

HFKF/HFKF-T

AUTOMOTIVE RELAY



Single



Twin(8 pins)



Twin(10 pins)

Typical Applications

Central door lock, Power doors and windows, Seat adjustment, Sunroof motor control, Mirror adjustment

Features

- 25A motor locked load
- Extremely small relay
- Change-over contact version
- Single and twin(8 pins or 10 pins) version available
- Coil wire insulation class H (180°C)
- HFKF-T (reflow soldering version) available
- RoHS & ELV compliant

CHARACTERISTICS

Contact arrangement	1C (Single), 2C Twin(8 pins), 2C Twin(10 pins)
Voltage drop (initial) ¹⁾	Typ.: 50mV (at 10A) Max.: 250mV (at 10A)
Max. continuous current ²⁾	25A (at 23°C, 2min)
Max. switching current	30A
Max. switching voltage	16VDC
Min. contact load	1A 6VDC
Electrical endurance	See "CONTACT DATA"
Mechanical endurance	1 x 10 ⁷ OPS (300OPS/min)
Initial insulation resistance	100MΩ (at 500VDC)
Dielectric strength ³⁾	between contacts: 500VAC between coil & contacts: 500VAC
Operate time	Max.: 10ms (at nomi. vol.)
Release time ⁴⁾	Max.: 10ms

Ambient temperature	HFKF: -40°C to 85°C HFKF-T: -40°C to 110°C	
Vibration resistance	Functional ⁵⁾	10Hz to 100Hz 44.1m/s ²
	Destructive	10Hz to 500Hz 44.1m/s ² , 2h
Shock resistance	Functional ⁵⁾	100m/s ² (pulse duration: 11ms)
	Destructive	1000m/s ² (pulse duration: 6ms)
Termination	PCB ⁶⁾	
Construction	Plastic sealed, Flux proofed	
Unit weight	Single relay: Approx. 3.5g Twin relay: Approx. 6.5g	

- 1) Equivalent to the max. initial contact resistance is 100mΩ (at 1A 6VDC).
- 2) For NO contacts, measured when applying 100% rated voltage on coil.
- 3) 1min, leakage current less than 1mA.
- 4) The value is measured when voltage drops suddenly from nominal voltage to 0 VDC and coil is not paralleled with suppression circuit.
- 5) When energized, opening time of NO contacts shall not exceed 10μs, when non-energized, opening time of NC contacts shall not exceed 10μs, meantime, NO contacts shall not be closed.
- 6) Since it is an environmental friendly product, please select lead-free solder when welding. The recommended soldering temperature and time is (250±3)°C, (5±0.3)s.

CONTACT DATA³⁾

at 23°C

Load voltage	Load type ²⁾		Load current A		On/Off ratio		Electrical endurance OPS	Contact material	Load wiring diagram
			1C, 2C		On s	Off s			
			NO	NC					
14VDC	Resistive	Make	20	10	1	9	1 × 10 ⁵	AgSnO ₂	See diagram 1
		Break	20	10					
	Motor	Make ¹⁾	25	---	0.5	9.5	1 × 10 ⁵	AgSnO ₂	See diagram 2
		Break	25	---					
	Simulate motor operation	Make ¹⁾	25	---	0.02	9.5	2 × 10 ⁵	AgSnO ₂	
		Transient	15	---	0.03				
Break		5	---	0.45					



HONGFA RELAY

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

2017 Rev. 1.11

- 1) Corresponds to the peak inrush current on initial actuation (motor).
- 2) The load wiring diagrams are listed below:

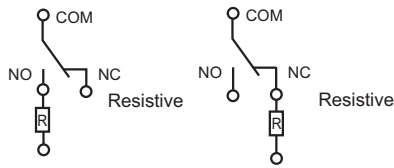


diagram 1

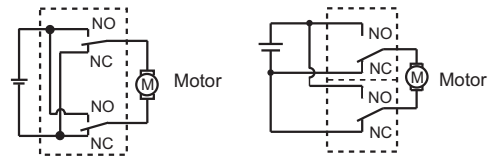


diagram 2

- 3) When the load requirement is different from content of the table above, please contact Hongfa for relay application support.

