

# HFKT/HFKT-T

# AUTOMOTIVE RELAY



### Typical Applications

ABS control, Cooling fan, Engine control, Fuel pump, Heating plug, Hazard warning lamp, Fog lamp & headlight, EPS, window & mirror defogger

### Features

- Max. continuous current 40A
- Max. making current 200A
- Extended temp. range up to 105°C
- With highly established reliability
- Strong resistance ability to shock & vibration
- Reflow soldering version available
- RoHS & ELV compliant

## CHARACTERISTICS

Contact arrangement	1A
Voltage drop (initial) <sup>1)</sup>	Typ.: 30mV (at 10A) Max.: 300mV (at 10A)
Max. continuous current <sup>2)</sup>	40A (at 23°C) 33A (at 85°C) 22A (at 105°C)
Max. switching current	Make: 200A <sup>3)</sup> Break: 40A (Resistive, 13.5VDC)
Max. switching voltage	16VDC
Min. contact load	1A 6VDC
Electrical endurance	See "CONTACT DATA"
Mechanical endurance	2 x 10 <sup>6</sup> OPS
Initial insulation resistance	100MΩ (at 500VDC)
Dielectric strength <sup>4)</sup>	500VAC
Operate time	Typ.: 4ms, Max.: 10ms

Release time <sup>5)</sup>	Typ.: 1.5ms Max.: 5ms
Ambient temperature	-40°C to 105°C
Vibration resistance <sup>6)</sup>	30Hz ~ 440Hz, 196m/s <sup>2</sup>
Shock resistance <sup>6)</sup>	294m/s <sup>2</sup> , close time of NO contacts <100μs 980m/s <sup>2</sup> , release time of closed NO contacts <100μs
Termination	PCB <sup>7)</sup>
Construction	Plastic sealed, Flux proofed
Unit weight	Approx. 11g

- 1) Initial value
- 2) Measured when applying 100% rated voltage on coil.
- 3) Inrush peak current under lamp load, at 13.5VDC.
- 4) 1min, leakage current less than 1mA.
- 5) The value is measured when voltage drops suddenly from nominal voltage to 0 VDC and coil is not paralleled with suppression circuit.
- 6) when non-energized, close time of NO contacts shall not exceed 100μs. When energized, opening time of closed NO contacts shall not exceed 100μs.
- 7) 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 DATA<sup>1)</sup>

Load voltage	Load type		Load current	On/Off ratio		Electrical endurance <sup>1)</sup> OPS	Contact material	Ambient temp.
			1A NO	On s	Off s			
13.5VDC	Resistive	Make	40	0.5	4.5	1×10 <sup>5</sup>	AgSnO <sub>2</sub>	See Ambient Temp. Curve
		Break	40					
	Inductive L=0.5mH	Make	60	0.5	4.5	1×10 <sup>5</sup>	AgSnO <sub>2</sub>	
		Break	35					
	Lamp	Make	200	0.5	4.5	1×10 <sup>5</sup>	AgSnO <sub>2</sub>	
		Break	20					

1) Loads 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.



HONGFA RELAY

ISO9001、ISO/TS16949、ISO14001、OHSAS18001、IECQC 080000 CERTIFIED

2014 Rev. 1.01

## COIL DATA

23°C

Nominal voltage VDC	Pick-up voltage VDC max.	Drop-out voltage VDC min.	Coil resistance $\times(1\pm 10\%)\Omega$	Power consumption W	Max. allowable overdrive voltage <sup>1)</sup> VDC
10	5.6	1.3	120	0.833	14.8
12	6.9	1.5	176	0.818	18

1) Max. allowable overdrive voltage is stated with no load applied.

## ORDERING INFORMATION

		<b>HFKT /</b>	<b>12</b>	<b>-H</b>	<b>S</b>	<b>T</b>	<b>(XXX)</b>
<b>Type</b>	HFKT: Standard HFKT-T: Reflow soldering version <sup>1)</sup>						
<b>Coil voltage</b>	10: 10VDC 12: 12VDC						
<b>Contact arrangement</b>	H: 1 Form A						
<b>Construction</b>	S: Plastic sealed <sup>2)</sup> Nil: Flux proofed (Reflow soldering version)						
<b>Contact Material</b>	T: AgSnO <sub>2</sub>						
<b>Customer special code</b>							

1) The structure of HFKT-T is only flux proof, the open vent hole is on the top of the relay;

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

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

### Outline Dimensions

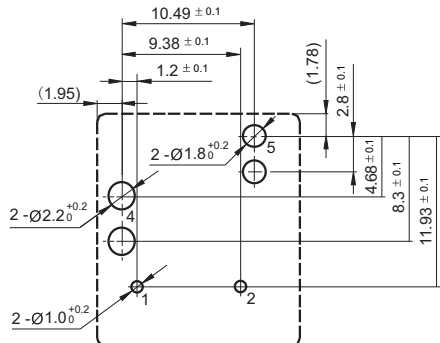


Remark: \* The additional tin top is max. 1mm.

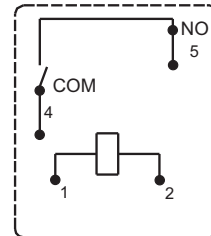
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

PCB Layout (Bottom view)



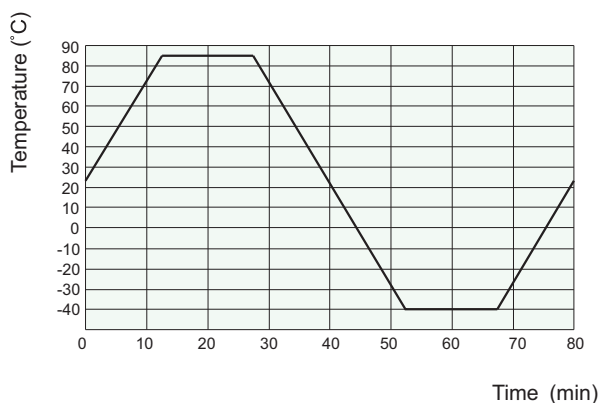
Wiring Diagram(Bottom view)



## CHARACTERISTIC CURVES

Ambient temperature curve of the electrical endurance test

Ambient temp. curve (one cycle)



- 1) The minimum temperature is  $-40^{\circ}\text{C}$ .
- 2) The maximum temperature is  $85^{\circ}\text{C}$ .

### 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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