HF115F-A MINIATURE HIGH POWER RELAY

c UL us
File No.:E134517

VDE
File No.:116934



Features

- AC voltage coil type
- 16A switching capability
- 1 & 2 pole configurations
- 5kV dielectric strength (between coil and contacts)
- Low height: 15.7 mm
- Creepage distance: 10mm
- Meeting VDE 0700, 0631 reinforce insulation
- Product in accordance to IEC 60335-1 available
- Sockets available
- Plastic sealed and flux proofed types available
- UL insulation system: Class F
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 12.7 x 15.7) mm

CONTACT DATA

Contact arrangement	1A, 1B, 1C	2A, 2B, 2C
Contact resistance	100mΩ max.(at 1A 6VDC)	
Contact material	See ordering info.	
Contact rating (Res. load)	12A/16A 250VAC	8A 250VAC
Max. switching voltage	440VAC / 300VDC	
Max. switching current	12A / 16A	8A
Max. switching power	3000VA / 4000VA	2000VA
Mechanical endurance	1×10^6 OPS	
Electrical endurance	1H3B type: 5×10^4 OPS (16A 250VAC, Resistive load, Room temp., 1s on 9s off) 2H4B type: 5×10^4 OPS (8A 250VAC, Resistive load, Room temp., 1s on 9s off)	

COIL

Coil power	Approx. 0.75VA

COIL DATA (at 50Hz) at 23°C

Nominal Voltage VAC	Pick-up Voltage VAC max.	Drop-out Voltage VAC min.	Coil Current mA	Coil DC Resistance Ω
24	18.00	3.60	31.6	350 x (1±10%)
115	86.30	17.30	6.6	8100 x (1±15%)
230	172.50	34.50	3.2	32500 x (1±15%)

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
	Between contact sets	2500VAC 1min
Temperature rise (at nomi. volt.)		85K max.
Shock resistance *	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance *		10Hz to150Hz 10g/5g
Humidity		5% to 85% RH
Ambient temperature		-40°C to 70°C
Termination		PCB
Unit weight		Approx. 13.5g
Construction		Plastic sealed, Flux proofed

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

SAFETY APPROVAL RATINGS

UL/CUL	12A 250VAC 16A 250VAC 8A 250VAC
VDE (AgNi, AgNi+Au)	12A 250VAC at 70°C 16A 250VAC at 70°C 8A 250VAC at 70°C
VDE ($AgSnO_2$, $AgSnO_2$+Au)	12A 250VAC at 70°C 8A 250VAC at 70°C

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

	HF115F-A /	024	-1H	S	1	A	F	(XXX)

Type	
Coil voltage	24, 115, 230VAC
Contact arrangement	**1H:** 1 Form A **1D:** 1 Form B **1Z:** 1 Form C **2H:** 2 Form A **2D:** 2 Form B **2Z:** 2 Form C
Construction[1) 2)]	**S:** Plastic sealed **Nil:** Flux proofed
Version	**1:** 3.5mm 1 pole 12A **2:** 5.0mm 1 pole 12A **3:** 5.0mm 1 pole 16A **4:** 5.0mm 2 pole 8A
Contact material[3)]	**A:** $AgSnO_2$ **B:** AgNi **Nil:** AgCdO **G:** AgCdO+Au plated **AG:** $AgSnO_2$+Au plated **BG:** AgNi+Au plated
Insulation standard	**F:** Class F
Special code[4)]	**XXX:** Customer special requirement **Nil:** Standard

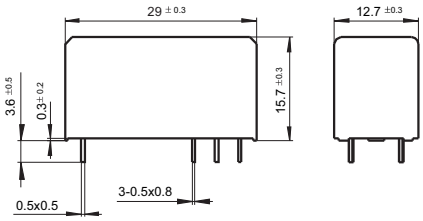
Notes: 1) We recommend flux proofed types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust, etc.).
We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust, etc.).
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
3) For gold plated type, the min. switching current and min. switching voltage is 10mA 5VDC.
4) The customer special requirement express as special code after evaluating by Hongfa. e.g.(335) stands for product in accordance to IEC 60335-1 (GWT).