COIL DATA

at 23°C

Nominal voltage VDC	Pick-up voltage VDC max.	Drop-out voltage VDC min.	Coil resistance $x(1\pm 10\%)\Omega$	Power consumption W	Max. allowable overdrive voltage ¹⁾ VDC	
					at 23°C	at 85°C
12	6.5	0.8	160	0.9	18	14
12	7.7	0.8	220	0.655	20	16

1) Max. allowable overdrive voltage is stated with no load applied (For dual relays, only one side of coil is energized).

ORDERING INFORMATION

	HFKF / 12 -1Z S P T (XXX)
Type	HFKF: Standard HFKF-T: Reflow soldering version or high heat-resistant version
Coil voltage	12: 12VDC
Contact arrangement	1Z: 1 Form C (Single version) BZ: 2 Form C (Twin(8 pins) version) 2Z: 2 Form C (Twin(10 pins) version)
Construction ¹⁾	S: Plastic sealed Nil: Flux proofed
Coil power	P: 0.9W Nil: 0.655W
Contact material	T: AgSnO ₂
Special code ²⁾	XXX: Customer special requirement Nil: Standard

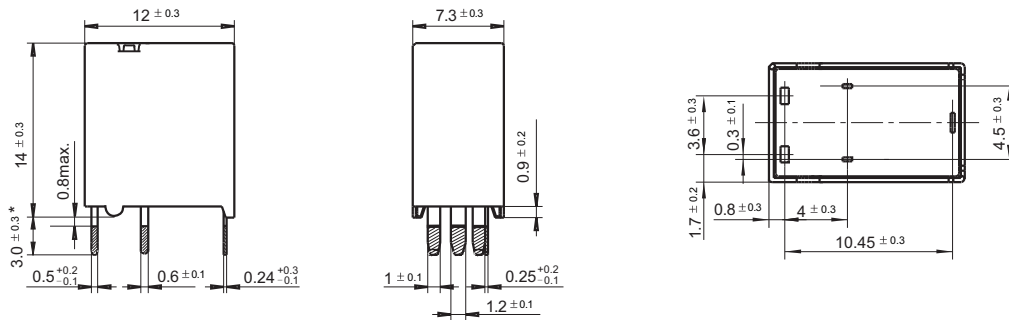
Notes: 1) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.

2) The customer special requirement express as special code after evaluating by Hongfa. e.g. (170) stands for flasher load.

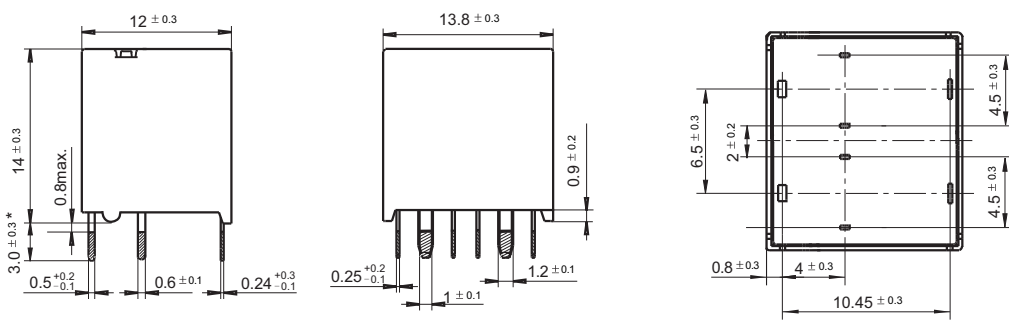
3) When HFKF-T is reflow soldered, only flux proofed is available.

