HF2150/HF2151 MINIATURE HIGH POWER RELAY

c UL us
File No.:E134517

CQC
File No.:CQC08002027546

Features

- 30A switching capability
- PCB coil terminals, ideal for heavyduty load
- Heavy load up to 7,200VA
- Plastic sealed and Dust protected type available
- UL insulation system: Class F 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 max.(at 1A 24VDC)			
Contact material	$AgSnO_2$, 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	1×10^7 OPS			
Electrical endurance	1A type: 1×10^5 OPS (30A 240VAC, Resistive load, AgCdO, Room temp., 1s on 9s off)			

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		5% to 85% RH
Termination		PCB
Unit weight		Approx. 30g
Construction		Plastic sealed, Dust protected

Notes: 1) For plastic sealed type, the venting-hole should be excised in test.
2) The data shown above are initial values.
3) Please find coil temperature curve in the characteristic curves below.
4) UL insulation system: Class F, Class B.

COIL

Coil power	Approx. 900mW

COIL DATA at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. 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%)

Notes: *Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

SAFETY APPROVAL RATINGS

UL/CUL

Contact material	Load type	Volts	1 Form A	1 Form B	1 Form C (NO)	1 Form C (NC)
AgCdO	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	– –	– –
$AgSnO_2$	General purpose	125/240VAC	30A	– –	– –	– –

Notes: 1) All values unspecified are at room temperature.

ORDERING INFORMATION

	HF2150 HF2151	-1A	-12D	E	T	F	(XXX)

Type

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

Contact material **T:** $AgSnO_2$ **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.).
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.

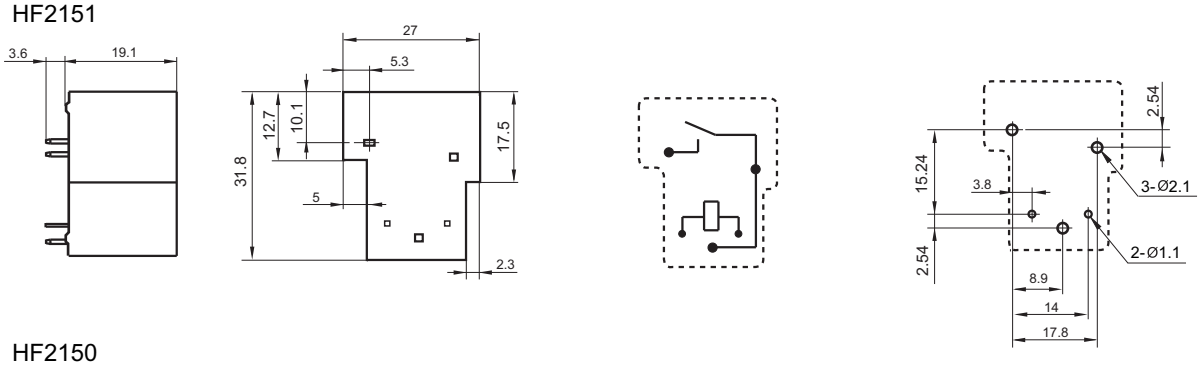
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

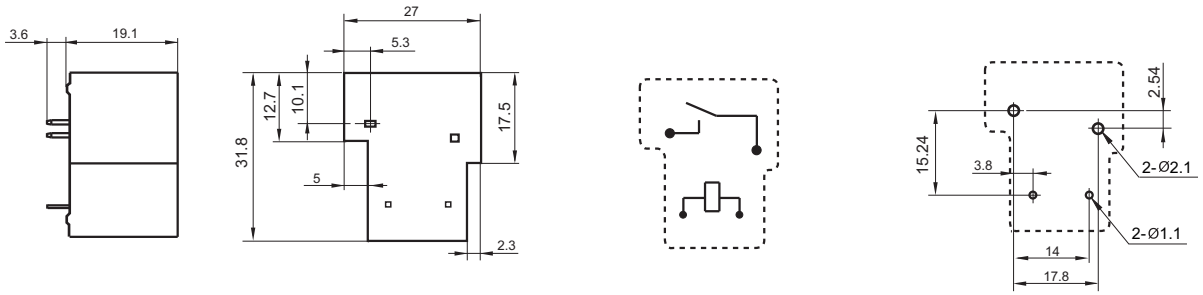
1 Form A

Outline Dimensions | Wiring Diagram (Bottom view) | PCB Layout (Bottom view)

