HFE15

MINIATURE HIGH POWER LATCHING RELAY

c **UL** US

File No.: E134517

VDE

File No.: 40045248

Features

● Laching relay
● 20A switching capacity
● Inrush current Capacitor 430A/1.5ms

CONTACT DATA

Contact arrangement	1A, 1B, 1C
Contact resistance [1]	20mΩ max.(at 1A 24VDC)
Contact material	AgSnO²
Contact rating	1A,1B:20A 250VAC, 1x10⁵OPS(Resistive) 25A 250VAC,5x10⁴OPS(Resistive) 10A 250VAC C=140uF, 3x10⁴OPS(Capacitive) 10A 250VAC cosΦ=0.4, 3x10⁴OPS(Inductive) 20A 30VDC,3x10⁴OPS(Resistive) 15A 45VDC, 6,000OPS(Resistive) 16A 250VAC,1x10⁵OPS(AC-1) 12.5A 400VAC,1x10⁵OPS(AC-1) 10A 277VAC, 6,000OPS (Electronic ballast) 1Z:20A 250VAC,5x10⁴OPS(Resistive)
Max. switching voltage	400VAC
Max. switching current	25A
Max. switching power	5000VA
Mechanical endurance	1 x 10⁶OPS
Electrical endurance	See rated load

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

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1 min
	Between open contacts	1000VAC 1 min
Creepage distance		8mm
Impulse voltage		12KV min.
Operate time (at nomi. volt.)		15ms max.
Release time (at nomi. volt.)		15ms max.
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz ~ 55Hz 1.5mm DA
Humidity		5% ~ 85% RH
Ambient temperature		-25℃ ~ 70℃
Termination		PCB
Unit weight		Approx.23g

Notes: The data shown above are initial values.

COIL

Coil power	Single coil latching: Approx. 0.7W Double coil latching: Approx. 1.5W

COIL DATA

at 23°C

Single coil latching

Nominal Voltage VDC	Set / Reset Voltage VDC [1] [2] max.	Pulse Duration ms min.	Coil Resistance x (1±10%)Ω
3	≤2.4	≥50	12.5
5	≤4.0	≥50	34.5
6	≤4.8	≥50	50
9	≤7.2	≥50	112.5
12	≤9.6	≥50	200
24	≤19.2	≥50	800
32	≤25.6	≥50	1460
48	≤38.4	≥50	3200

Double coils latching

Nominal Voltage VDC	Set / Reset Voltage VDC [1] [2] max.	Pulse Duration ms min.	Coil Resistance x (1±10%)Ω
3	≤2.4	≥50	2 x 6
5	≤4.0	≥50	2 x 17.5
6	≤4.8	≥50	2 x 25
9	≤7.2	≥50	2 x 54
12	≤9.6	≥50	2 x 100
24	≤19.2	≥50	2 x 400
32	≤25.6	≥50	2 x 680
48	≤38.4	≥50	2 x 1600

Notes:1) The data shown above are initial values.
2) The above set voltage, reset voltage are the test value for relay without load. Please use 1~1.5 times of rated voltage to drive the relay for your application.

SAFETY APPROVAL RATINGS

VDE	1H,1D	Resistive: 20A 250VAC Incandescent lamp: 2500W 250VAC
UL	1Z	Resistive: 20A 250VAC
	1H,1D	Resistive: 20A 250VAC Resistive: 15A 45VDC Electronic ballast: 10A 277VAC

Notes: Only typical loads are iisted above.other load specifications can be available upon request.

HF HONGFA RELAY

ISO9001, ISO/TS16949 , ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

ORDERING INFORMATION

HFE15	-1	/12	-1H	T	-L2	R	(XXX)

Type	Standard
Manual wwitch	**Nil:** None **-1:** With manual switch
Coil voltage	3,5,6,9,12,24,32,48 VDC
Contact form[1)	**1H: 1** Form A **1D: 1** Form B **1Z:1** Form C
Contact material	**T:** AgSnO$_2$
Sort	**L1:** Single coil latching **L2:** Double coils latching
Polarity	**R:** Negative polarity **Nil:** Positive polarity
Special code[2)	**XXX:** Customer special requirement

Notes: 1) 1H means that relay is on the "reset" status when delivery; 1D means that relay is on the "set" status when delivery.
2) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM   Unit: mm
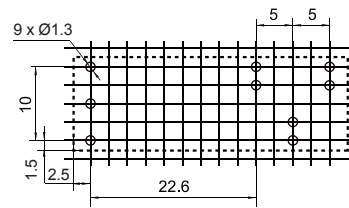
Outline Dimensions

