

HFK8-T

AUTOMOTIVE RELAY



Typical Applications

Lamp control, Heater control,
Motor control such as fans and pumps

Features

- Max.continuous current 40A
- Max.making current 120A
- Extended temp. range up to 125°C
- With highly established reliability
- Strong resistance ability to shock & vibration
- Reflow soldering version available
- RoHS & ELV compliant

CHARACTERISTICS

Contact arrangement	1U	Ambient temperature	-40°C to 125°C
Voltage drop (initial) ¹⁾	Typ.: 40mV (at 10A) Max.: 250mV (at 10A)	Vibration resistance ⁷⁾ (Functional)	10Hz to 300Hz, 44.1 m/s ²
Max. continuous current ²⁾	23°C: 54A 30min/40A continuous 85°C: 50A 30min/30A continuous 125°C: 47A 30min/20A continuous	Vibration resistance (Destructive)	10Hz to 500Hz, 44.1 m/s ²
Max. switching current	Make: 120A ³⁾ Break: 60A ⁴⁾	Shock resistance ⁷⁾ (Functional)	100 m/s ²
Max. switching voltage	16VDC	Shock resistance (Destructive)	1000 m/s ²
Min. contact load	1A 6VDC	Termination	PCB ⁸⁾
Electrical endurance	See "CONTACT DATA"	Construction	Plastic sealed, Flux proofed
Mechanical endurance	5 x 10 ⁶ OPS	Unit weight	Approx. 6.5g
Initial insulation resistance	100MΩ (at 500VDC)	1) Initial value, Equivalent to the max. initial contact resistance is 100mΩ (at 1A 6VDC).	
Dielectric strength ⁵⁾	500VAC	2) Measured when applying 100% rated voltage on coil, mounted on PC board: thickness: 1.6mm, double-sided copper traces (trace thickness: 4oz(140μm), trace width: 7.52mm, trace length: 50mm)	
Operate time	Typ.: 4ms, Max.: 10ms	3) Inrush peak current under lamp load, at 14VDC.	
Release time ⁶⁾	Typ.: 1ms Max.: 10ms	4) At 23°C, 14VDC (100 cycles, resistive load).	
		5) 1min, leakage current less than 1mA.	
		6) The value is measured when voltage drops suddenly from nominal voltage to 0 VDC and coil is not paralleled with suppression circuit.	
		7) When non-energized, close time of NO contacts shall not exceed 10μs, When energized, opening time of closed NO contacts shall not exceed 10μs.	
		8) 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 DATA¹⁾

Load voltage	Load type		Load current	On/Off ratio		Electrical endurance ¹⁾ OPS	Contact material	Load wiring diagram	Ambient temp.
			1U NO	On s	Off s				
14VDC	Resistive	Make	40	2	2	1×10 ⁵	AgSnO ₂	See diagram 1	23°C
		Break	40						
	Lamp	Make	120	2	2	1×10 ⁵	AgSnO ₂	See diagram 2	23°C
		Break	14						
	Lamp	Make	100	2	2	1×10 ⁵	AgSnO ₂	See diagram 2	-40°C to 125°C
		Break	20						
	Inductive	Make	45	2	2	3.5×10 ⁵	AgSnO ₂	See diagram 3	
		Break	11.5						

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

2019 Rev. 1.00

CONTACT DATA

2) The Load wiring diagrams are listed below:

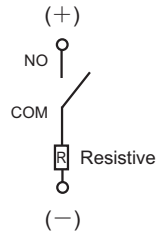


Diagram 1

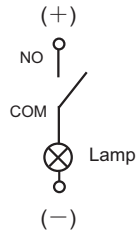


Diagram 2

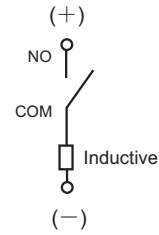


Diagram 3

3) When the load voltage is 24VDC or higher, or the application conditions are different from the table above, please submit the detailed conditions to Hongfa to get more support.

