

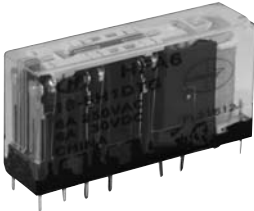


HFA6

SAFETY RELAY
(RELAY WITH FORCIBLY GUIDED CONTACTS)


File No.:E134517


File No.:B120553286004



Features

- Multi contact arrangements: 5NO+1NC, 4NO+2NC, 3NO+3NC
- Forcibly guided contacts according to EN50205
- 6A switching capability
- Low input power: 500mW
- High insulation capability: 10kV surge voltage between input and output
- UL insulation system: Class F available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (50.0 x 13.0 x 24.0) mm

CONTACT DATA

| | |
|--|--|
| Contact arrangement | 5NO+1NC (5H1D type) |
| | 4NO+2NC (4H2D type) |
| | 3NO+3NC (3H3D type) |
| Forcibly guided contacts Type (according to EN50205) | Type A |
| Contact resistance | 100mΩ (at 1A 6VDC) |
| Contact material | AgSnO ₂ |
| Contact rating (Res. load) | 6A 250VAC / 30VDC |
| Max. switching voltage | 400VAC / 30VDC |
| Max. switching current | 6A |
| Max. switching power | 1500VA /180W |
| Typ. applicable load | AC-15: 1.5A /240VAC (COSØ=0.3) DC-13: 1A / 24VDC (L/R=48ms) |
| Electrical endurance ¹⁾ | 1 x 10 ⁵ ops |
| Mechanical endurance | 1 x 10 ⁷ ops |

Notes: 1) Applicable for rated load only on 1 NO or 1 NC, 5s ON/5s OFF.

COIL

| | |
|------------|---------------|
| Coil power | Approx. 500mW |
|------------|---------------|

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 |
|---------------------|--------------------------|---------------------------|----------------------------|-------------------|
| 6 | 4.5 | 0.6 | 6.6 | 72 x (1±10%) |
| 9 | 6.8 | 0.9 | 9.9 | 162 x (1±10%) |
| 12 | 9.0 | 1.2 | 13.2 | 288 x (1±10%) |
| 18 | 13.5 | 1.8 | 21.78 | 648 x (1±10%) |
| 24 | 18.0 | 2.4 | 26.4 | 1152 x (1±10%) |
| 36 | 27.0 | 3.6 | 39.6 | 2592 x (1±10%) |
| 48 | 36.0 | 4.8 | 52.8 | 4608 x (1±10%) |

CHARACTERISTICS

| | | |
|---------------------------------|-------------------------|---|
| Insulation resistance | | 1000MΩ (at 500VDC) |
| Dielectric strength | Between coil & contacts | 4000VAC 1 min |
| | Between open contacts | 1500VAC 1 min |
| | Between contact sets | 2500VAC 1 min (11-12/13-14) 4000VAC 1 min (Other) |
| Surge voltage | Between coil & contacts | 10kV (1.2 / 50μs) |
| | Between contact sets | 5kV (1.2 / 50μs) |
| Operate time (at rated voltage) | | 20ms max. |
| Release time (at rated voltage) | | 20ms max. |
| Vibration resistance | | NO/NC:10Hz to 55Hz 1.5mm DA NO:55Hz to 200Hz, 98m/s ² NC:55Hz to 200Hz, 49m/s ² |
| Shock resistance | Functional | 196m/s ² |
| | Destructive | 980m/s ² |
| Creepage distance | Between coil & contacts | 8mm |
| | Between contacts | 5.5mm |
| Clearance distance | Between coil & contacts | 8mm |
| | Between contacts | 5.5mm |
| Humidity | | 5% to 85% RH |
| Ambient temperature | | -40°C to 85°C |
| Termination | | PCB |
| Unit weight | | Approx. 23g |
| Construction | | Flux proofed |

Notes: 1) UL insulation system: Class F, Class B.

SAFETY APPROVAL RATINGS

| | |
|--------|--|
| UL/CUL | 6A 277VAC / 250VAC / 125VAC at 85°C |
| | 6A 30VDC at 85°C |
| | Pilot duty: 1.5A 240VAC at 40°C 3A 120VAC at 40°C |
| TÜV | 6A 277VAC / 30VDC |
| | 1.5A /2A 240VAC(AC-15) |

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

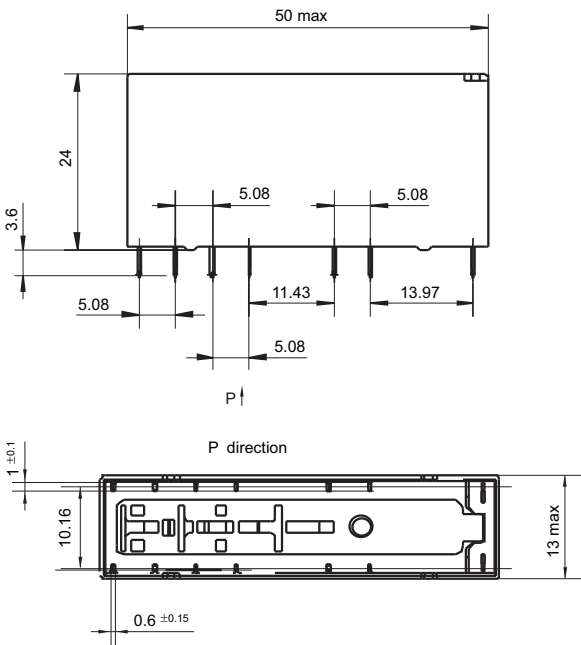
| ORDERING INFORMATION | | | | | | | |
|-----------------------|--------|---|----|-------|---|---|---------|
| Type | HFA6 / | | 24 | -5H1D | T | G | F (XXX) |
| | | | | | | | |
| Coil voltage | | 6, 9, 12, 18, 24, 36, 48VDC | | | | | |
| Contact arrangement | | 5H1D: 5NO+1NC 4H2D: 4NO+2NC 3H3D: 3NO+3NC | | | | | |
| Contact material | | T: AgSnO ₂ | | | | | |
| Contact plating | | G: Gold plated | | | | | |
| Insulation class | | F: Class F Nil: Class B | | | | | |
| Customer special code | | | | | | | |

