HF14FF MINIATURE HIGH POWER RELAY

c UL us
File No.:E134517

File No.:R50140759

CQC
File No.:CQC09002035073

Features

- 10A switching capability
- 5kV dielectric strength (between coil and contacts)
- Sockets available
- Plastic sealed and dust protected types available
- UL insulation system: Class F available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 13.0 x 26.0) mm

CONTACT DATA

Contact arrangement	1A, 1C
Contact resistance	50mΩ max.(at 1A 24VDC)
Contact material	$AgSnO_2$, AgNi, AgCdO
Contact rating	Resistive: 10A 277VAC/30VDC TV-5 120VAC
Max. switching voltage	277VAC / 30VDC
Max. switching current	10A
Max. switching power	2770VA / 300W
Mechanical endurance	1 x 10^7OPS
Electrical endurance	1 x 10^5OPS (See approval reports for more details)

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
Operate time (at nomi. volt.)		15ms max.
Release time (at nomi. volt.)		5ms max.
Vibration resistance		10Hz to 55Hz 1.5mm DA
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Humidity		5% to 85% RH
Ambient temperature		-40˚C to 70˚C
Termination		PCB
Unit weight		Approx. 18g
Construction		Plastic sealed, Dust protected

Notes: 1) The data shown above are initial values.
2) Please find coil temperature curve in the characteristic curves below.
3) UL insulation system: Class F, Class B.

COIL

Coil power	Approx. 530mW

COIL DATA at 23˚C

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Allowable Voltage VDC	Coil Resistance Ω
3	2.25	0.3	4.2	17 x (1±10%)
5	3.75	0.5	7.0	47 x (1±10%)
6	4.50	0.6	8.4	68 x (1±10%)
9	6.75	0.9	12.6	160 x (1±10%)
12	9.00	1.2	16.8	275 x (1±10%)
18	13.5	1.8	25.2	620 x (1±10%)
24	18.0	2.4	33.6	1100 x (1±10%)
48	36.0	4.8	67.2	4170 x (1±10%)
60	45.0	6.0	84.0	7000 x (1±10%)

Notes: When requiring pick-up voltage < 75% of nominal voltage, special order allowed.

SAFETY APPROVAL RATINGS

UL/CUL	AgCdO	1 Form A	TV-5 120VAC 10A 277VAC General purpose 10A 30VDC Resistive 1/3HP 250VAC 1/4HP 125VAC
		1 Form C	TV-5 120VAC 10A 277VAC General purpose 10A 30VDC Resistive 1/3HP 250VAC NO:1/4HP 125VAC
	$AgSnO_2$ AgNi		10A 277VAC General purpose 10A 30VDC Resistive 1/3HP 250VAC 1/4HP 125VAC TV-5 120VAC
TÜV	AgCdO $AgSnO_2$		10A 250VAC 10A 30VDC

Notes: Only some typical ratings are listed above. If more details are required, please contact us.

ORDERING INFORMATION

	HF14FF /	012	-1H	S	T	F	(XXX)

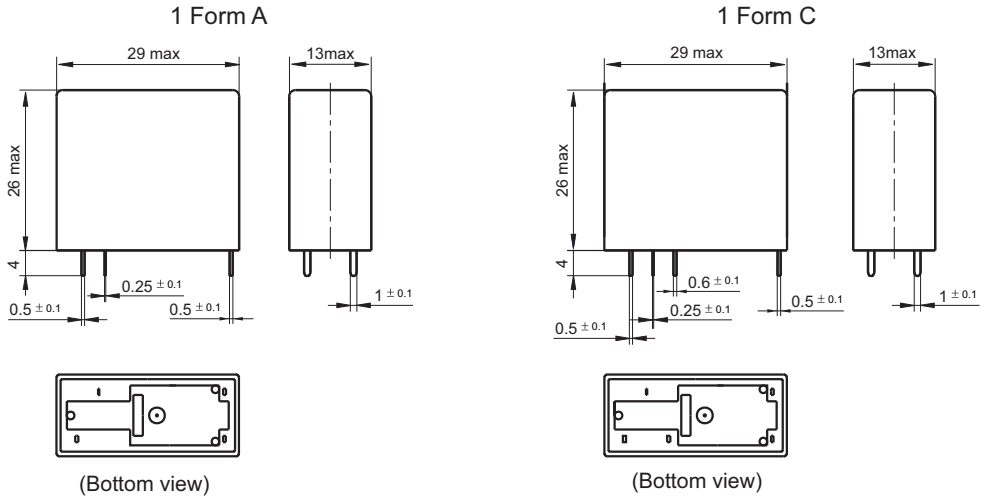
Type	
Coil voltage	3, 5, 6, 9, 12, 18, 24, 48, 60VDC
Contact arrangement	**1H:** 1 Form A **1Z:** 1 Form C
Construction 1)	**S:** Plastic sealed **Nil:** Dust protected
Contact material	**T:** $AgSnO_2$ **3:** AgNi **Nil:** AgCdO
Insulation standard	**F:** Class F **Nil:** Class B
Customer special code	

Notes: 1) We recommend dust protected 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).
If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.
2) The standard type is made of black cover. If smoke cover is required, please add a special suffix (611) when ordering. Please take note that smoke cover is only availabe for dust protected type.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions



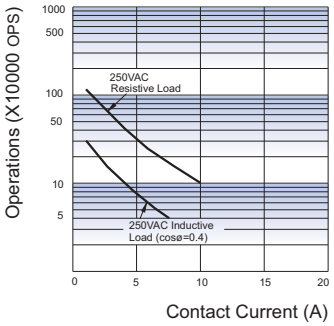
Wiring Diagram
(Bottom view)

PCB Layout
(Bottom view)

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 layout is always ±0.1mm.
3) The width of the gridding is 2.5mm.

CHARACTERISTIC CURVES

ENDURANCE CURVE



COIL TEMPERATURE RISE