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

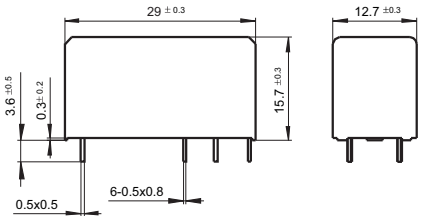
Unit: mm

Outline Dimensions

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

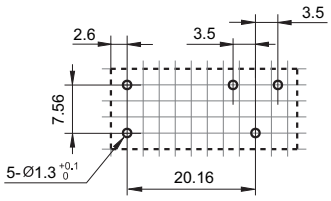


5mm Pinning (HF115F-A/ □□□ -□□ -□ -2/3/4 -□□)

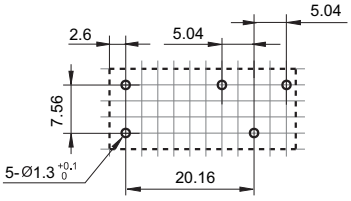


PCB Layout (Bottom view)

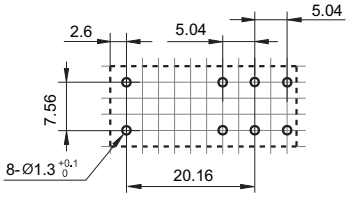
3.5mm 1Pole 12A



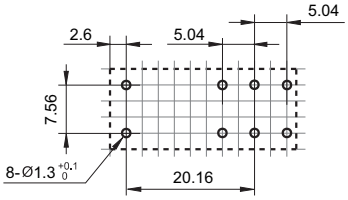
5mm 1Pole 12A



5mm 1Pole 16A



5mm 2Pole 8A



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.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Wiring Diagram (Bottom view)

HF115F-A/ □□□ -□□ -□ -1/2 -□□, 3.5/5mm Pinning, 1 Pole, 12A



1 Form A



1 Form B



1 Form C

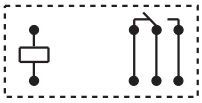
HF115F-A/ □□□ -□□ -□ -3 -□□, 5mm Pinning, 1 Pole, 16A



1 Form A



1 Form B



1 Form C

HF115F-A/ □□□ -□□ -□ -4 -□□, 5mm Pinning, 2 Pole, 8A



2 Form A



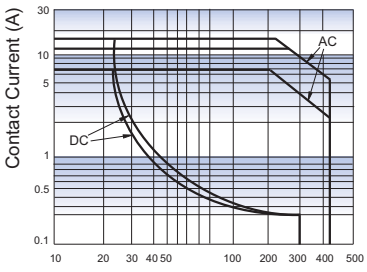
2 Form B



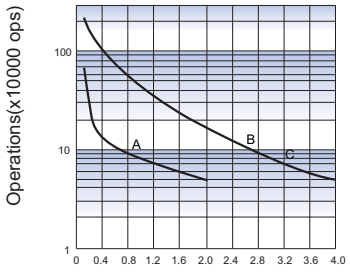
2 Form C

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



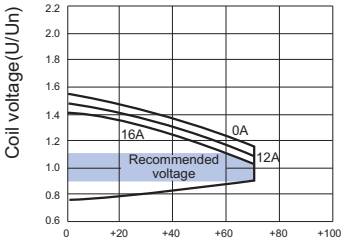
ENDURANCE CURVE



Notes:

1) Curve A: 2H4B type
   Curve B: 1H1B type (or 1H2B type)
   Curve C: 1H3B type
2) Test conditions:
   NO, Resistive load, 250VAC,
   Flux proofed, Room temp., 1s on 9s off.

COIL OPERATING RANGE (AC) *



Notes: * The use of a relay with an energising voltage other than the rated coil voltage may lead to reduced electrical life.
An energising voltage over the abver range may damage the insulation of relay coil.

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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