HF115F-H MINIATURE HIGH POWER RELAY

c UL us
File No.:E134517

VDE
File No.:116934

CQC
File No.:CQC02001001951

Features

- High sensitive: 0.25W
- Low height: 15.7 mm
- 5kV dielectric strength (between coil and contacts)
- Creepage distance: 10mm
- Meeting VDE 0700, 0631 reinforce insulation
- Product in accordance to IEC 60335-1 available
- Sockets available
- Wash tight and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 12.7 x 15.7) mm

CONTACT DATA

Contact arrangement	1A, 1B, 1C
Contact resistance	100mΩ (at 1A 6VDC)
Contact material	See ordering info.
Contact rating (Sensitive coil)	10A 250VAC
Max. switching voltage	440VAC / 125VDC
Max. switching current	10A
Max. switching power	2500VA
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
Surge voltage (between coil & contacts)		10kV (1.2 x 50μs)
Operate time (at nomi. volt.)		15ms max.
Release time (at nomi. volt.)		8ms max.
Temperature rise (at nomi. volt.)		55K max.
Shock resistance *	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance *		10Hz to150Hz 10g/5g
Humidity		35% to 85% RH
Ambient temperature		-40°C to 85°C
Termination		PCB
Unit weight		Approx. 13.5g
Construction		Wash tight, Flux proofed

Notes: 1) The data shown above are initial values.
2) * Index is not that of relay length direction.

COIL

Coil power	250mW

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	7.5	100 x (1±10%)
6	4.50	0.6	9.0	144 x (1±10%)
12	9.00	1.2	18	576 x (1±10%)
18	13.50	1.8	27	1296 x (1±10%)
24	18.00	2.4	36	2304 x (1±10%)
48	36.00	4.8	72	9216 x (1±15%)
60	45.00	6.0	90	12857 x (1±15%)

Notes: The max. allowable voltage in the COIL DATA is coil overdrive voltage, it is the instantaneous max. voltage which the relay coil could endure in a very short time.

SAFETY APPROVAL RATINGS

VDE

Contact Material	Specifications	Ratings
$AgSnO_2$	HF115F-H….1(H;Z)(S)(1;2;3)A(G)(F)	10A 250VAC at 85°C
AgCdO	HF115F-H….1(H;Z)(S)(1;2;3)(G)(F)	10A 250VAC at 85°C 6A 400VAC at 85°C

UL&CUL

Contact Material	Specifications	Ratings
AgCdO	HF115F-H….1(H;Z)(S)(1;2;3)(G)(F)	10A 250VAC

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

ORDERING INFORMATION

	HF115F-H /	012	-1H	S	3	A	(XXX)
Type							
Coil voltage	5, 6, 12, 18, 24, 48, 60VDC						
Contact arrangement	**1H:** 1 Form A **1D:** 1 Form B **1Z:** 1 Form C						
Construction [1)]	**S:** Wash tight **Nil:** Flux proofed						
Version	**1:** 3.5mm 1 pole **2:** 5.0mm 1 pole **3:** 5.0mm 1 pole						
Contact material [2)]	**A:** $AgSnO_2$ **B:** AgNi **Nil:** AgCdO **G:** AgCdO+Au plated **AG:** $AgSnO_2$+Au plated **BG:** AgNi+Au plated						
Customer special code	e.g. (335) stands for product in accordance to IEC 60335-1 (GWT)						

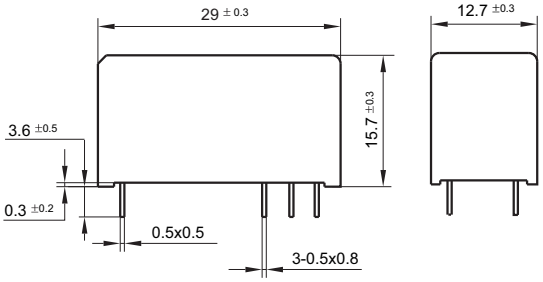
Notes: 1) We recommend flux proofed types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust, etc.).
We suggest to choose wash tight types and validate it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust, etc).
If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.
2) For gold plated type, the min. switching current and min. switching voltage is 100mA 5VDC.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

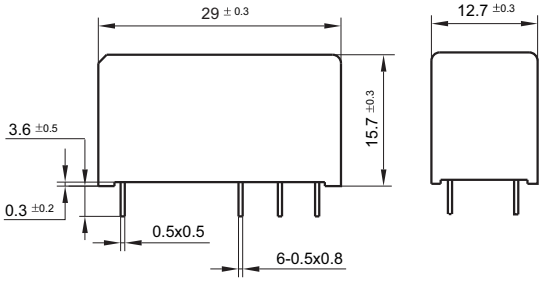
Unit: mm

Outline Dimensions

3.5mm Pinning (HF115F-H/ □□□ -□□ -1-□)



5mm Pinning (HF115F-H/ □□□ -□□-2/3-□)

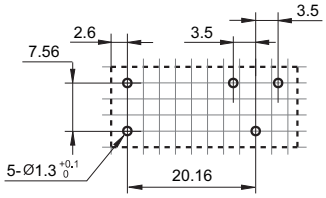


OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

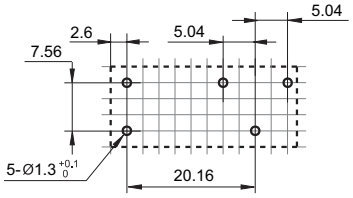
Unit: mm

PCB Layout (Bottom view)

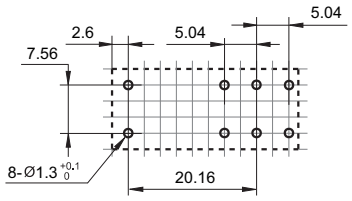
3.5mm Pinning, 1 Pole



5mm Pinning, 1 Pole



5mm Pinning, 1 Pole



Wiring Diagram (Bottom view)

3.5/5mm Pinning, 1 Pole, 10A, HF115F-H/ □□□ -□□ -□ -1/2 -□

1 Form A

1 Form B

1 Form C

5mm Pinning, 1 Pole, 10A, HF115F-H/ □□□ -□□ -□ -3 -□

1 Form A

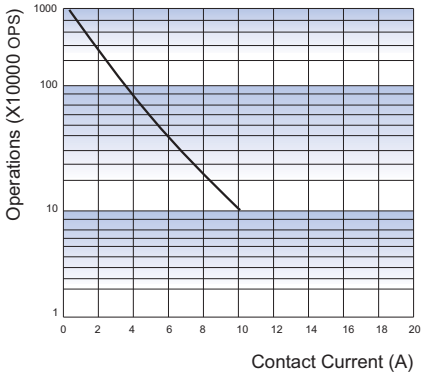
1 Form B

1 Form C

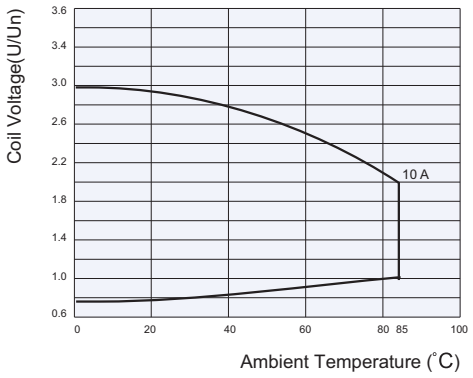
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.
3) The width of the gridding is 2.52mm.

CHARACTERISTIC CURVES

ENDURANCE CURVE



COIL OPERATING RANGE (DC)



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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