

HF2150/HF2151

MINIATURE HIGH POWER RELAY



File No.:E134517



File No.:CQC08002027546



Features

- 30A switching capability
- PCB coil terminals, ideal for heavyduty load
- Heavy load up to 7,200VA
- Plastic sealed and flux proofed type available
- Class F insulation available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (31.8 x 27.0 x 19.1) mm

CONTACT DATA

| | | | | |
|----------------------------|--|-------------------------|-------------------------|-------------------------|
| Contact arrangement | 1A | 1B | 1C(NO) | 1C(NC) |
| Contact resistance | 50mΩ (at 1A 24VDC) | | | |
| Contact material | AgCdO | | | |
| Contact rating (Res. load) | 30A 240VAC 20A 30VDC | 15A 240VAC 10A 30VDC | 20A 240VAC 20A 30VDC | 10A 240VAC 10A 30VDC |
| Max. switching power | 7200VA 600W | 3600VA 300W | 4800VA 600W | 2400VA 300W |
| Max. switching voltage | 277VAC / 30VDC | | | |
| Max. switching current | 40A | 15A | 20A | 10A |
| Mechanical endurance | 1 x 10 ⁷ OPS | | | |
| Electrical endurance | 1 x 10 ⁵ OPS ¹⁾ (See approval reports for more details) | | | |

CHARACTERISTICS

| | | |
|-------------------------------|-----------------------------------|--|
| Insulation resistance | 1000MΩ (at 500VDC) | |
| Dielectric strength | Between coil & contacts | HF2150: 2500VAC 1min HF2151: 2000VAC 1min |
| | Between open contacts | 1500VAC 1min |
| Operate time (at nomi. volt.) | 15ms max. | |
| Release time (at nomi. volt.) | 10ms max. | |
| Ambient temperature | -55°C to 85°C | |
| Shock resistance | Functional | 98m/s ² |
| | Destructive | 980m/s ² |
| Vibration resistance | 10Hz to 55Hz 1.5mm DA | |
| Humidity | 98% RH, 40°C | |
| Termination | PCB | |
| Unit weight | Approx. 35g | |
| Construction | Plastic sealed, Dust protected | |

Notes: 1) Typical rating and electrical endurance: at 30A 240VAC, resistive, on & off: 1:9, 100k cycles, 1 Form A, please open the vent hole after welding and cleaning.

2) The data shown above are initial values.

3) Please find coil temperature curve in the characteristic curves below.

COIL

Coil power Approx. 900mW

COIL DATA

at 23°C

| Nominal Voltage VDC | Pick-up Voltage VDC | Drop-out Voltage VDC | Max. Allowable Voltage VDC | Coil Resistance Ω |
|---------------------|---------------------|----------------------|----------------------------|-------------------|
| 5 | 3.75 | 0.5 | 6.5 | 27 x (1±10%) |
| 6 | 4.50 | 0.6 | 7.8 | 40 x (1±10%) |
| 9 | 6.75 | 0.9 | 11.7 | 97 x (1±10%) |
| 12 | 9.00 | 1.2 | 15.6 | 155 x (1±10%) |
| 15 | 11.25 | 1.5 | 19.5 | 256 x (1±10%) |
| 18 | 13.50 | 1.8 | 23.4 | 380 x (1±10%) |
| 24 | 18.00 | 2.4 | 31.2 | 660 x (1±10%) |
| 48 | 36.00 | 4.8 | 62.4 | 2560 x (1±10%) |
| 70 | 52.50 | 7.0 | 91.0 | 5500 x (1±10%) |
| 110 | 82.50 | 11.0 | 143.0 | 13450 x (1±10%) |



HONGFA RELAY

ISO9001, ISO/TS16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2010 Rev. 1.00