HF2151

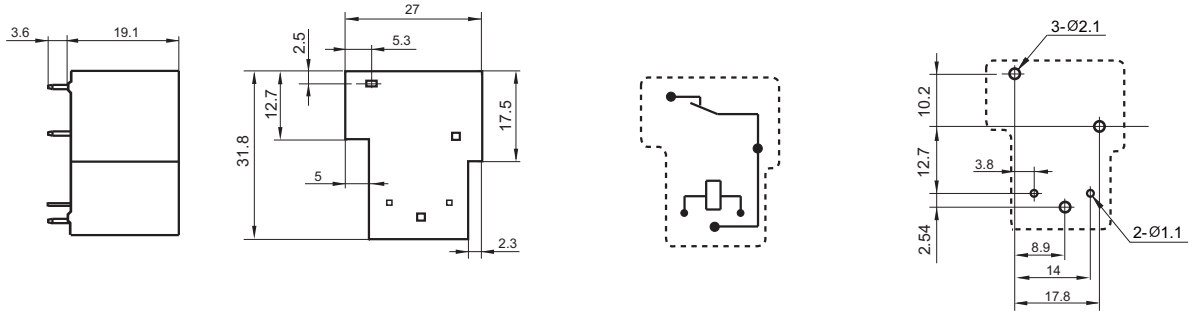


HF2150

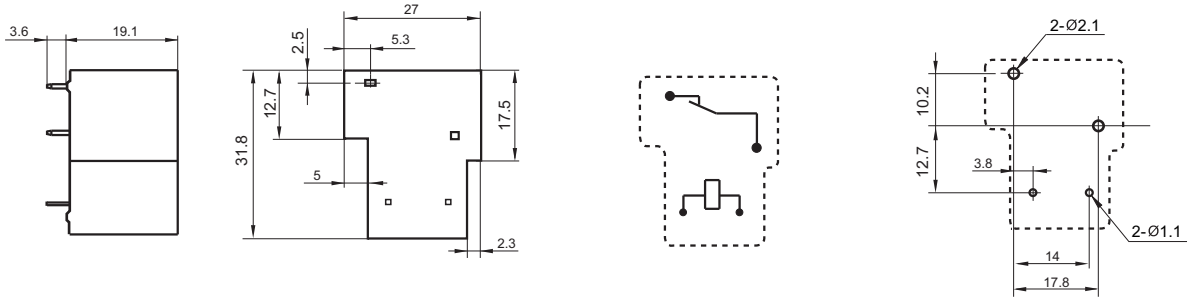


1 Form B

HF2151



HF2150



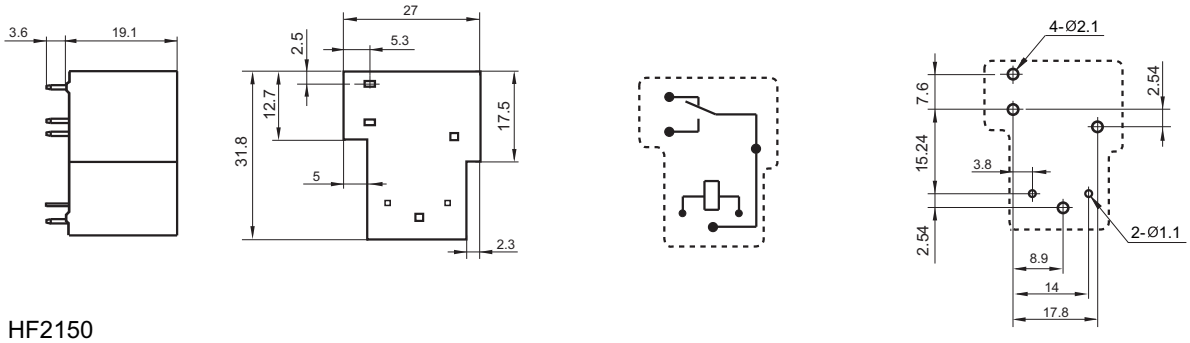
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

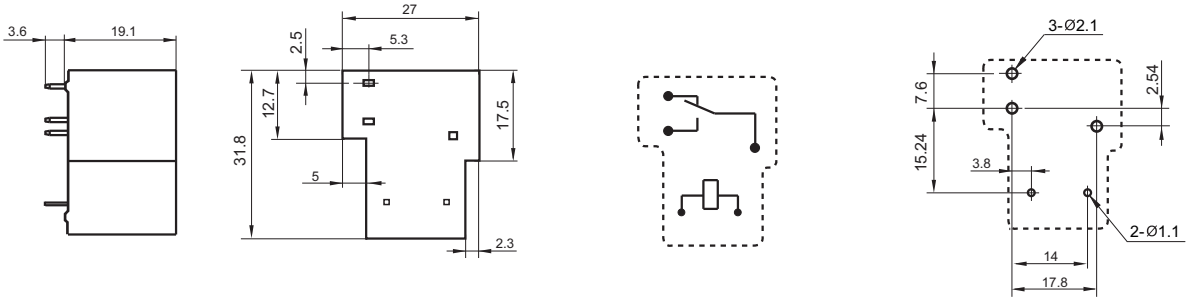
1 Form C

Outline Dimensions | Wiring Diagram (Bottom view) | PCB Layout (Bottom view)

HF2151



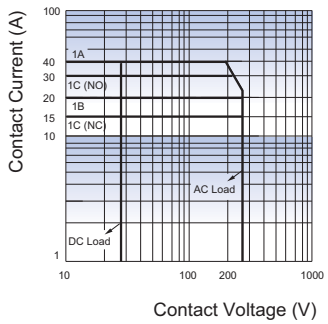
HF2150



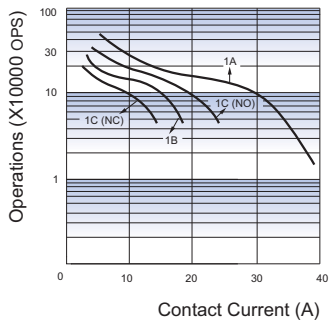
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB lauout is always ±0.1mm.

CHARACTERISTIC CURVES

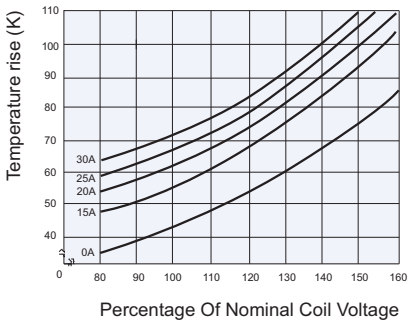
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



Test conditions:
Resistive load, AgCdO, Dust protected,
Room temp., 1s on 9s off.

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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