HFE15L MINIATURE HIGH POWER LATCHING RELAY

File No.: E134517

File No.: 40045248

File No.: CQC19002223146

Features

- Latching relay
- In accordance to IEC60669-2-1
- 20A switching capacity
- Lamp load capacity up to 10A
- Inrush current capacity up to 430A for 1.5ms

RoHS compliant

CONTACT DATA

Contact arrangement	1A, 1B
Contact resistance 1)	20mΩ max.(at 1A 24VDC)
Contact material	$AgSnO_2$
Contact rating	20A 250VAC, $1x10^5$ops(Resistive) 25A 250VAC, $5x10^4$ops(Resistive) 10A 250VAC C=140uF, $3x10^4$ops(Capacitive) 10A 250VAC cosΦ=0.4, $3x10^4$ops(Inductive) 20A 30VDC, $3x10^4$ops(Resistive) 16A 250VAC, $1x10^5$ops(AC-1) 12.5A 400VAC, $1x10^5$ops(AC-1) 10A 277VAC, $6x10^3$ops (Electronic ballast)
Max. switching voltage	440VAC
Max. switching current	25A
Max. switching power	5000VA
Mechanical endurance	1 x 10^6ops
Electrical endurance	See “contact rating”

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

CHARACTERISTICS

Insulation resistance		1000MΩ (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°C ~ 70°C
Termination		PCB
Unit weight		Approx.23g

Notes: The data shown above are initial values.

COIL

Rated power	Single coil latching: Approx. 0.7W Double coils 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	6+6
5	≤4.0	≥50	17.5+17.5
6	≤4.8	≥50	25+25
9	≤7.2	≥50	54+54
12	≤9.6	≥50	100+100
24	≤19.2	≥50	400+400
32	≤25.6	≥50	680+680
48	≤38.4	≥50	1600+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 Fluorescent Lamp (Without compensation):10A 250VAC Fluorescent Lamp (With parallel compensation):10A 250VAC Incandescent Lamp:2500W 250VAC
UL	1H,1D	Resistive:20A 250VAC Electronic ballast:10A 277VAC

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

ORDERING INFORMATION

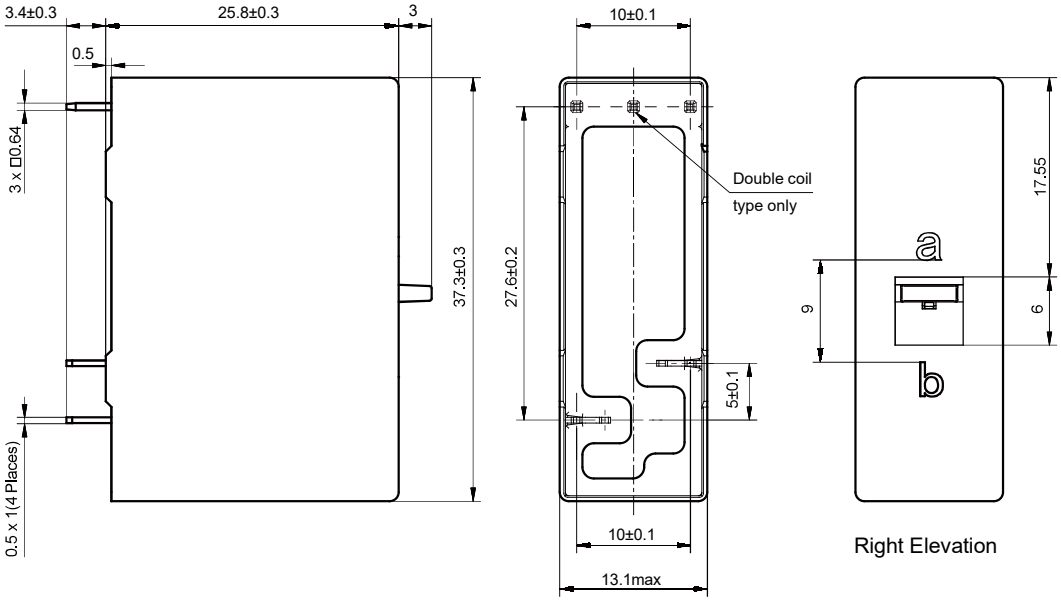
	HFE15L	-1	/12	-1H	T	-L2	R	(XXX)
Type	**HFE15L:** Lamp control							
Manual switch		**1:** With manual switch **Nil:**Without manual switch						
Coil voltage			3,5,6,9,12,24,32,48 VDC					
Contact arrangement 1)				**1H: 1** Form A **1D: 1** Form B				
Contact material					**T:** $AgSnO_2$			
Coil type						**L1:** Single coil latching **L2:** Double coils latching		
Polarity							**R:** Reverse polarity **Nil:** Standard polarity	
Special code2)	**XXX:** Customer special requirement							

