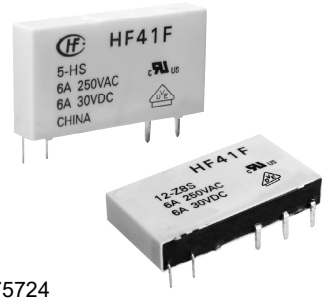
HF41F SUBMINIATURE POWER RELAY

File No.: E133481

File No.: 40020043

File No.: CQC17002175724



Features

- Slim size (width 5mm)
- 6A switching capability 4kV dielectric strength (between coil and contacts)
- Surge voltage up to 6kV (between coil and contacts)
- Meeting VDE 0700, 0631 reinforce insulation
- High sensitive: Approx.170mW
- Sockets available
- 1 Form A and 1 Form C configurations

RoHS compliant

CONTACT DATA

Contact arrangement	1A, 1C
Contact resistance 1)	No gold plated:100mΩ max. (at 1A 6VDC) Gold plated: 30mΩ max. (at 1A 6VDC)
Contact material	$AgSnO_2$, AgNi
Contact rating (Res. load)	6A 250VAC / 30VDC
Max. switching voltage	400VAC / 125VDC
Max. switching current	6A
Max. switching power	1500VA / 180W
Mechanical endurance	1 x 10^7OPS
Electrical endurance	H type: 6 x 10^4OPS (6A 250VAC/30VDC, Resistive load, AgNi, at 85°C, 1s on 9s off) Z type: 3 x 10^4OPS (NO, 6A 250VAC/30VDC, Resistive load, AgNi, at 85°C, 1s on 9s off) 1 x 10^4OPS (NC, 6A 250VAC/30VDC, Resistive load, AgNi, at 85°C, 1s on 9s off)

Notes: 1) The data shown above are initial values.

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1 min
	Between open contacts	1000VAC 1 min
Operate time (at rated.volt.)		8ms max.
Release time (at rated.volt.)		4ms max.
Shock resistance*1)	Functional	49m/s²
	Destructive	980m/s²
Vibration resistance*1)		10Hz to 55Hz 1mm DA
Humidity		5% to 85% RH
Ambient temperature		-40°C to 85°C
Termination		PCB
Unit weight		Approx. 5g
Construction		Plastic sealed, Flux proofed

Notes: 1) *Index is that of relay without socket and is not in relay length direction.
2) The data shown above are initial values.
3) Please find coil temperature curve in the characteristic curves below.
4) Please do not install a SPDT(1 Form C) type relay on either of the smallest sides or facing downward.
5) UL insulation system: Class A.

COIL

Coil power	5VDC to 24VDC: Approx. 170mW 48VDC, 60VDC: Approx. 210mW

COIL DATA at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.2)	Drop-out Voltage VDC min.2)	Max. Voltage VDC3)	Coil Resistance Ω
5	3.75	0.25	7.5	147 x (1±10%)
6	4.50	0.30	9.0	212 x (1±10%)
9	6.75	0.45	13.5	476 x (1±10%)
12	9.00	0.60	18	848 x (1±10%)
18	13.5	0.90	27	1906 x (1±15%)
24	18.0	1.20	36	3390 x (1±15%)
48 4)	36.0	2.40	72	10600 x (1±15%)
60 4)	45.0	3.00	90	16600 x (1±15%)

Notes: 1) When require pick-up voltage≤70% nominal voltage, special order allowed .
2) The data shown above are initial values.
3) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.
4) 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	6A 30VDC at 85°C 6A 277VAC at 85°C R300 B300
VDE	6A 30VDC at 85°C 6A 250VAC 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

	HF41F /	12	-H	8	S	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 [1]	**8:** Flat pack version	**Nil:** Vertical version
Construction[2)3)]	**S:** Plastic sealed	**Nil:** Flux proofed
Contact material	**T:** $AgSnO_2$	**Nil:** AgNi
Contact plating[4)]	**G:** Gold plated	**Nil:** No gold plated
Special code[5)]	**XXX:** Customer special requirement	**Nil:** Standard

Notes: 1) We recommend flux proofed types for the flat pack version.
2) We recommend flux proofed types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust, etc.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust, etc.).
3) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
4) For gold plated type, the min. switching current and min. switching voltage is 10mA 5VDC.
5) The customer special requirement express as special code after evaluating by Hongfa. e.g. (210) stands for pick-up voltage less than 70% of norminal voltage. e.g. (414) stands for wide coil pin type.
6) Standard tube packing length is 550mm. Any special requirement needed, please contact us for more details.
7) For products that should meet the explosion-proof requirements of "IEC 60079 series",please note [Ex] after the specification while placing orders.Not all products have explosion-proof certification,so please contact us if necessary, in order to select the suitable products.

