HF243F SUPPLY RELAY

File No.: E133481

File No.: R 50725222

Features

- Equipped with auxiliary monitored contacts (According to Clause L.8.4 of IEC 60947-5-1)
- 3.0 mm contact gap
- Main contacts are capable of withstanding short-circuit current
- Withstand voltage: 4 kV (between main contacts and coil)
- Clearance between main contacts and coil/auxiliary contacts≥8.0 mm
- Insulation system: Class F

RoHS compliant

CONTACT DATA

Contact arrangement	1H(Main contact)+1B(Auxiliary contact)
Contact resistance	Main contact:10mΩ max.(6VDC 20A) Auxiliary contact:100mΩ max.(6VDC 1A)
Contact Material	Silver alloy
Contact Gap	Main contact:3.0mm max.
Contact rating (resistance)	Main contact:32A 480VAC Auxiliary contact:1A 30VDC
Max. switching voltage	Main contact:480VAC Auxiliary contact:30VDC
Max. switching current	Main contact:32A Auxiliary contact:1A
Max.switching power	Main contact:15360VA Auxiliary contact:30W
Mechanical endurance	1×10^5OPS
Electrical endurance	Main contact:≥5×10^4OPS (85℃,1s on 9s off, 32A 480VAC,Resistive load) Main contact:≥5×10^4OPS (85℃,1s on9s off, Making 20A,Making 50A, breaking 20A 480VAC,Resistive load)

Notes: 1) The data shown above are initial values

COIL

Coil power	Approx.2.1W
Holding voltage	35% to 85%U_N(at 23℃) 40% to 75%U_N(at 85℃)

Notes: 1) The coil holding voltage is the voltage applied to coil after applying the rated voltage for 100ms.

COIL DATA at 23℃

Nominal Voltage VDC	Pick-up Voltage[1] VDC max.	Drop-out Voltage[1] VDC min.	Max. Voltage[2] VDC	Coil Resistance Ω
5	3.75	0.25	5.5	11.8×(1±10%)
6	4.5	0.3	6.6	17×(1±10%)
9	6.75	0.45	9.9	38.4×(1±10%)
12	9	0.6	13.2	68.5×(1±10%)
18	13.5	0.9	19.8	154.3×(1±10%)
24	18	1.2	26.4	274×(1±10%)
36	27	1.8	39.6	617×(1±10%)
48	36	2.4	52.8	1096×(1±10%)

Notes: 1) The data shown above are initial values.
2) Max. voltage refers to the maximun voltage which relay coil could endure in a short period of time.

CHARACTERISTICS

Insulation resistance		1000MΩ(500VDC)
Dielectric strength	Between open main contacts	2500VAC 1min
	Between coil & main contact	4000VAC 1min
	Between auxiliary contact & main contact	4000VAC 1min
	Between coil & auxiliary contact	500VAC 1min
Surge Voltage (Between coil/auxiliary contacts and main contacts)		10kV(1.2/50μs)
Short Circuit Resistance Current (Main contact)		≥1.5kA 6kA²s (According to IEC 62752:2016) ≥1.85kA 4.5kA²s (According to Clause 9.11.2 of IEC 62955:2018)
Operate time (at rated. volt.)		20ms max.
Release time (at rated. volt.,No FW Diode)		10ms max.
Temperature rise		70K max. (Rated voltage is reduced to holding voltage, at 85℃)
Shock resistance	Functional	Main contact:10g
	Destructive	100g
Vibration resistance		10Hz to 55Hz 1.5mm DA
Humidity		5% to 85%RH
Ambient temperature		-40℃ to 85℃
Termination		PCB
Unit weight		Approx. 35g
Construction		Flux proofed(RT Ⅱ)

SAFETY APPROVAL RATINGS

UL/CUL	NO: 32A 480VAC,85℃ NO: Making 20A, Carrying 50A Breaking 20A,480VAC,85℃ NO: 40A 480VAC,85℃ NC: 1A 30VDC,85℃
TÜV	NO: 32A 480VAC,85℃ NO: Making 20A, Carrying 50A Breaking 20A,480VAC,85℃ NO: 40A 480VAC,85℃ NC: 1A 30VDC,85℃

