

HF115F

MINIATURE HIGH POWER RELAY

CUS

File No.:E134517



File No.:116934



File No.:CQC08002028130



Features

- Low height: 15.7 mm
- 16A switching capability
- 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
- Plastic sealed and flux proofed types available
- UL insulation system: Class F available
- 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 x 10 ⁷ OPS	
Electrical endurance	1H3B type: 1 x 10 ⁵ OPS (16A 250VAC, Resistive load, AgNi, Room temp., 1s on 9s off) 2H4B type: 5 x 10 ⁴ OPS (8A 250VAC, Resistive load, AgNi, Room temp., 1s on 9s off)	

CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
	Between contact sets	2500VAC 1min
Surge voltage (between coil & contacts)	10kV (1.2 / 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/s ²
	Destructive	980m/s ²
Vibration resistance *	10Hz to 150Hz 10g/5g	
Humidity	5% to 85% RH	
Ambient temperature	-40°C to 85°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 in relay length direction.

3) UL insulation system: Class F, Class B.

COIL

Coil power	Approx. 400mW
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COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Voltage VDC 1)	Coil Resistance Ω
5	3.50	0.5	7.5	62 x (1±10%)
6	4.20	0.6	9.0	90 x (1±10%)
9	6.30	0.9	13.5	202 x (1±10%)
12	8.40	1.2	18	360 x (1±10%)
18	12.60	1.8	27	810 x (1±10%)
24	16.80	2.4	36	1440 x (1±10%)
48 ²⁾	33.60	4.8	72	5760 x (1±15%)
60 ²⁾	42.00	6.0	90	7500 x (1±15%)
110 ²⁾	77.00	11.0	165	25200 x (1±15%)

Notes: 1) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

2) For products with rated voltage ≥ 48V, measures should be taken to prevent coil overvoltage in order to protect coil in test and application (eg. Connect diodes in parallel).



HONGFA RELAY

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

2016 Rev. 1.00

SAFETY APPROVAL RATINGS

VDE

Contact material	Specifications	Ratings	Ambient Temperature
AgCdO	HF115F....2(H;Z)(S)4(G)(F)	8A 250VAC	at 70°C
	HF115F....1H(S)(1;2)(G)(F)	12A 250VAC	at 70°C
		10A 250VAC	at 70°C
	HF115F....1Z(S)(1;2)(G)(F)	12A 250VAC	at 70°C
	HF115F....1H(S)3(G)(F)	16A 250VAC	at 70°C
		10A 250VAC	at 70°C
		9A 250VAC COSØ =0.4	at 70°C
AgNi	HF115F....2(H;Z)(S)4B(G)(F)	16A 250VAC	at 70°C
		9A 250VAC COSØ =0.4 (NO only)	at 70°C
	HF115F....1H(S)(1;2)B(G)(F)	5A 400VAC	at 85°C
		8A 250VAC	at 85°C
	HF115F....1Z(S)(1;2)B(G)(F)	12A 250VAC	at 85°C
	HF115F....1H(S)3B(G)(F)	12A 250VAC	at 85°C
		16A 250VAC	at 85°C
	HF115F....1Z(S)3B(G)(F)	9A 250VAC COSØ =0.4	at 70°C
		16A 250VAC (NO only)	at 85°C
		12A 250VAC	at 85°C
		9A 250VAC COSØ =0.4 (NO only)	at 70°C
		10(4)A 250VAC (NO only)	at 65°C
AgSnO ₂	HF115F....2(H;Z)(S)4A(G)(F)	12(2)A 250VAC (NO only)	at 65°C
		8A 250VAC	at 85°C
	HF115F....1(H;Z)(S)(1;2)A(G)(F)	12A 250VAC	at 85°C
	HF115F....1H(S)3A(G)(F)	16A 250VAC	at 85°C
		9A 250VAC COSØ =0.4	at 70°C
	HF115F....1Z(S)3A(G)(F)	16A 250VAC (NO only)	at 85°C
		9A 250VAC COSØ =0.4 (NO only)	at 70°C

UL/CUL

Version 1 or 2 (AgCdO)	12A 277VAC	Version 3 (AgSnO ₂)	16A 277 VAC
	1/2HP 250VAC		1/3HP 125VAC
	1/3HP 125VAC		1/2HP 250VAC
Version 1 or 2 (AgSnO ₂)	12A / 277VAC	Version 3 (AgNi)	B300
	B300		R300
	R300		16A 277VAC
Version 1 or 2 (AgNi)	12A 277VAC	Version 4 (AgCdO)	5FLA, 30LRA 250VAC
Version 3 (AgCdO)	16A 277 VAC		10A 250VAC
	9A 250VAC at 105°C		8A 277VAC
	1HP 250VAC		1/2HP 250VAC
	1/2HP 125VAC		1/4HP 125VAC
	TV-5 125VAC	Version 4 (AgSnO ₂)	8A 277VAC
		Version 4 (AgNi)	8A 277VAC

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

Type		HF115F / 012 -1H S 1 A F (XXX)									
Coil voltage		5, 6, 9, 12, 18, 24, 48, 60, 110VDC									
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 3: 5.0mm 1 pole 16A					2: 5.0mm 1 pole 12A 4: 5.0mm 2 pole 8A				
Contact material ³⁾		A: AgSnO ₂ B: AgNi AG: AgSnO ₂ + Au plated					Nil: AgCdO G: AgCdO+ Au plated BG: AgNi+ Au plated				
Insulation standard		F: Class F Nil: Class B									
Special code ⁴⁾		XXX: Customer special requirement					Nil: Standard				