SAFETY APPROVAL RATINGS

UL/CUL

| Load type | Volts | 1 Form A | 1 Form B | 1 Form C (NO) | 1 Form C (NC) |
|---|----------------|------------------|--------------|------------------|---------------|
| General purpose | 125/240VAC | 30A | 15A | 30A | 15A |
| | 277VAC | 30A | 30A | 30A | 30A |
| Resistive | 125/240VAC | 30A | 15A | -- | -- |
| | 30VDC | 20A | 10A | 20A | 10A |
| | 277VAC | 20A | -- | -- | -- |
| | 240VAC | 15A | -- | -- | -- |
| | 250VAC | 40A | -- | 40A | -- |
| Ballast | 125/240/277VAC | 6A | 3A | 6A | 3A |
| Pilot duty | 125VAC | 800VA | 290VA | 800VA | 290VA |
| | 125VAC | 690VA | -- | 690VA | -- |
| | 125VAC | 800VA | -- | 800VA | -- |
| | 240VAC | 1152VA | 768VA | 1152VA | 768VA |
| | 277VAC | 764VA | -- | 764VA | -- |
| Motor load | 125VAC | 1HP | 1/4HP | 1HP | 1/4HP |
| | 240VAC | 2HP | 1HP | 2HP | 1HP |
| | 125VAC | 1HP | -- | 1HP | -- |
| | 125/277VAC | 3/4HP | -- | 3/4HP | -- |
| Definite purpose (LRA-loaded rotor) (FLA-full load) | 120VAC | 82.8LRA, 13.8FLA | -- | 82.8LRA, 13.8FLA | -- |
| | 125VAC | 96LRA, 30FLA | 33LRA, 10FLA | 60LRA, 20FLA | 33LRA, 10FLA |
| | 125VAC | 60LRA, 20FLA | 30LRA, 12FLA | 60LRA, 20FLA | 30LRA, 12FLA |
| | 125VAC | 82.8LRA, 27FLA | -- | 82.8LRA, 27FLA | -- |
| | 240VAC | 80LRA, 30FLA | 33LRA, 10FLA | 60LRA, 20FLA | 33LRA, 10FLA |
| | 240VAC | 41.4LRA, 6.9FLA | -- | 41.4LRA, 6.9FLA | -- |
| | 277VAC | 60LRA, 20FLA | -- | 60LRA, 20FLA | -- |
| Tungsten | 125VAC | 15A | -- | 15A | -- |
| | 240VAC | 5A | -- | 5A | 3A |
| | 120VAC | -- | 3A | -- | -- |
| | 240VAC | -- | 3A | -- | -- |

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

ORDERING INFORMATION

| | | | | | | |
|-----------------------------------|--|------------|---------------------|----------|----------|--------------|
| | HF2150 | -1A | -12D | E | F | (XXX) |
| Type | HF2151 | | | | | |
| Contact arrangement | 1A: 1 Form A 1B: 1 Form B 1C: 1 Form C | | | | | |
| Coil voltage | 5, 6, 9, 12, 15, 18, 24, 48, 70, 110VDC | | | | | |
| Construction ¹⁾ | E: Plastic sealed | | Nil: Dust protected | | | |
| 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 H₂S, SO₂, NO₂, dust, etc.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H₂S, SO₂, NO₂, dust, etc.). If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.
 - 2) To avoid using relays under strong magnetic field which will change the parameters of relays such as pick-up voltage and drop-out voltage.
 - 3) Relays may be damaged because of falling or when shocking conditions exceed the requirement.
 - 4) Regarding the plastic sealed relay, we should leave it cooling naturally until below 40°C after welding, then clean it and deal with coating, remarkably the temperature of solvents should also be controlled below 40°C. Please avoid cleaning the relay by ultrasonic, avoid using the solvents like gasoline, Freon, and so on, which would affect the configuration of relay or influence the environment.
 - 5) About preferable condition of operation, storage and transportation, please refer to "Explanation to terminology and guidelines of relay".

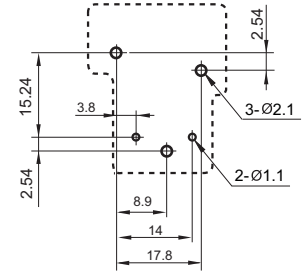
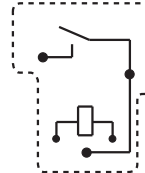
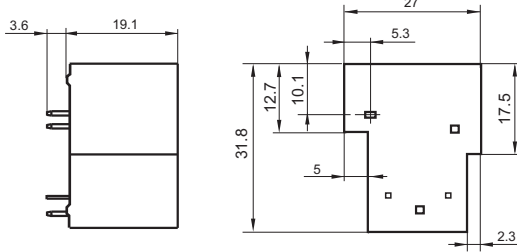
1 Form A

Outline Dimensions

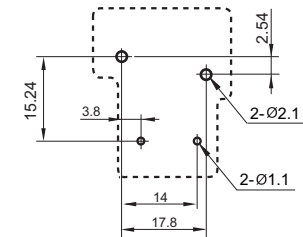
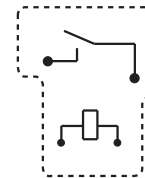
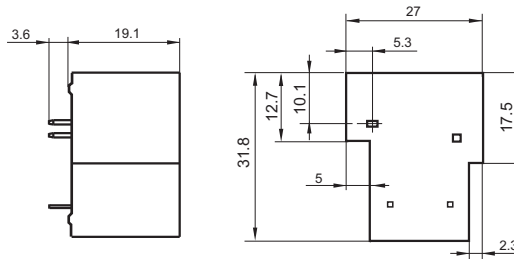
Wiring Diagram
(Bottom view)

PCB Layout
(Bottom view)

