HF165FD   MINIATURE HIGH POWER RELAY

Features

- 30Aswitching capability
- Breakdown voltage (between contact and coil): 4kV
- Creepage distance: 5.5mm(high voltage)
- Plastic sealed and flux proofed types available
- Product in accordance to IEC 60335-1 available
- UL insulation system: Class F

CONTACT DATA

Contact arrangement	1A	1B	1C	
Contact resistance1)	100mΩ max. (at 1A 6VDC)			
Contact material	AgSnO₂			
Contact rating (Res. load)	30A 277VAC	15A 277VAC	20A 277VAC	10A 277VAC
Max. switching voltage	277VAC			
Max. switching current	30A	30A	30A	15A
Max. switching power	8310VA	8310VA	8310VA	4155VA
Mechanical endurance	1×10^7 OPS			
Electrical endurance2)	1×10^5 OPS (NO: 30A 277VAC, Resistive load, Room temp., 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

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between open contacts	1500VAC 1min
	Between coil & contacts	2500VAC 1min(Standard)
		4000VAC 1min(V Type)
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托 to 85托
Termination		PCB
Unit weight		Approx. 25g
Construction		Plastic sealed Flux proofed

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

COIL

Coil power	Approx. 900mw

COIL DATA   at 23℃

Nominal Voltage VDC	Pick-up Voltage VDC max1)	Drop-out Voltage VDC min1)	Max. Voltage VDC2)	Coil Resistance Ω
5	3.75	0.5	6.5	27 x (1±10%)
6	4.50	0.6	7.8	40 x (1±10%)
9	6.75	0.9	11.7	97 x (1±10%)
12	9.00	1.2	15.6	155 x (1±10%)
15	11.25	1.5	19.5	256 x (1±10%)
18	13.50	1.8	23.4	380 x (1±10%)
24	18.00	2.4	31.2	660 x (1±10%)
48[3]	36.00	4.8	62.4	2560 x (1±10%)
70[3]	52.50	7.0	91.0	5500 x (1±10%)
110[3]	82.50	11.0	143.0	13450 x (1±10%)

Notes: 1) The data shown above are initial values.
2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.
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	30A 277VAC at 85托
		20A 277VAC at 105托
		2HP 240VAC/1HP 120VAC at 40托
		96LRA 30FLA 277VAC at 40托
		TV-8 125VAC at 40托
	NC	30A 277VAC at 40托
		20A 277VAC at 85托
		15A 277VAC at 40托
VDE	NO	30A 250VAC at 60托
		20A 250VAC at 85托
	NC	15A 250VAC at 85托
	CO	20A/10A 250VAC at 85托

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

H F 1 6 5 F D / 1 2   -H   Y1   s   T   F   V   (XXX)

Type	
coil Voltage	5, 6, 9, 12, 15, 18, 24, 48, 70, 110
contact arrangement	H: 1 Form A D: 1 Form B Z: 1 Form C
Termination	Y1: without pin No.6 Y2: with pin No.6
construction [1]	S: plastic sealed Nil: Flux proofed
contact material	T: Agsno2
Insulation standard	F: Class F
Dielectric strength standard	Nil: standard product(2500VAC Between coil & contacts) V : High Dielectric strength(only for Y1 Termination) (4000VAC Between coil & contacts)
Special code[2]	xxx: Customer special requirement Nil: standard

Notes: 1) we recommend flux proofed types for a clean environment (free from contaminations like H2s, so2, No2, dust, etc.).
we suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H2s, so2, No2, dust, etc.).
2) The customer special requirement express as special code after evaluating by Hongfa. e.g.(335) stands for product in accordance to IEC 60335-1 (GwT).

