HFK11-T 汽车继电器



Features

- Max.continuous current 32A
- Extended temp. Range up to 105℃
- With highly established reliability
- Strong resistance ability to shock & vibration
- Reflow soldering version available
- RoHS & ELV compliant

Typical Applications

EV & compact on-board chargers (6.6kW single-phase / 22kW three-phase), AC power switching

RoHS compliant

CHARACTERISTICS

Contact arrangement	1A/1C
Voltage drop	NO:Typ.20mV,100mV max.(at 10A) NC:Typ.30mV,250mV max.(at 10A)
Max. continuous current[2)]	NO：32A (at 105℃,6V) NO：35A (at 70℃,6V)
Max. switching current	AC:NO:32A
Max. switching voltage	440VAC
Min.contact load	1A 12VDC
Electrical load	See "CONTACT DATA"
Mechanical endurance	3×10⁵OPS
Insulation resistance	1000MΩ(at 500VDC)
Withstand voltage(1A)	Between open contacts: 2000VAC 1min Between coil and contacts: 4000VAC 1min
Withstand voltage(1C)	Between open contacts: 1500VAC 1min Between coil and contacts: 4000VAC 1min

Operate time		Max.:15ms
Release time[3)]		Max:10ms
Ambient temperature		-40℃ to 105℃
Vibration resistance (Functional)	Sinusoidal	10Hz to 55Hz 1.5mm DA
	Random	ISO-19453-3,4.1.2.3 test 3 (For 1 Form A)
Shock resistance(Functional)		1C:100m/s², 1A:250m/s²
Termination		PCB[4)]
Construction		Plastic sealed,Flux proofed
Unit weight		Approx.15g

1) The data shown above are initial value;
2) The test under the follow conditions:
   a.the relay is mounted on the PCB;
   b.The PCB is a double layer board,For load terminals of 3 #, 4 #, and 5 #, the thickness of each copper foil is 4 oz(140μm),the width of each copper foil is 10.64×(1±5%)mm,the length of the copper foil is 50 mm±1 mm,and the Tg value of the PCB is 150℃ or above;
3) The value is measured when voltage drops suddenly from nominal voltage to 0VDC and coil is not paralleled with suppression circuit;
4) Since it is an environmental friendly product,please select lead-free solder when welding.The recommended soldering temperature and time is (260±3)℃,(5±0.3)s.

CONTACT DATA[1)]

Load voltage	Load type	Contact arrangement	Load current Making[2)]	Load current Carrying[2)]	Load current Breaking[2)]	On/Off ratio		Electrical endurance OPS	Ambient Temperature
			A	A	A	On s	Off s		
277VAC	Resistive	NC	0	32	0	1	9	5×10⁴	105℃
277VAC	Resistive	NO	2	32	2	1	9	5×10⁴	105℃
277VAC	Resistive	NO	16	16	16	1	9	3×10⁴	85℃
277VAC	Resistive	NO	26	26	26	1	9	2×10⁴	85℃
277VAC	Resistive	NO	32	32	32	1	9	1×10⁴	85℃
277VAC	Resistive	NO	35	35	35	1	9	1×10⁴	70℃

Notes:1) Load mentioned in this chart is for relays with no parallel diode or Zener Diode.For those with parallel diode,Zener Diode or other components,please contact Hongfa for more technical supports.Please also contact Hongfa if the actual application load is different from what mentioned above.
2) Making 100ms,loading 800ms,breaking 100ms.
3) When the making current and breaking current are the same as the carrying current,it is only applicable to flux-proof products and the customer special code(AS5).

COIL DATA

at 23°C

Nominal voltage VDC	Pick-up voltage[1] VDC max.	Holding voltage[2][4] VDC max.	Drop-out voltage[1] VDC min.	Max Allowable Coil voltage[3] VDC	Coil resistance ×(1±10%) Ω	Power consumption W
12	9.6	6~7(-40°C to 105°C)	0.6	13.2	51	2.82

Notes:1)The data shown above are initial value.
2)To energize relay properly, apply 120% ~ 130% rated coil voltage for 200 ms, and then it is reduced to holding voltage.
3)Maximum allowable coil voltage refers to the maximum voltage that a relay coil could endure in 60 seconds.
4)To avoid overheating and burning, the coil can not be consistently applied to with voltage larger than maximum holding voltage.

ORDERING INFORMATION

HFK11-T / 12 -H 18 S T （XXX）

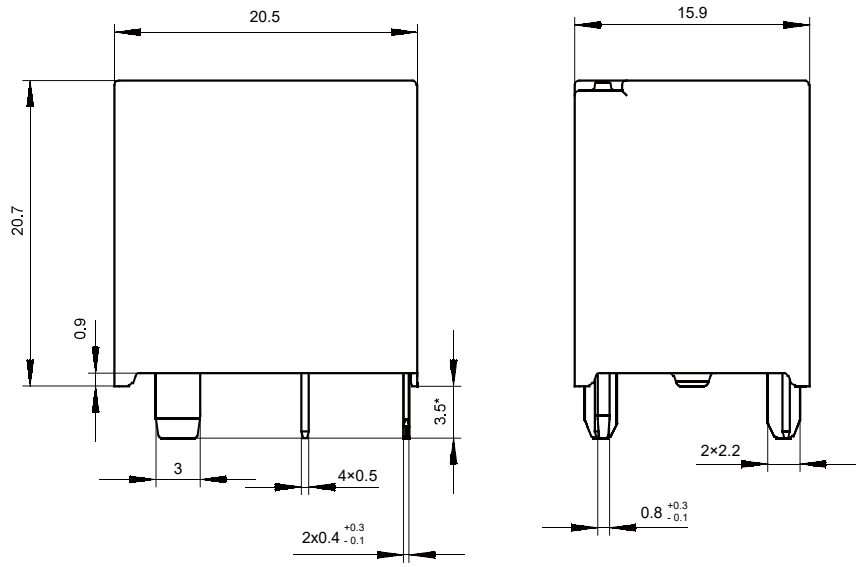
Type	**HFK11-T:**High-temperature version/ Reflow soldering version
Coil voltage	**12**： 12VDC
Contact arrangement	**H**：1 Form A **Z**：1 Form C
Contact gap	**18**：Contact gap≥1.8mm(For 1 form A) **10**：Contact gap≥1.0mm(For 1 form C)
Construction	**S**：Plastic sealed[1] **Nil**：Flux proofed
Contact material	**T**： $AgSnO_2$
Special code	**XXX:** Customer special requirement **Nil:** Standard