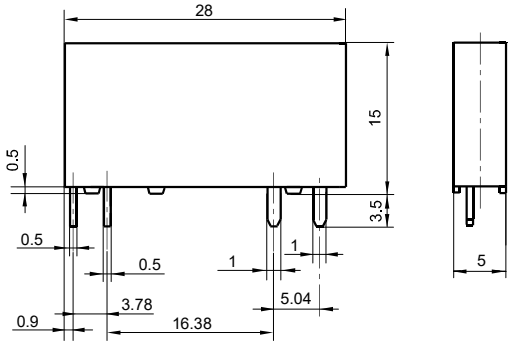
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

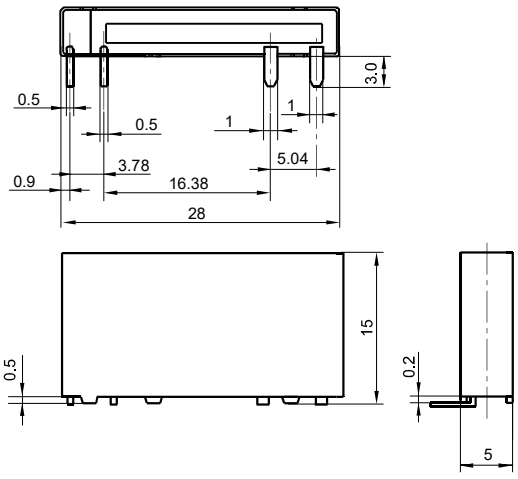
Outline Dimensions

1 Form A

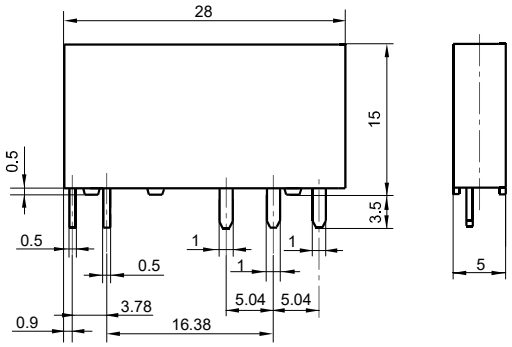
Vertical version

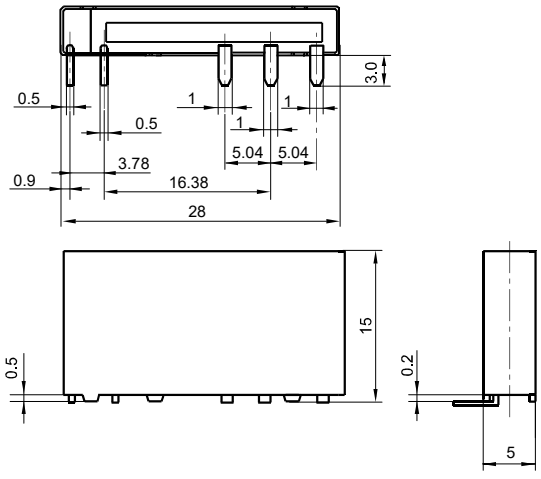


Flat pack version



1 Form C





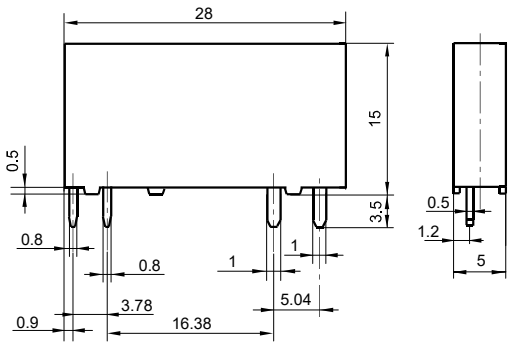
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