Outline Dimensions

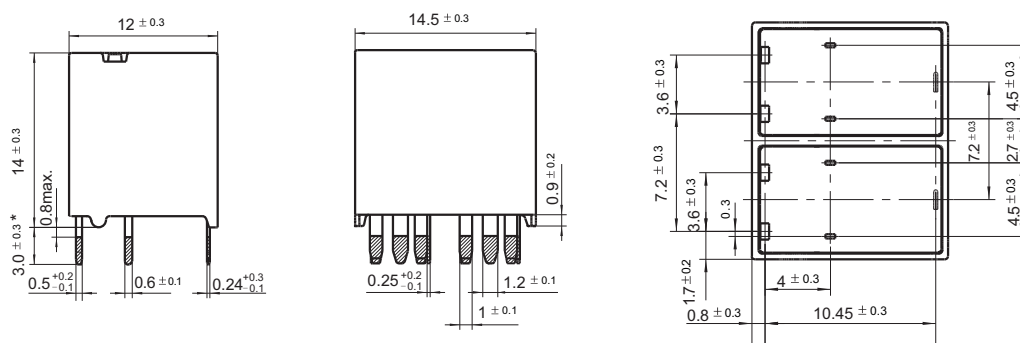
1 Form C (Single relay)



2 Form C (Twin(8 pins)) relay



3 Form C (Twin(10 pins)) relay



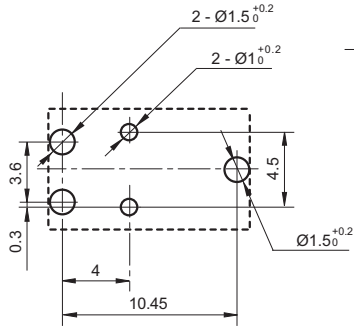
Remark: * The additional tin top is max. 1mm.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

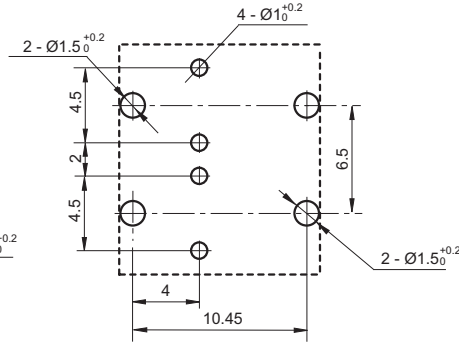
Unit: mm

PCB Layout (Bottom view)

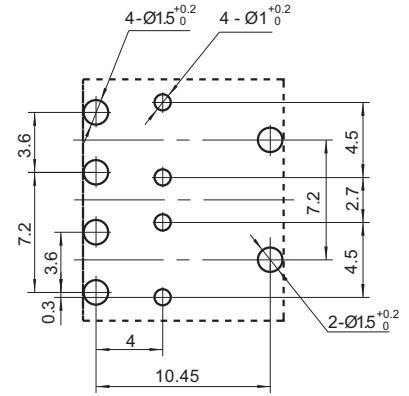
1 Form C (Single relay)



2 Form C (Twin(8 pins)) relay



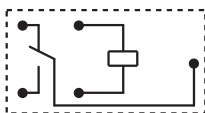
3 Form C (Twin(10 pins)) relay



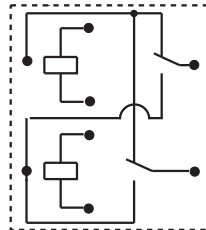
Undeclared tolerance: ± 0.1 .

Wiring Diagram (Bottom view)

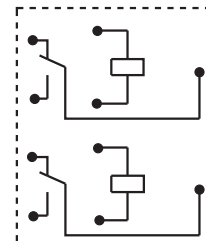
1 Form C (Single relay)



2 Form C (Twin(8 pins)) relay



3 Form C (Twin(10 pins)) relay



Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. In case there is specific criterion (such as mission profile, technical specification, PPAP etc.) checked and agreed by and between customer and Hongfa, this specific criterion should be taken as standard regarding any requirement on Hongfa product.

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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