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions

HFK11-T/12-H18□T□□□



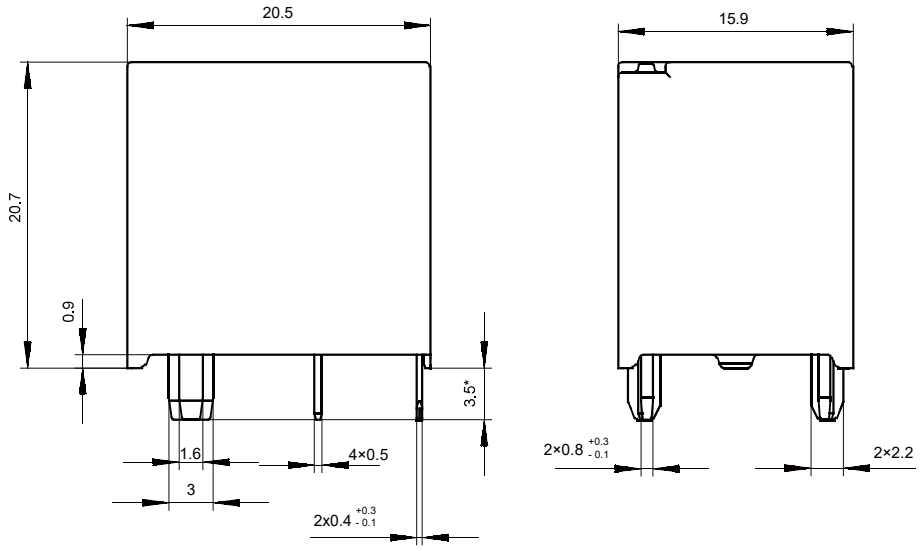
Notes:∗ The additional tin top is max. 1mm.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions

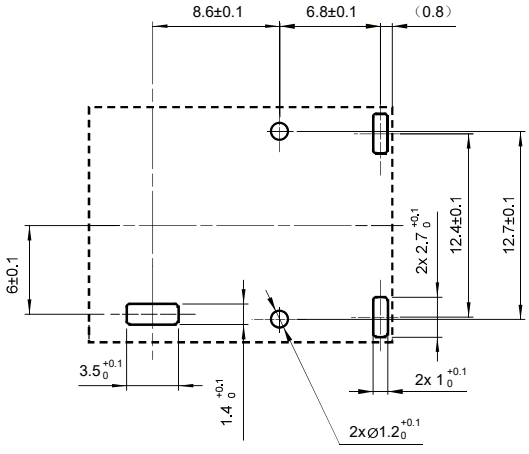
HFK11-T /12-Z10□T□□□



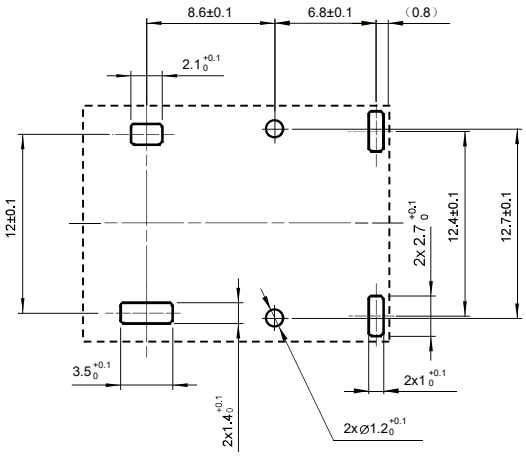
Notes:∗ The additional tin top is max. 1mm.

PCB Layout(Bottom view)

HFK11-T/12-H18□T□□□



HFK11-T /12-Z10□T□□□



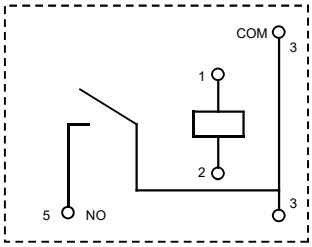
Notes:1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm;
outline dimension＞1mm and ≤5mm,tolerance should be ±0.3mm; outline dimension＞5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

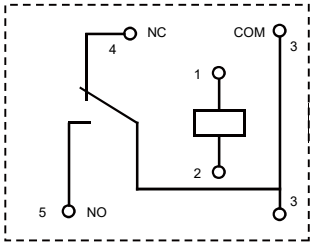
Unit: mm

Wiring Diagram(Bottom view)

HFK11-T/12-H18□T□□□



HFK11-T /12-Z10□T□□□



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.

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