OUTLINE DIMENSIONS, WIRING DIAGRAM AND Pc BOARD LAYOUT   Unit: mm
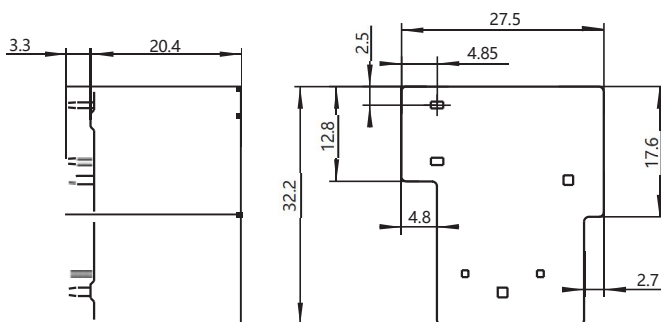
outline Dimensions   pCB Layout (Bottom view)
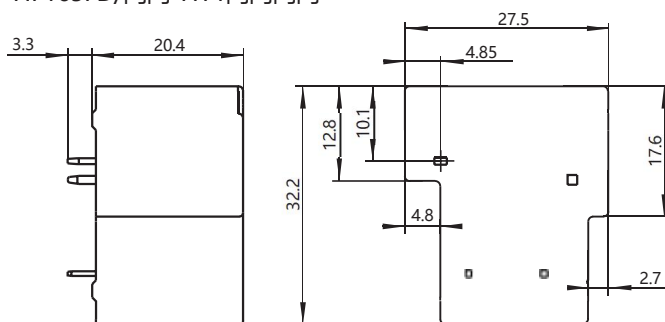
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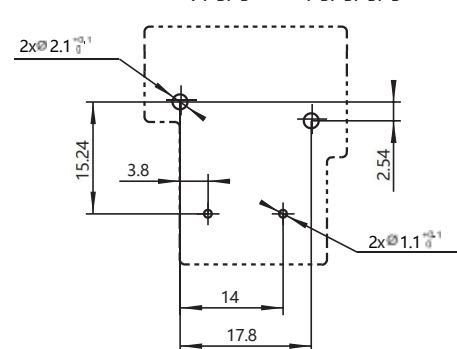
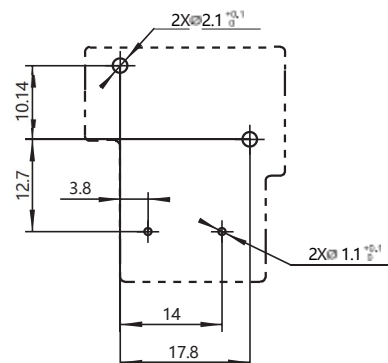HF165FD/闪闪-HY1闪闪闪闪
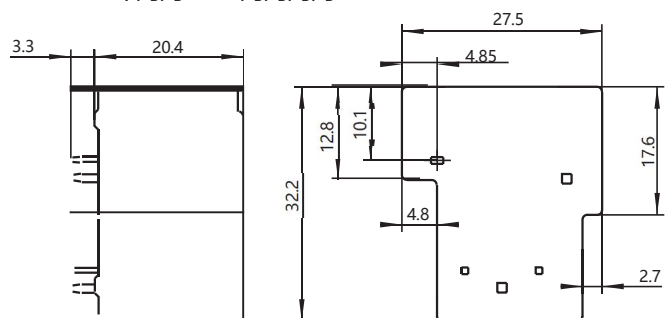
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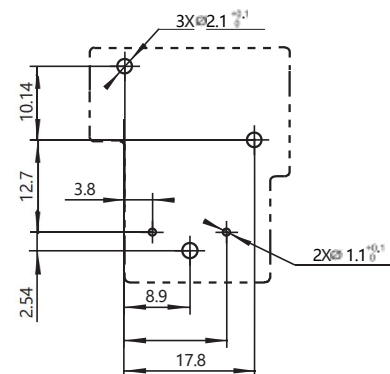
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outline Dimensions
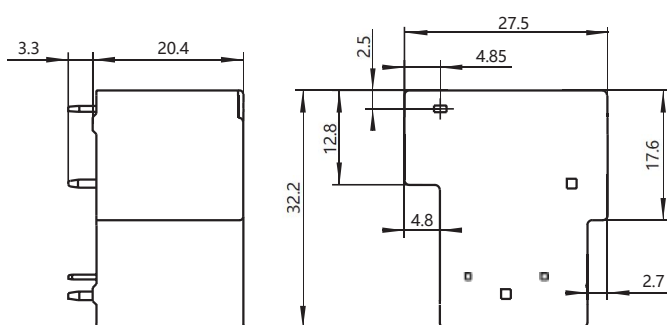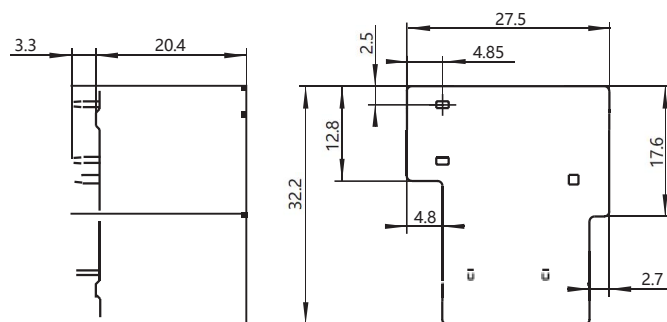
PCB Layout (Bottom view)