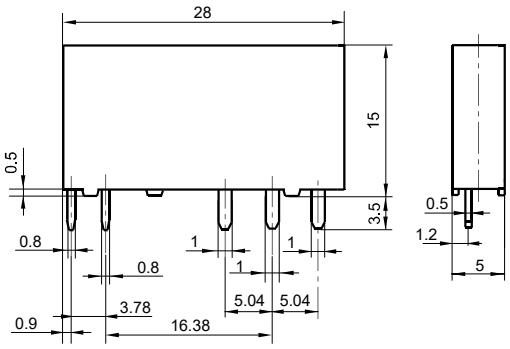
Outline Dimensions

1 Form A

Special code: (414)



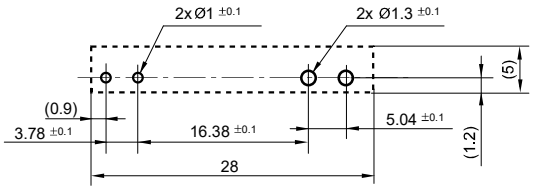
1 Form C



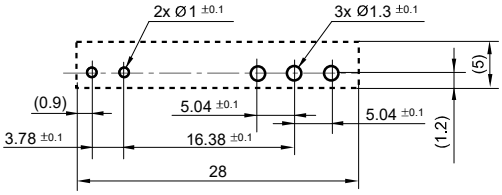
PCB Layout (Bottom view)

1 Form A

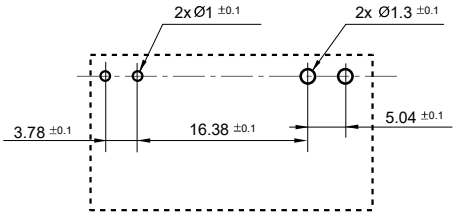
Vertical version

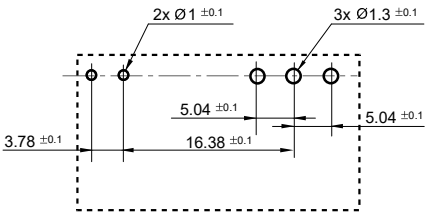


1 Form C

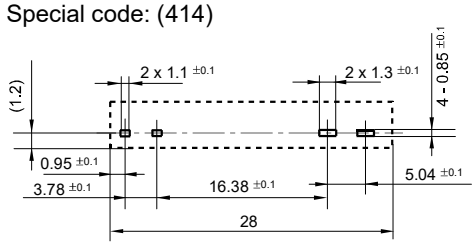


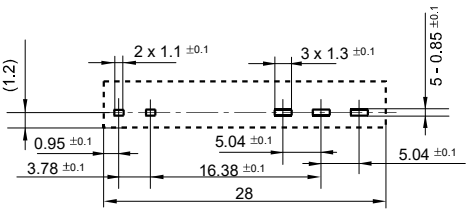
Flat pack version





Special code: (414)

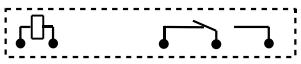




Wiring Diagram (Bottom view)

1 Form A

1 Form C

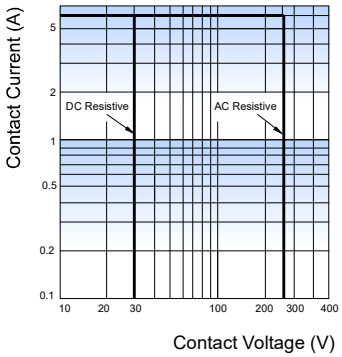


Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

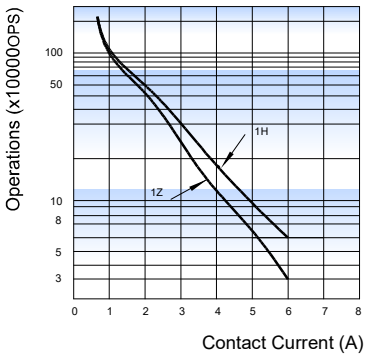
2) The tolerance without indicating for PCB layouts is always ±0.1mm.

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



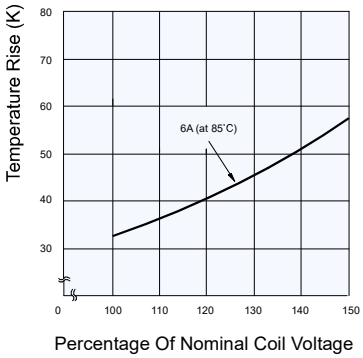
ENDURANCE CURVE



Test conditions:

NO, AgNi, Resistive load, 250VAC,
Flux proofed, Room temp., 1s on 9s off.

COIL TEMPERATURE RISE



Test conditions:

6A 85℃
(Typical curve of 24VDC standard type)