Right Elevation
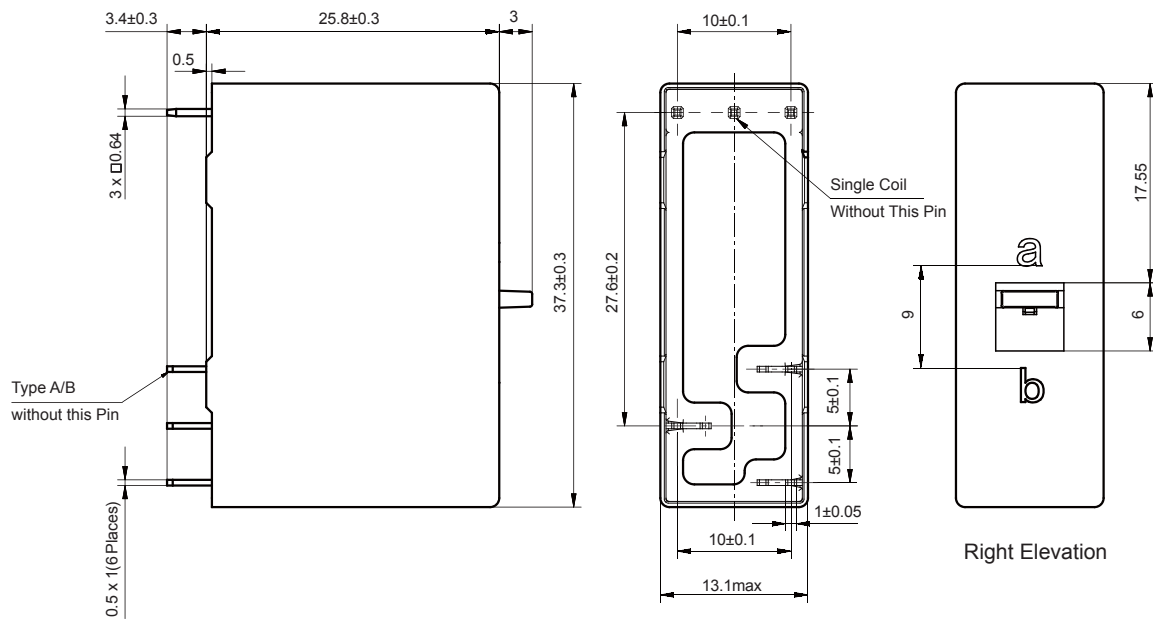
Remark:
1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be±0.2mm; outline dimension ＞1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension ＞5mm, tolerance should be±0.4mm.
2) The length of pins does not include the length of the tin tip, and the length of the tin tip should not exceed 0.5mm after tin pick-up.
3) The tolerance without indicating for PCB layout is always ±0.1mm.
4) The width of the gridding is 2.54mm.

Wiring Diagram
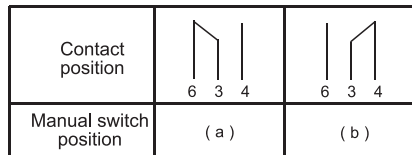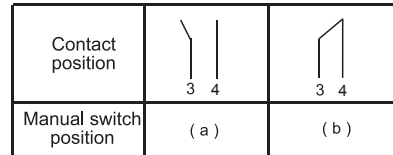
PCB Layout（Bottom view）

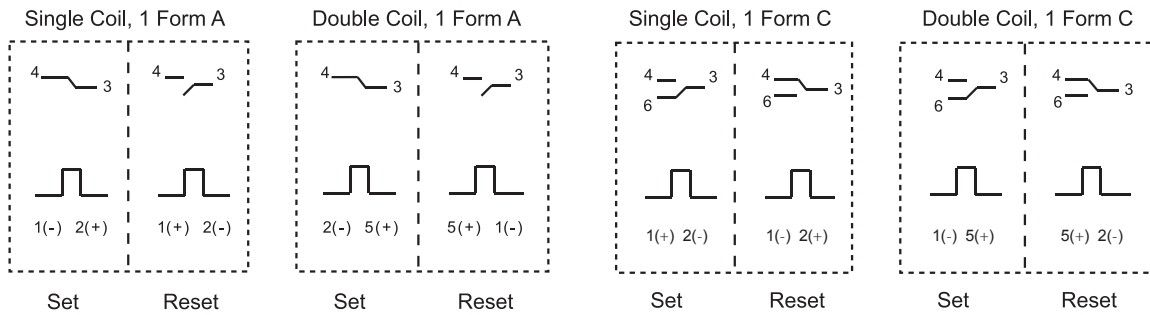9 x Ø1.3

5　5

10

1.5

2.5

22.6

1 Form C

Contact position		
	6　3　4	6　3　4
Manual switch position	(a)	(b)

1 Form A

Contact position		
	3　4	3　4
Manual switch position	(a)	(b)

Positive Polarity

Single Coil, 1 Form A

4 — 3　　4 — 3

1(-)　2(+)　　1(+)　2(-)

Set　　Reset

Double Coil, 1 Form A

4 — 3　　4 — 3

2(-)　5(+)　　5(+)　1(-)

Set　　Reset

Single Coil, 1 Form C

4 — 3　　4 — 3
6　　　　6

1(+)　2(-)　　1(-)　2(+)

Set　　Reset

Double Coil, 1 Form C

4 — 3　　4 — 3
6　　　　6

1(-)　5(+)　　5(+)　2(-)

Set　　Reset

Negtive Polarity

Single Coil, 1 Form A

4 — 3　　4 — 3

1(+)　2(-)　　1(-)　2(+)

Set　　Reset

Double Coil, 1 Form A

4 — 3　　4 — 3

2(+)　5(-)　　5(-)　1(+)

Set　　Reset

Single Coil, 1 Form C

4 — 3　　4 — 3
6　　　　6

1(-)　2(+)　　1(+)　2(-)

Set　　Reset

Double Coil, 1 Form C

4 — 3　　4 — 3
6　　　　6

1(+)　5(-)　　5(-)　2(+)

Set　　Reset

NOTICE

1. Relay is on the "reset" or "set" 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 "ret"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. When choose the relay with PCB termination, the recommended welding temperature range and duration is 240°C~260°C, 2s~5s; Please do not use the reflow welding method, if the reflow is really required, please contact our technicals; the normal recommeded wave soldering temperature is 250°C within 2s.

Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.