HF165FD/闪闪-DY1闪闪闪闪

HF165FD/闪闪-DY1闪闪闪闪

HF165FD/闪闪-DY2闪闪闪闪
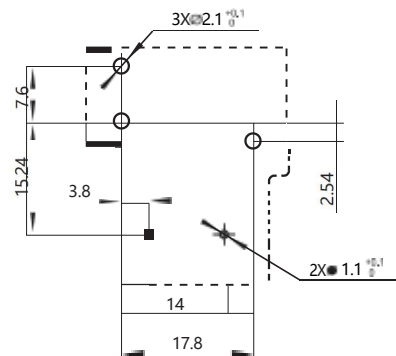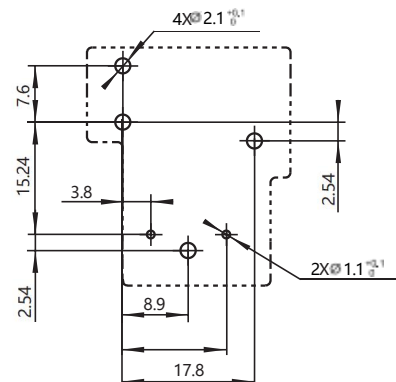
HF165FD/闪闪-DY2闪闪闪闪

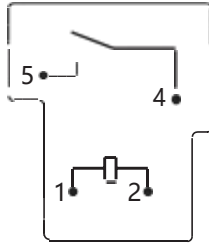HF165FD/闪闪-ZY1闪闪闪闪

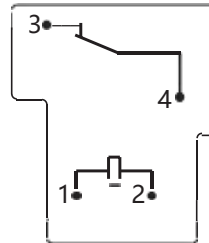HF165FD/闪闪-ZY1闪闪闪闪

HF165FD/闪闪-ZY2闪闪闪闪

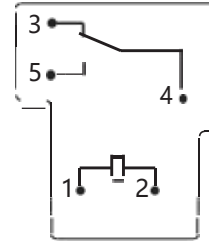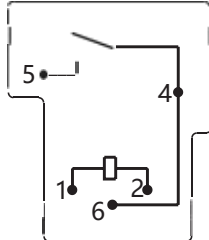HF165FD/闪闪-ZY2闪闪闪闪

Wiring Diagram (Bottom view)

HF165FD/闪闪-HY1闪闪闪闪
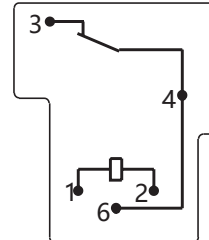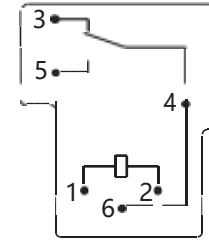
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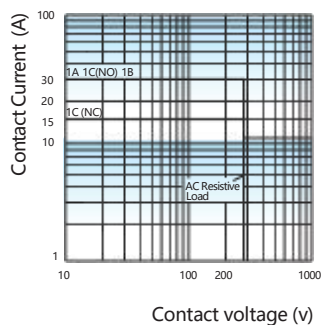
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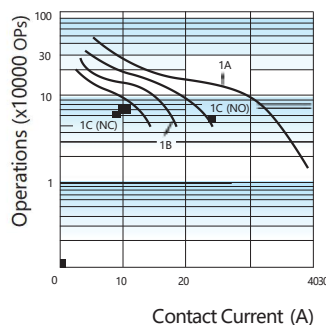HF165FD/闪闪-DY2闪闪闪闪

HF165FD/闪闪-ZY2闪闪闪闪

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 2.5mm.
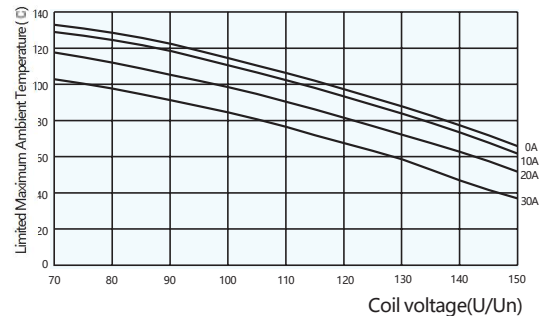
CHARACTERISTIC CURVES

MAxIMUM sWITCHING POWER

Contact Current (A)

1A 1C(NO) 1B

1C (NC)

AC Resistive Load

Contact voltage (v)

ENDURANCE CURvE

Operations (x10000 OPs)

1A

1C (NO)

1C (NC)

1B

Contact Current (A)

Test conditions:
Flux proofed, Room temp.,
1s on 9s off.

COIL OPERATING RANGE (AC)

Limited Maximum Ambient Temperature (℃)

0A
10A
20A
30A

Coil voltage(U/Un)

Disclaimer