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

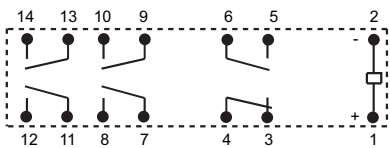
Unit: mm

HFA6 / □□ - 5H1DT□ (□□□)

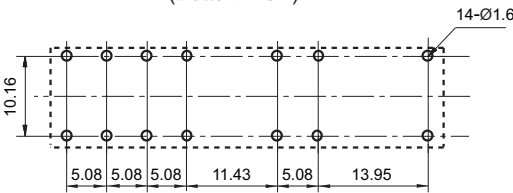
Outline Dimensions



Wiring Diagram
(Bottom view)



PCB Layout
(Bottom view)

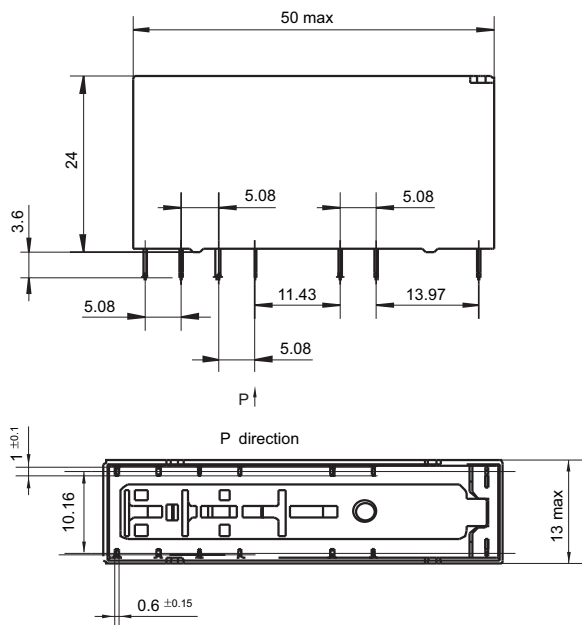


OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

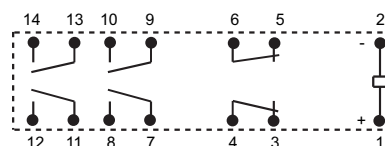
HFA6/ □□ - 4H2DT□ (□□□)

Outline Dimensions



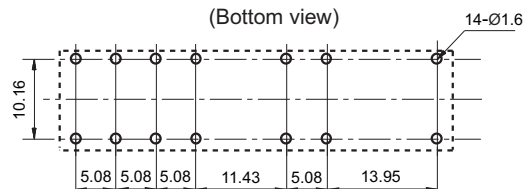
Wiring Diagram

(Bottom view)



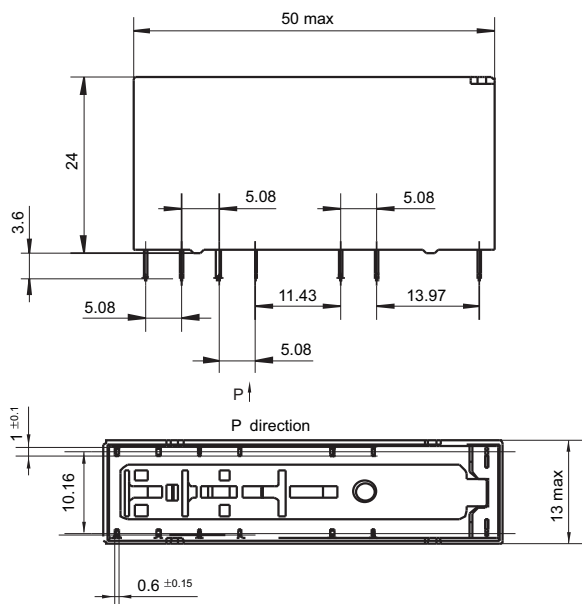
PCB Layout

(Bottom view)



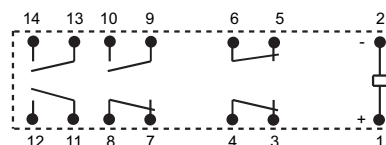
HFA6/ □□ - 3H3DT□ (□□□)

Outline Dimensions



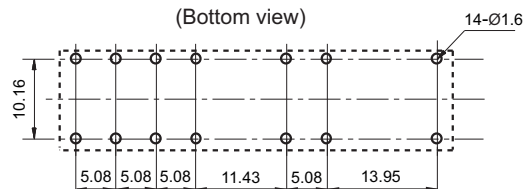
Wiring Diagram

(Bottom view)



PCB Layout

(Bottom view)



Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.
2) The tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.

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.

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