HF118FK

MINIATURE HIGH POWER RELAY

Features

- 8A switching capability
- 5kV dielectric strength (between coil and contacts)
- Low height: 12.5 mm
- Creepage distance >8mm
- Meeting VDE 0700, 0631 reinforce insulation
- Product in accordance to IEC 60335-1 available
- Flux proofed types
- Through-Hole Reflow Version available

CONTACT DATA

Contact arrangement	1A,1C
Contact material	See "ORDERING INFORMATION"
Contact resistance	100mΩ max.(at 1A 6VDC)
Contact rating (Res. load)	8A 250VAC/30VDC
Max. switching voltage	440VAC / 250VDC
Max. switching current	8A
Max. switching power	2000VA / 240W
Mechanical endurance	1×10^7 OPS
Electrical endurance	H type:1×10^5 OPS (8A 250VAC, Resistive load,at 85°C ,5s on 5s off)

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
Surge voltage (between coil & contacts)		10kV (1.2 / 50µs)
Operate time (at nomi. vot.)		10ms max.
Release time (at nomi. vot.)		5ms max.
Temperature rise (at nomi. Volt.)		55K max.
Shock resistance *	Functional	NC: 49m/s² NO: 98m/s²
	Destructive	980m/s²
Vibration resistance *	NC (no coil voltage)	10Hz to 55Hz 0.8mm DA
	NO	10Hz to 55Hz 1.65mm DA
Ambient temperature		-40 to 85°C
Humidity		5% to 85% RH
Termination		PCB
Unit weight		Approx. 8g
Construction		Flux proofed

Notes: 1) The data shown above are initial values.
2) * Index is not in relay length direction.

COIL

Coil power	Approx. 220mW to 290mW

COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.[1]	Drop-out Voltage VDC min.[1]	Max Allowable Voltage VDC[2]	Coil Resistance Ω
5	3.50	0.5	7.5	113 x (1±10%)
6	4.20	0.6	9.0	164 x (1±10%)
9	6.30	0.9	13.5	360 x (1±10%)
12	8.40	1.2	18.0	620 x (1±10%)
18	12.60	1.8	27.0	1295 x (1±10%)
24	16.80	2.4	36.0	2350 x (1±15%)
48[3]	33.60	4.8	72.0	8000 x (1±15%)
60[3]	42.00	6.0	90.0	12500 x (1±15%)

Notes: 1)The data show above are initial values.
2) Maximum voltage refers to the maximum voltage Which relay coil could endurance in a short period of time.
3) For products with rated voltage≥48V,measures should be taken to prevent coil overvoltage in order to protect coil in test and application(eg.Connect diodes in parallel).

SAFETY APPROVAL RATINGS

UL/CUL **(AgNi,AgSnO$_2$)**	version1,5	NO: 8A 250VAC at 85°C NO/NC: 8A 250VAC at 85°C B300 AgNi: R300
VDE **(AgSnO$_2$,AgSnO$_2$** **+Au)**	H5T.(-;G)	8A 250VAC at 85°C
	Z1T.(-;G)	8A 250VAC at 85°C
	H5T.(-;G)	AC-15(Make: 15A 250VAC COSØ = 0.7 at 85°C Break: 1.5A 250VAC COSØ = 0.4 at 85°C)
VDE **(AgNi,AgNi+Au)**	H53.(-;G)	8A 250VAC at 85°C
	Z13.(-;G)	8A 250VAC at 85°C
	H53.(-;G)	AC-15(Make: 30A 250VAC COSØ = 0.7 at 85°C Break: 3A 250VAC COSØ = 0.4 at 85°C)
	Z13.(-;G)	NO: AC-15(Make: 30A 250VAC COSØ = 0.7 at 85°C Break: 3A 250VAC COSØ = 0.4 at 85°C)

Notes: 1) All values unspecified are at room temperature.
2) Only typical loads are listed above. Other load specifications can be available upon request.

ORDERING INFORMATION

HF118FK / 12 -Z 1 T G (XXX)

Type	
Coil voltage	5, 6, 9, 12, 18, 24, 48, 60VDC
Contact arrangement	**H:** 1 Form A **Z:** 1 Form C
Version (See Wiring Diagram below)	**1:** 3.2mm 1 pole 8A, only 1 Form C **5:** 5mm 8A, only 1 Form A
Contact material	**T:** AgSnO$_2$ **3:**AgNi
Contact plating	**G:** Gold plated **Nil:** Standard
Customer special code	**XXX:**Customer special requirement **Nil:** Standard

Notes: 1)Flux proof relays cannot be used in polluted environment (with contaminations like H_2S,SO_2,NO_2,dust,etc.).
2)Water cleaning or surface process is not allowed in assembling relays on PCB.
3)For gold plated type,the min. switching current and min. switching voltage is 10mA 5VDC.
4)The customer special requirement express as special code evaluating by Hongfa. E.g.(335) standards for product in accordance
to IEC 60335-1(GWT);e.g.(253) means Through-Hole Reflow Version(valid for Flux proofed only).

