HFKT/HFKT-T AUTOMOTIVE RELAY

Features

- Max.continous current 50A
- Max.making current 200A
- Extended temp. range up to 125˚C
- With highly established reliability
- Strong resistance ability to shock & vibration
- Reflow soldering version available
- RoHS & ELV compliant

Typical Applications

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

CHARACTERISTICS

Contact arrangement	1A
Voltage drop (initial) 1)	Typ.: 30mV (at 10A) Max.: 300mV (at 10A)
Max. continuous current 2)	67.5A 30min/50A continuous (at 23˚C) 62.5A 30min/35A continuous (at 85˚C) 58.5A 30min/25A continuous (at 125˚C)
Max. switching current	Make: 200A 3) Break: 40A (Resistive, 13.5VDC)
Max. switching voltage	16VDC
Min. contact load	1A 6VDC
Electrical endurance	See "CONTACT DATA"
Mechanical endurance	2 x 10^6 OPS
Initial insulation resistance	100MΩ (at 500VDC)
Dielectric strength 4)	500VAC
Operate time	Typ.: 4ms, Max.: 10ms
Release time 5)	Typ.: 1.5ms Max.: 5ms

Ambient temperature	-40˚C to 125˚C
Vibration resistance 6)	30Hz to 440Hz, 196m/s^2
Shock resistance 6)	294m/s^2, close time of NO contacts <100μs 980m/s^2, release time of closed NO contacts <100μs
Termination	PCB 7)
Construction	Plastic sealed, Flux proofed
Unit weight	Approx. 11g

1) Initial value.
2) Tested under below conditions:
   a) Measured when applying 100% rated voltage on the coil.
   b)The PCB board for the test is of two layers,Copper is 4oz(140μm), 10.64x(1±5%)mm in width and (50±1)mm in length,external wire is 6.0mm^2,Tg value of Printed Circuit Board: 150˚C.
   c)The installation spacing between relay samples is 100mm.
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 (260±3)˚C , (5±0.3)s.

CONTACT DATA 1)

Load voltage	Load type		Load current	On/Off ratio		Electrical endurance 1) OPS	Contact material	Ambient temp.
			1A	On s	Off s			
13.5VDC	Resistive	Make	40	0.5	4.5	1×10^5	$AgSnO_2$	-40˚C to 85˚C Temp.Cycl
		Break	40					
	Inductive	Make	80	2	2	1×10^5	$AgSnO_2$	
		Break	33					
	Lamp	Make	200	0.5	4.5	1×10^5	$AgSnO_2$	
		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 diffrent from what mentioned aboved.
2) The customer special requirement express as special code after evaluating by Hongfa. e.g. (170) stands for flasher load.The performance parameters of products with characteristic numbers shall be subject to the specific specifications provided by Hongfa.

COIL DATA

Nominal voltage VDC	Pick-up voltage VDC			Drop-out voltage VDC			Coil resistance x(1±10%)Ω	Power consumption W
	23˚C	85˚C	125˚C	23˚C	85˚C	125˚C	23˚C	23˚C
10	≤5.6	≤7	≤7.9	≥1.3	≥1.6	≥1.9	120	0.833
12	≤6.9	≤8.6	≤9.7	≥1.5	≥1.9	≥2.1	176	0.818

ORDERING INFORMATION

HFKT / 12 -H S T (XXX)

Type	**HFKT**: Standard **HFKT-T**: Reflow soldering version
Coil voltage	**10**: 10VDC **12**: 12VDC
Contact arrangement	**H**: 1 Form A
Construction	**S**: Plastic sealed [1] **Nil:** Flux proofed
Contact Material	**T**: $AgSnO_2$
Special code[2]	**XXX:** Customer special requirement **Nil:** Standard