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

	HF243F-1/	12	-H	B	S	T	F	(XXX)
Type	HF243F HF243F-1 HF243F-2							
Coil voltage	5, 6, 9, 12, 24, 36, 48VDC							
Main contact arrangement	**H:** 1 Form A							
Auxiliary contact arrangement	**B:** 1 Form B(For HF243F & HF243F-1) **Nil:** Without auxiliary contact (For HF243F & HF243F-2)							
Construction[1)2)3)]	**S:** Plastic sealed **Nil:** Flux proofed							
Main contact material	**T:** $AgSnO_2$							
Insulation class	**F:** Class F							
Special code[4)]	**XXX:** Customer special requirement **Nil:** Standard							

Notes:1) Please avoid using the relay in an environment containing organic silicon,otherwise the entry of organic silicon into the relay may acceleration contact failure.If there are harmful substances and elements such as water vapor, H_2S, SO_2, NO_2,Cl,P,dust,etc.， as well as unknown harmful substances and elements,In the use of environmental gases,it may lead to increased contact resistance and poor contact during the use of relays.In the above situations,please control the materials that produce harmful substances and elements or use plastic sealed type， and arrange relevant tests to confirm that it meet the requirements for actual use.

2) Water clearing or surface process is not suggested after the flux-proofed relays are assembled on PCB.

3) For plastic sealed type, the venting-hole should be opened in electrical endurance test.

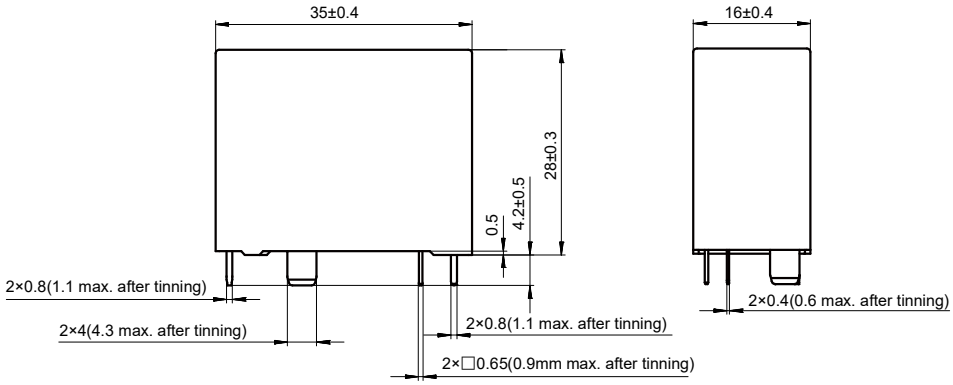
4) The customer special requirement express as special code after evaluating by Hongfa.e.g.(BA9): Meets IEC 62368 electrical endurance requirements; (991): Auxiliary contacts with gold plating.

OUTLINE DIMENSIONS,WIRING DIAGRAM AND PC BOARD LAYOUT

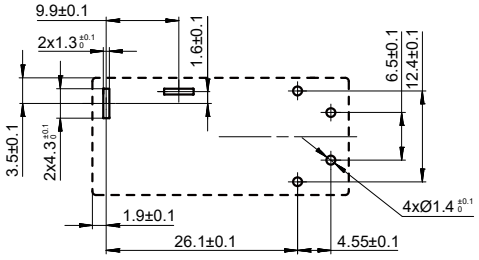
Unit：mm

HF243F Standard

Outline Dimensions



PCB layout
(Bottom view)



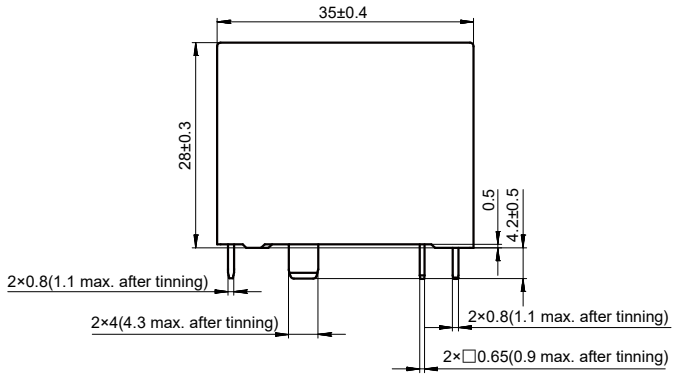
Wiring Diagram
(Bottom view)

