HFKE AUTOMOTIVE RELAY

Features

- 20A switching capability
- Ambient temp.: -40˚C to 85˚C
- 1 Form A & 1 Form C contact arrangement
- Wash tight and Flux proofed types available
- RoHS & ELV compliant

Typical Applications

Indicator lamp control, Powerdoor & windows, Wiper control

CHARACTERISTICS

Contact arrangement	1A, 1C
Voltage drop (initial) 1)	Typ.: 100mV (at 10A) Max.: 250mV (at 10A)
Max. inrush current	60A (at 14VDC)
Max. switching current	20A
Max. switching voltage	14VDC
Min. contact load	0.1A 6VDC
Electrical endurance	1×10^5 OPS
Mechanical endurance	1×10^7OPS (300OPS/min)
Initial insulation resistance	100MΩ (at 500VDC)
Dielectric strength	750VAC (1min, leakage current less than 1mA)
Operate time	Typ.:5ms Max.: 10ms 2)
Release time	Typ.: 5ms Max.: 10ms 3)
Ambient temperature	-40˚C to 85˚C
Vibration resistance	10Hz to 500Hz 98m/s^2 (10g)
Shock resistance	196m/s^2(20g)
Termination	PCB 4)
Construction	Wash tight, Flux proofed
Unit weight	Approx. 15g
Mechanical data	cover retention (pull & push): 50N min. terminal retention (pull & push): 5N min.

1) Equivalent to the max. initial contact resistance is 100mΩ (at 1A 6VDC).
2) At nominal voltage and no transient suppression circuit.
3) The value is measured when voltage drops suddenly from nominal voltage to 0 VDC 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 240˚C to 260˚C, 2s to 5s.

CONTACT DATA 1)

at 23˚C

Load voltage	Load type		Load current A			On/Off ratio		Electrical endurance OPS	Contact material
			1C		1A	On s	Off s		
			NO	NC	NO				
13.5VDC	Resistive	Make	15	12	20	1.5	1.5	1×10^5	AgNi0.15
		Break	15	12	20	1.5	1.5		

1) 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	Drop-out voltage VDC	Coil resistance x(1±10%)Ω	Power consumption W	Max. allowable overdrive voltage 1) VDC	
					23˚C	85˚C
12	7.2	1.2	225	0.8	20	14
24	14.4	2.4	360	0.8	40	28

1) Max. allowable overdrive voltage is stated with no load applied and minimum coil resistance.

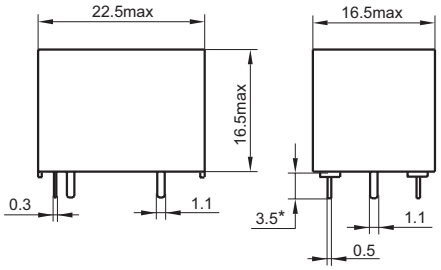
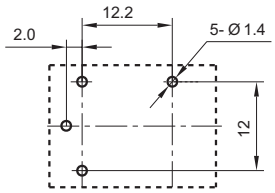
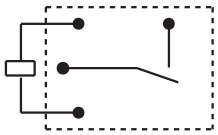
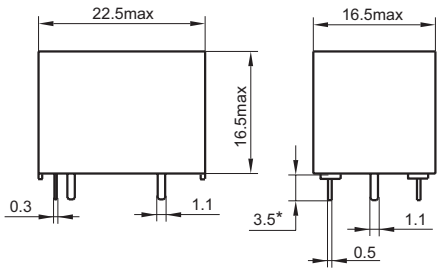
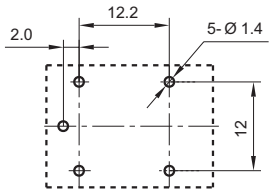
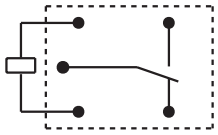
ORDERING INFORMATION

	HFKE /	012	1H	S	(XXX)
Type					
Coil voltage	**012**: 12VDC	**024**: 24VDC			
Contact arrangement	**H**: 1 Form A	**Z**: 1 Form C			
Construction	**S**: Wash tight	**Nil**: Flux proofed			
Customer special code [1]	e.g. (555) stands for RoHS & ELV compliant.				

1) HFKE is an environmental friendly product, please mark special code (555) when order.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

	Outline Dimensions	PCB Layout (Bottom view)	Wiring Diagram (Bottom view)
1A			
1C			

Notes: 1) * The additional tin top is max. 1mm;
2) The terminal vertical deviation tolerance is 0.2mm;
3) 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 ±0.3m, outline dimension >5mm, tolerance should be ±0.4mm;
4) The tolerance without indicating for PCB layout is always ±0.1mm.

Disclaimer

This datasheet is for the customers' reference. All the specifications are 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.