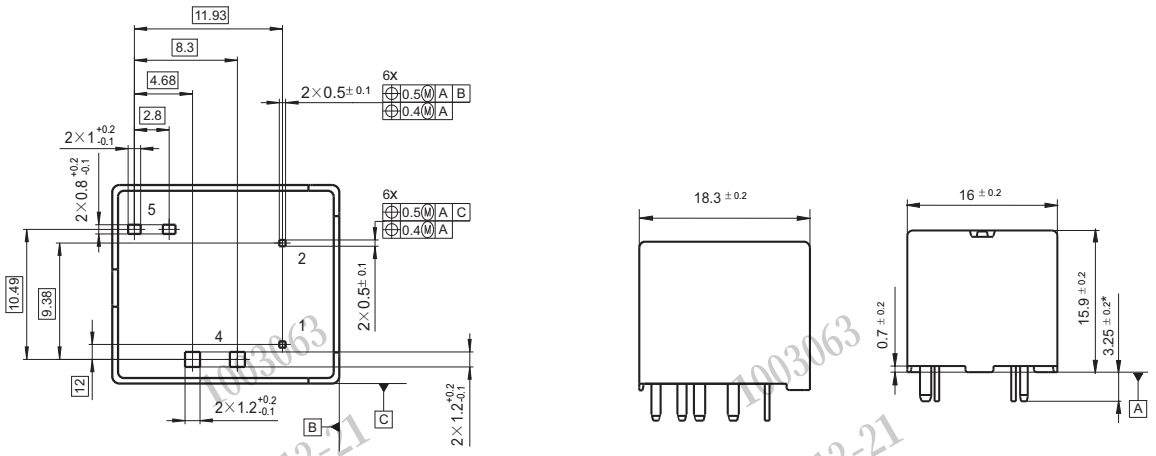
Notes:1) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.

2) The customer special requirement express as special code after evaluating by Hongfa.e.g.(170) stands for flasher load.The performance and parameters of the special realy are according to it's specification.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions

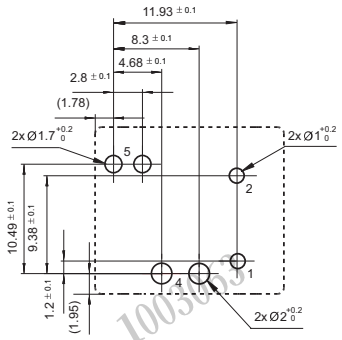


Remark: * The additional tin top is max. 1mm.

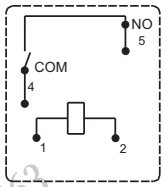
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

PCB Layout (Bottom view)



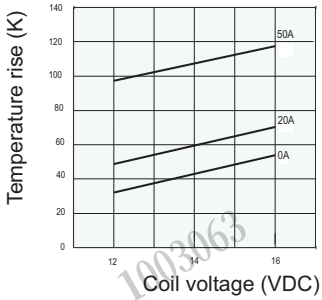
Wiring Diagram(Bottom view)



CHARACTERISTIC CURVES

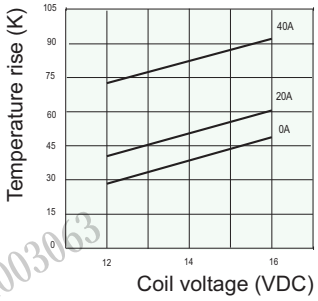
(1) Coil temperature rise (23℃)

Experiment：HFKT-T/12-HST
Amount：three
Carrying current：0A,20A,50A
Ambient temp.：23℃



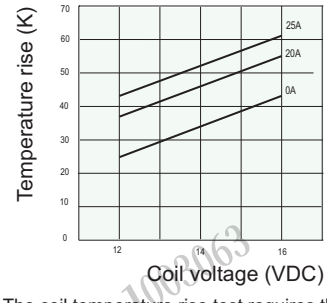
(2) Coil temperature rise (85℃)

Experiment：HFKT-T/12-HST
Amount：three
Carrying current：0A,20A,40A
Ambient temp.：85℃



(3) Coil temperature rise (125℃)

Experiment：HFKT-T/12-HST
Amount：three
Carrying current：0A,20A,25A
Ambient temp.：125℃



Remark: The coil temperature rise test requires the relay to be installed on the PCB. The PCB is double-layered. The thickness of the copper foil is 4 oz (140 μm), the width of each copper foil is 10.64 × (1 ± 5%) mm, the length of the copper foil is 50mm±1mm, and the Tg value of the PCB board is 150℃.The installation spacing between relay samples is 100mm.

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.