OUTLINE DIMENSIONS,WIRING DIAGRAM AND PC BOARD LAYOUT

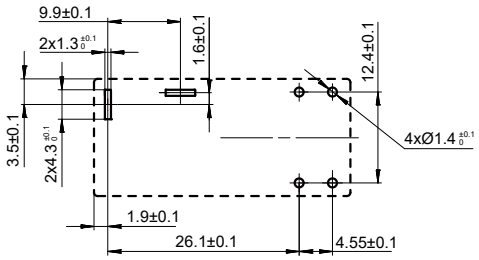
Unit：mm

HF243F-1 Standard

Outline Dimensions



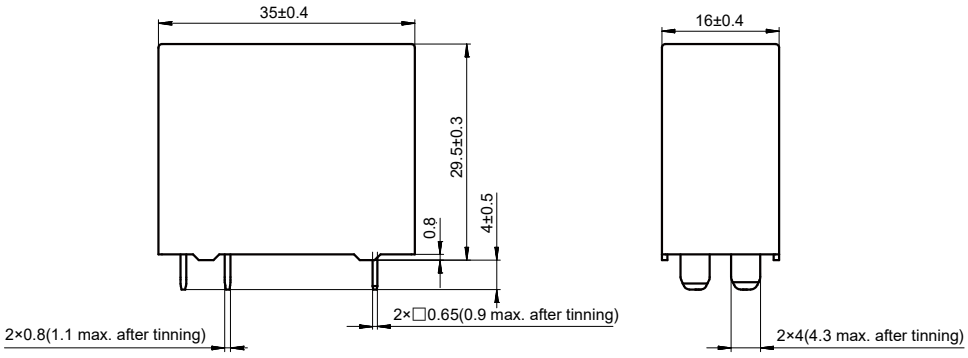
PCB layout
(Bottom view)



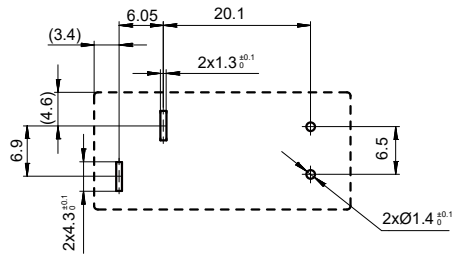
Wiring Diagram
(Bottom view)

HF243F-2 Standard

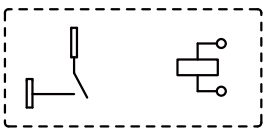
Outline Dimensions



PCB layout
(Bottom view)



Wiring Diagram
(Bottom view)

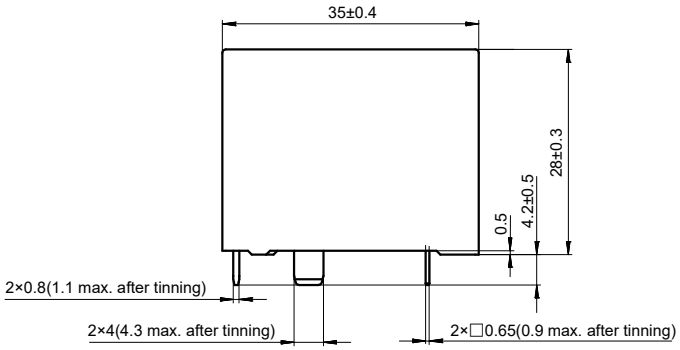


OUTLINE DIMENSIONS,WIRING DIAGRAM AND PC BOARD LAYOUT

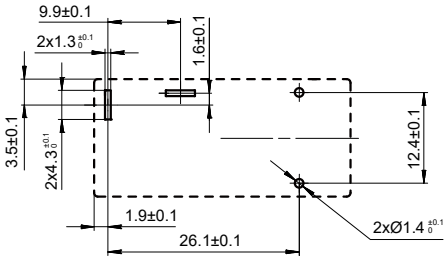
Unit：mm

HF243F No Auxiliary Contacts

Outline Dimensions



PCB layout
(Bottom view)



Wiring Diagram
(Bottom view)

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 and ≤30mm ,tolerance should be ±0.4mm; outline dimension ＞30mm, tolerance should be ±0.6mm.

3) The tolerance without indicating for PCB layout is always ±0.1mm.

Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications 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.

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