HF165FD-50 MINIATURE HIGH POWER RELAY

File No.: E134517

File No.: R 50526316

File No.: CQC 15002130956

Features

- 50A switching capability
- 4kV dielectric strength (between coil and contacts)
- Plastic sealed and flux proofed types available
- UL insulation system: Class F
- Outline Dimensions: (32.2×27.5×20.4)mm

RoHS compliant

CONTACT DATA

Contact arrangement	1A	1C	
Contact voltage drop[1)]	200mV max.(20A 6VDC)		
Contact material	$AgSnO_2$		
Contact rating(Res.load)	50A 277VAC	NO: 50A 277VAC	NC:Making10A, Loading 50A, Breaking10A, 277VAC
Max. Switching voltage	277VAC		
Max. Switching current	50A	50A	50A
Max.continuous current	50A	NO: 50A	NC: 50A
Max. Switching power	13850VA	13850VA	13850VA
Mechanical endurance	1×10^6OPS		
Electrical endurance[2)]	1000OPS(NO:50A 277VAC, Resistive load,65℃,1s on 9s off) 1×10^4OPS(NO:40A 277VAC, Resistive load,85℃,1s on 9s off) 3×10^4OPS(NC:Making 10A,Loading 50A,Breaking10A, 277VAC, Resistive load,65℃,1s on 9s off)		

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

CHARACTERISTICS

nsulation resistance		1000 MΩ (500VDC)
Dielectric strength	Between open contacts	1500VAC 1min
	Between coil & contacts	4000VAC 1min
Surge voltage		6kV(1.2/50μs)
Operate time (at rated. volt.)		15ms max.
Release time (at rated. volt.)		10ms max.
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 1.5mm DA
Humidity		5% to 85%RH
Ambient temperature		-40℃ to 105℃
Termination		PCB
Unit weight		Approx.36g
Construction		Flux proofed,Plastic sealed

Notes: The data shown above are initial values.

COIL

Coil power	Approx. 1.2W

COIL DATA 23℃

Nominal Voltage VDC	Pick-up Voltage VDC[1)] max.	Drop-out Voltage VDC[1)] min.	Max. Voltage VDC[2)]	Coil Resistance Ω
5	3.75	0.5	6.5	20.8×(1±10%)
6	4.50	0.6	7.8	30×(1±10%)
9	6.75	0.9	11.7	67.5×(1±10%)
12	9.00	1.2	15.6	120×(1±10%)
15	11.25	1.5	19.5	187.5×(1±10%)
18	13.5	1.8	23.4	270×(1±10%)
24	18.00	2.4	31.2	480×(1±10%)
48[3)]	36.00	4.8	62.4	1920×(1±10%)

Notes: 1)The data shown above are initial values;
2)Maximum voltage is refers to the relay coil in a short period of time can bear the biggest voltage values;
3)For products with rated voltage ≥ 48V, measures should be taken to prevent coil overvoltage in order to protect coil in test and application (eg. Connect diodes in parallel).

SAFETY APPROVAL RATINGS

UL/CUL	NO	50A 277VAC 65℃ 40A 277VAC 85℃
	NC	Making 10A,loading 50A,breaking 10A, 277VAC 65℃
TUV	NO	50A 277VAC 65℃ 40A 277VAC 85℃
	NC	Making 10A,loading 50A,breaking 10A, 277VAC 65℃

Notes: 1)All values unspecified are at room temperature;
2)Only some typical rating are listed above.If more details are required,please contact us.

ORDERING INFORMATION

	HF165FD-50/	12	-H	S	T	F	V	（XXX）
Type								
Coil voltage	5,6,9,12,15,18,24,48VDC							
Contact arrangement	**H:** 1 Form A **Z:** 1 Form C							
Construction	**S:** Plastic sealed Nil**:** Flux proofed							
Contact material	**T:** $AgSnO_2$							
Insulation standard	**F:** Class F							
Dielectric strength standard	**V:** High Dielectric strength							
Special code	**XXX:** Customer special requirement **Nil:** Standard type							

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.

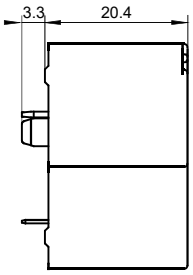
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

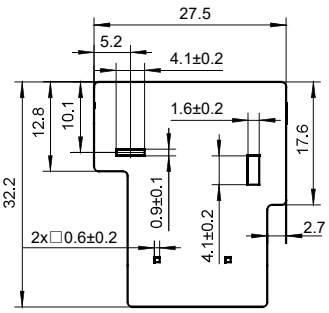
Unit: mm

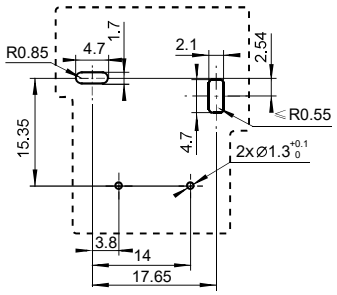
Outline Dimensions

PCB Layout
(Bottom view)

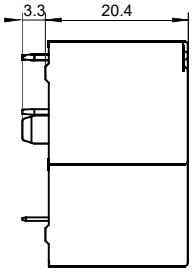
HF165FD-50/□□-H□□□□

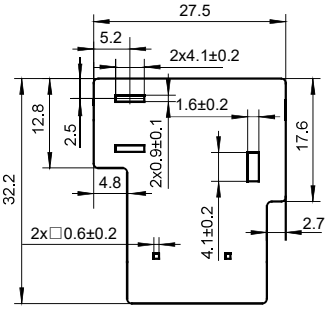


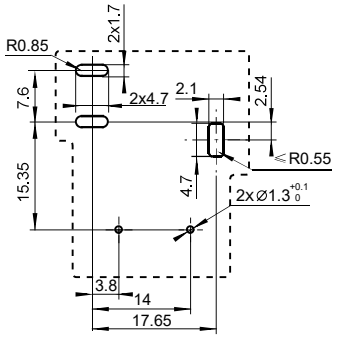




HF165FD-50/□□-Z□□□□







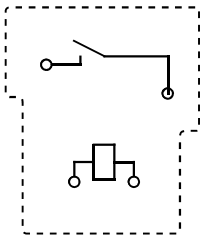
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

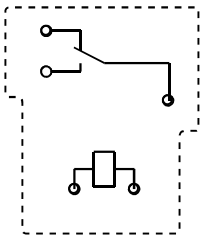
Wiring Diagram

(Bottom view)

HF165FD-50/□□-H□□□□



HF165FD-50/□□-Z□□□□



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 >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.