Notes: 1) H means that relay is on the "reset" status when delivery; D 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

Unit: mm

Outline Dimensions



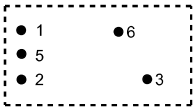
Remark:

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 terminal does not cover the length of tin tip,which shall not exceed 0.5mm after tin dipping.
3) The tolerance without indicating for PCB layout is always ±0.1mm.
4) The width of the gridding is 2.54mm.

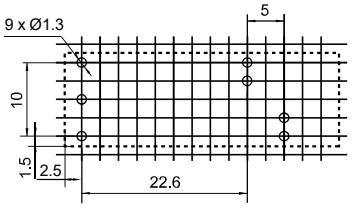
OUTLINE DIMENSIONS, PCB LAYOUT,WIRING DIAGRAM

Unit: mm

Wiring Diagram



PCB Layout（Bottom view）

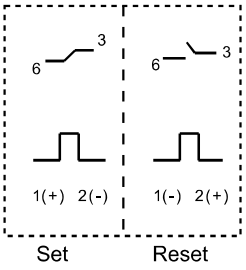


1 Form A

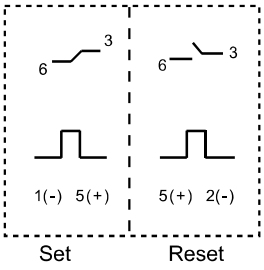
Contact position	6 3	6 3
Manual switch position	(a)	(b)

Standard Polarity

Single Coil, 1 Form A

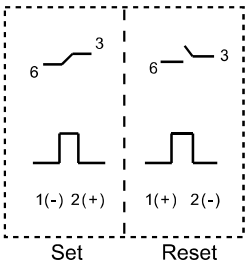


Double Coils, 1 Form A

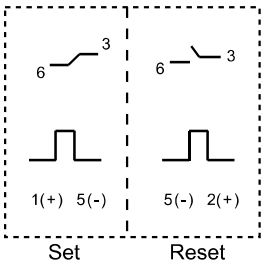


Reverse polarity

Single Coil, 1 Form A



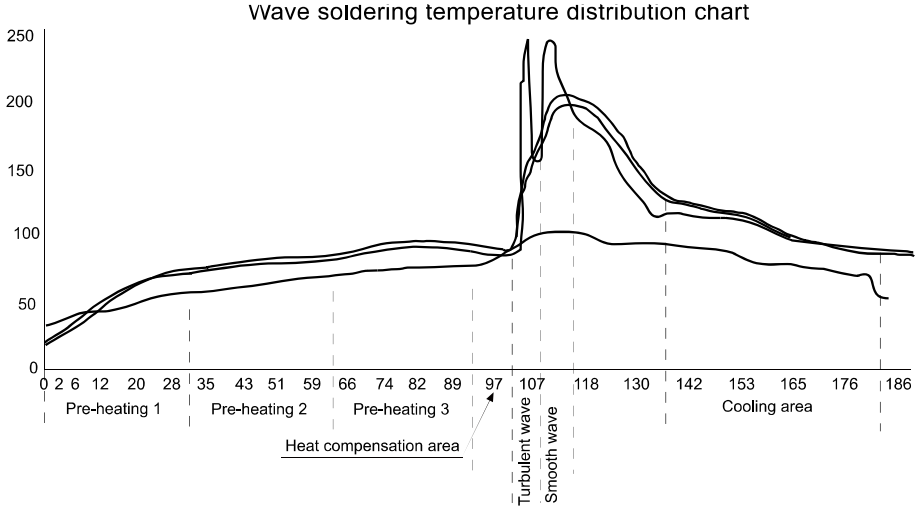
Double Coils, 1 Form A



CAUTIONS

1. The recommended soldering temperature range is 250±10°C with the duration of 2～5s. It is not suggested to apply reflow soldering method, if it is required indeed, please contact with our technicians. It is general required that the wave soldering temperature at 250°C shall not more than 2s.
2. Latching relay is on the "reset" or "set" status when delivery, 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.
3. In order to maintain "set" or "reset" status, energized voltage applied across the 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.

Wave soldering temperature distribution chart



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.