COIL DATA

Nominal voltage VDC	Pick-up voltage VDC max.			Drop-out voltage VDC min.			Coil resistance $\times(1\pm 10\%) \Omega$			Power consumption W 23°C
	23°C	85°C	125°C	23°C	85°C	125°C	23°C	85°C	125°C	
12	6.5	8.1	9.1	1.0	1.2	1.4	225	279	314	0.64

ORDERING INFORMATION

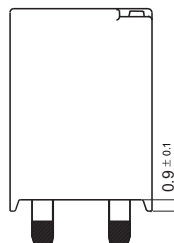
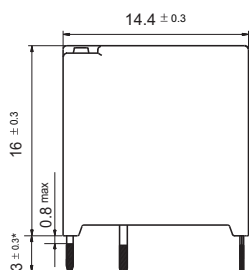
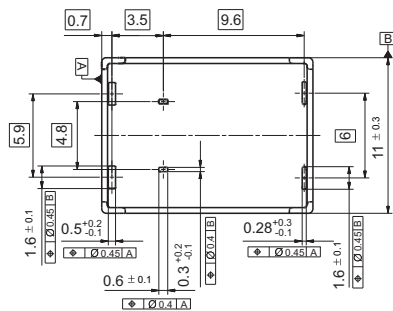
	HFK8-T /	12	-SH	S	P	T	(XXX)
Type	HFK8-T: Reflow soldering version or high heat-resistant version						
Coil voltage	12: 12VDC						
Contact arrangement	SH: 1 Form U						
Construction	S: Plastic sealed ¹⁾ Nil: Flux proofed						
Coil power	P: 0.64W						
Contact Material	T: AgSnO ₂						
Special code²⁾	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.

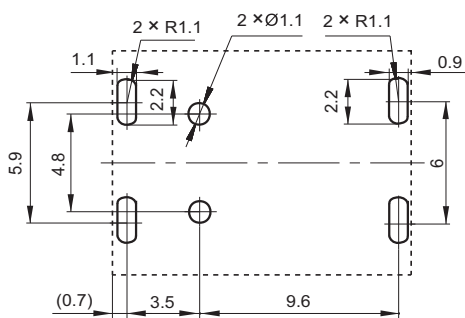
Outline Dimensions

HFK8-T:

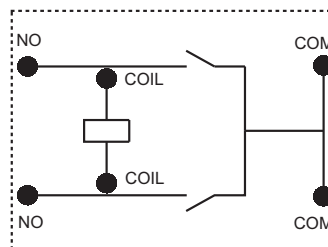


Remark: * The additional tin top is max. 1mm.

PCB Layout (Bottom view)



Wiring Diagram(Bottom view)



Remark: PC board dimensions hadn't specified tolerance: ±0.1

CHARACTERISTIC CURVES

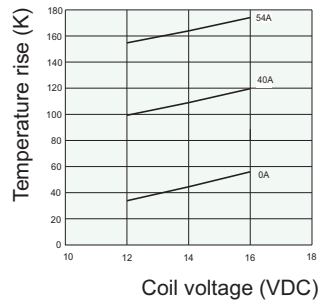
(1) Coil temperature rise (23°C)

Experiment: HFK8-T/12-SHSPT

Amount: three

Carrying current: 0A,40A,54A

Ambient temp.: 23°C



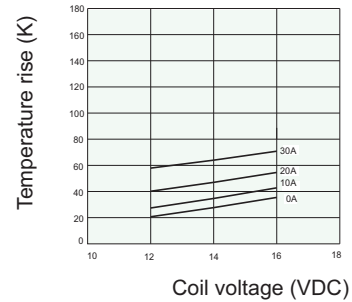
(2) Coil temperature rise (125°C)

Experiment: HFK8-T/12-SHSPT

Amount: three

Carrying current: 0A,10A,20A,30A

Ambient temp: 125°C



Remark: mounted on PC_board: thickness: 1.6mm, double-sided copper traces(trace thickness: 4oz(140 μ m),trace width: 7.52mm,trace length:50mm)

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.