HF2151

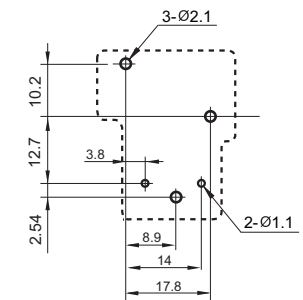
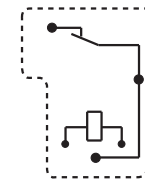
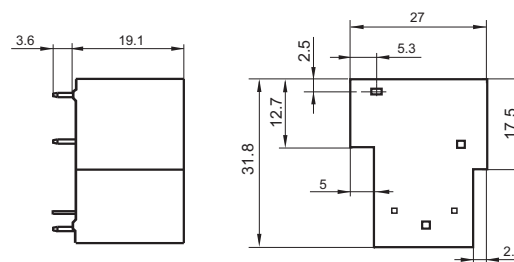


HF2150

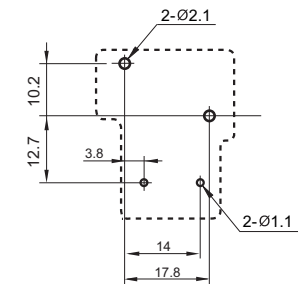
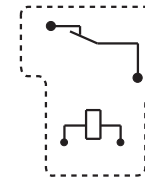
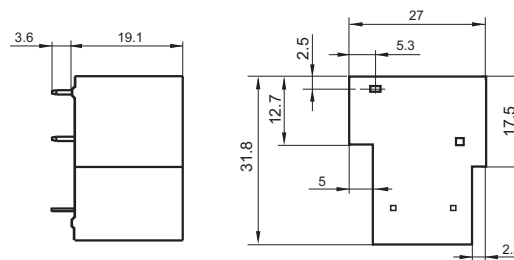


1 Form B

HF2151



HF2150



OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

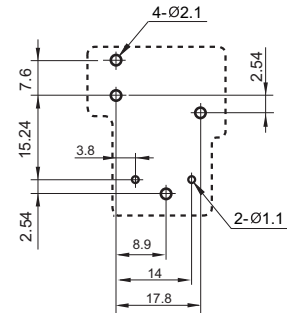
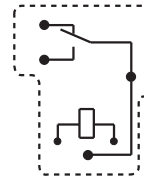
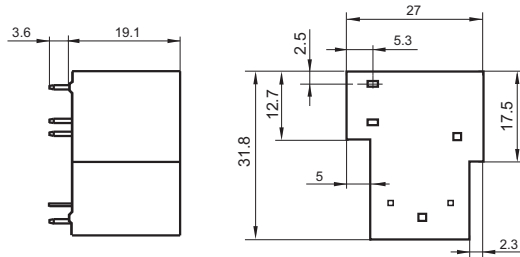
1 Form C

Outline Dimensions

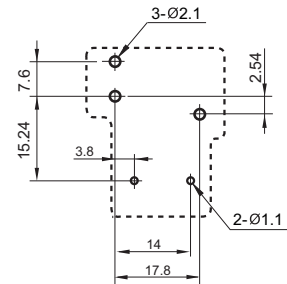
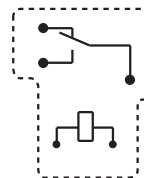
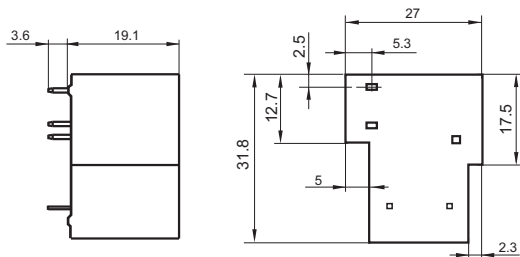
Wiring Diagram (Bottom view)

PCB Layout (Bottom view)

HF2151



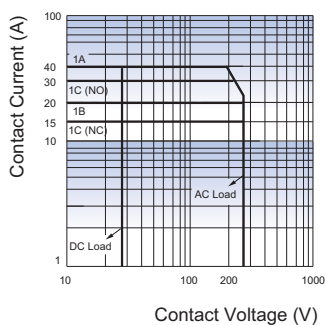
HF2150



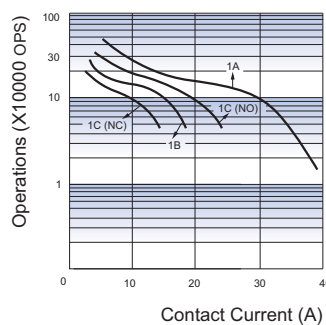
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.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

CHARACTERISTIC CURVES

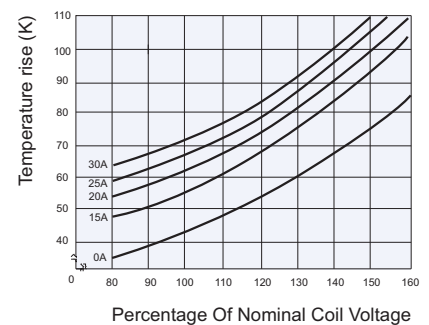
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



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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