Outline Dimensions

3.2mm pinning

28.5 ±0.3
10.1 ±0.3
12.5 ±0.3
±0.3
0.3
3.4 ±0.5
0.5x0.5
0.4x0.8(6 terminals)

5mm pinning

28.5 ±0.3
10.1 ±0.3
12.5 ±0.3
±0.3
0.3
3.4 ±0.5
0.5x0.5
0.4x0.8(2 terminals)
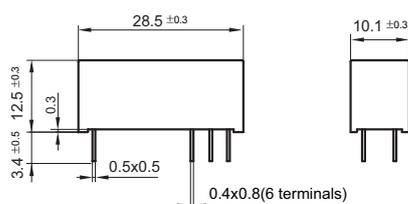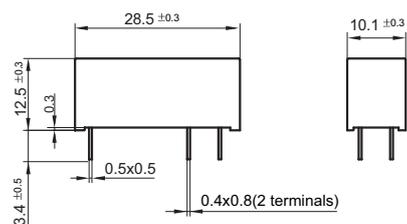
Wiring Diagram (Bottom view)

Version 1
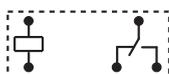
Version 5

PCB Layout (Bottom view)

Version 1

1.7
3.2
3.2
7.62
5xØ1.3
18.9

Version 5

1.7
5.04
7.62
4xØ1.3
18.9
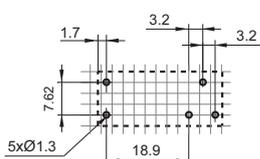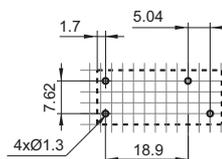
Remark: 1) The pin dimension of the product outline drawing is the size before tinning (it will become larger after tinning), and the mounting hole size is the recommended design size of the PCB board hole. The specific PCB board hole design size can be mapped and adjusted according to the actual product.
2) 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 ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
3) The tolerance without indicating for PCB layout is always ±0.1mm.
4) The width of the gridding is 2.54mm.

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER
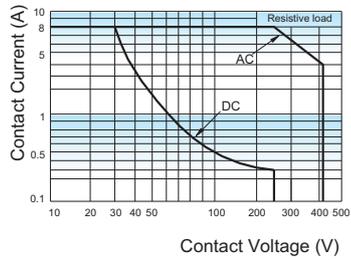
### REFLOW WELDING TEMPERATURE
(Reflow soldering version)
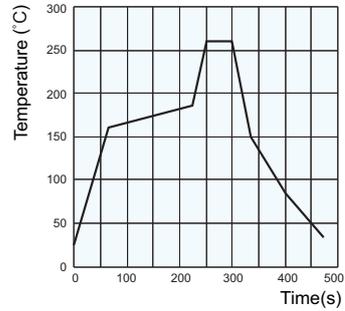
ENDURANCE CURVE
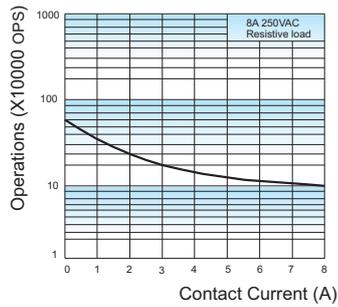
Test conditions:
NO,Resistive load,250VAC
Flux proofed,85°C, 5s on 5s off.

COIL OPERATING RANGE (DC) *
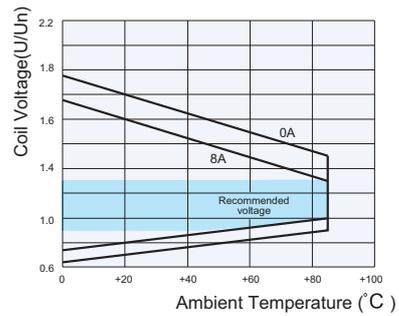
Notes: * The use of a relay with an energising voltage
other than the rated coil voltage may lead to
reduced electrical life.
An energising voltage over the abver range
may damage the insulation of relay coil.