied to with voltage larger than maximum holding voltage.

COIL DATA 23˚C

Nominal Voltage VDC	Pick-up Voltage VDC max(1)	Drop-out Voltage VDC min(1)	Max. Voltage VDC(2)	Coil Resistance Ω
6	4.2	0.3	6.6	14.4 x (1±10%)
9	6.3	0.45	9.9	32.4 x (1±10%)
12	8.4	0.6	13.2	57.6 x (1±10%)
24	16.8	1.2	26.4	230.4 x (1±10%)
48	33.6	2.4	52.8	921.6 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.

CHARACTERISTICS

Insulation resistance		1000MΩ (500VDC)
Dielectric strength	Between open contacts	2500VAC 1min
	Between coil & contacts	5000VAC 1min
Surge voltage	Between coil & contacts	10kV(1.2 / 50μs)
Operate time (at rated. volt.)		20ms max
Release time (at rated. volt.)		10ms max
Coil temperature rise		50K max (Contact load current 55A, Applied voltage of coil 100% rated voltage for 100ms holding voltage of coil 50% rated voltage,at 105˚C)
Shock resistance	Functional	196m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 1.5mm DA
Humidity		5% to 85%RH(Coil applied holding voltage)
Ambient temperature		-40˚C to 105˚C
Termination		PCB
Unit weight		Approx. 55g
Construction		Flux proofed

Notes: The data shown above are initial values.

SAFETY APPROVAL RATINGS

CQC UL/CUL TÜV	Making 20A,loading 66 A breaking 20 A, 600 VAC ,85˚C Making 20A,loading 55 A breaking 20 A, 277 VAC 105˚C 50 A,277 VAC, 85˚C Making 20A,loading 60 A breaking 20 A, 277 VAC ,85˚C
TÜV	40A 60VDC 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

	HF186F/	12	-H	T	F	(XXX)
Type						
Coil voltage	6, 9, 12, 24,48 VDC					
Contact arrangement	**1H: 1** Form A					
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,dust,etc.,as well as unknown harmful substances and elements,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 that produce harmful substances and elements or use plastic sealed type,and arrange relevant tests to confirm that it meet the requirements for actual use.

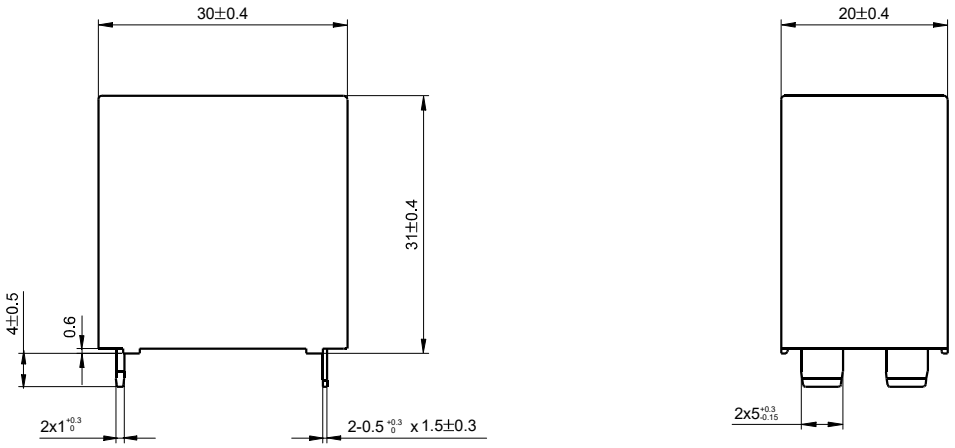
2) Water cleaning or surface process is not suggested after the fiux-proofed relays are assembled on PCB.

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

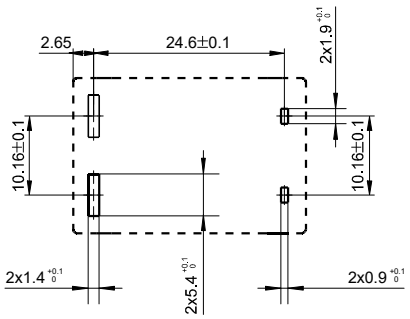
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions



PCB Layout (Bottom view)



OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Wiring Diagram (Bottom view)

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.