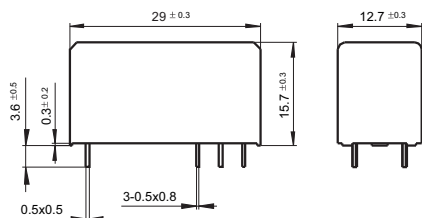
Notes: 1) We recommend flux proofed types for a clean environment (free from contaminations like H₂S, SO₂, NO₂, dust, etc.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H₂S, SO₂, NO₂, dust, etc.).
2) Contact is recommend 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); e.g. (253) stands for Reflow soldering version, for 1 pole type.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

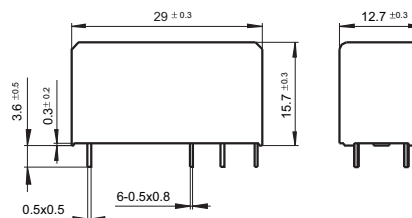
Unit: mm

Outline Dimensions

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



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



Wiring Diagram (Bottom view)

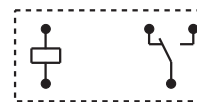
3.5/5mm Pinning, 1 Pole, 12A, HF115F/ □□□ -1 □ -□ -1/2 -□□



1 Form A



1 Form B

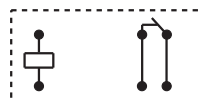


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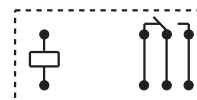
5mm Pinning, 1 Pole, 16A, HF115F/ □□□ -1 □ -□ -3 -□□



1 Form A

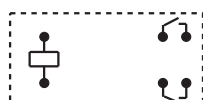


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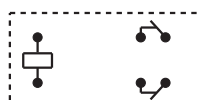


1 Form C

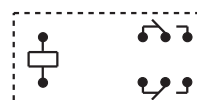
5mm Pinning, 2 Pole, 8A, HF115F/ □□□ -2 □ -□ -4 -□□



2 Form A



2 Form B

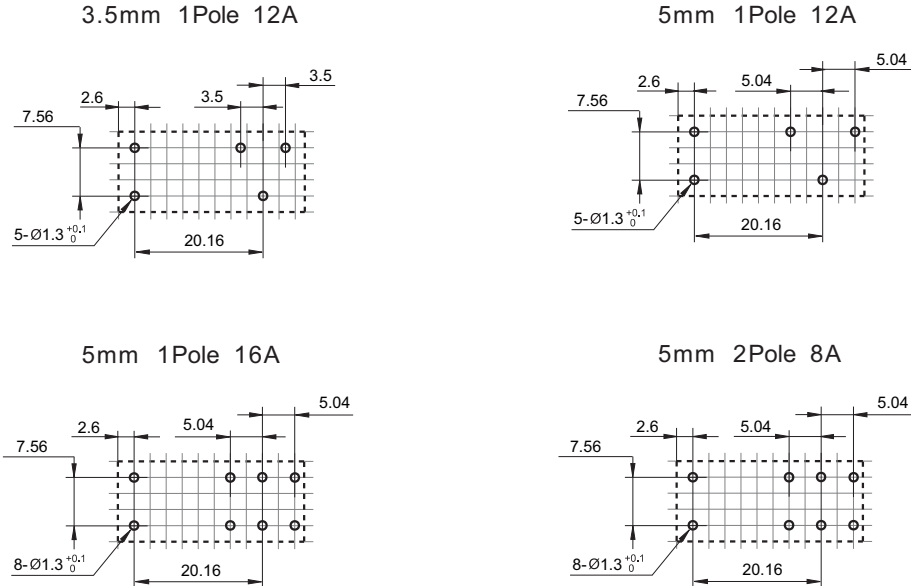


2 Form C

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

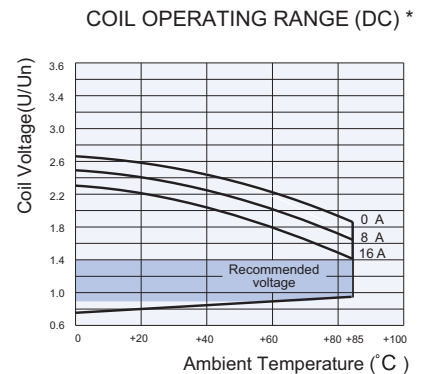
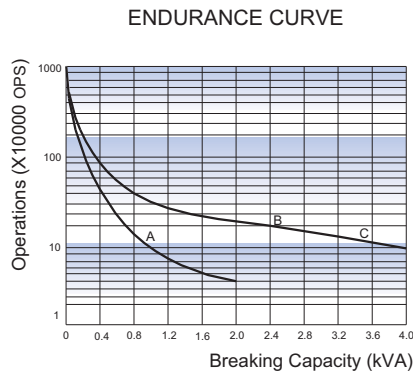
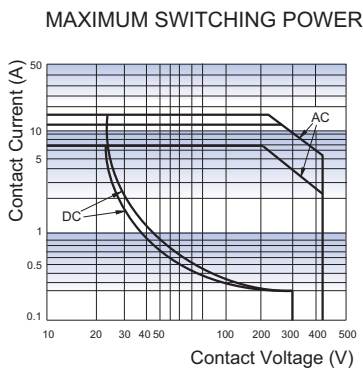
Unit: mm

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 $\pm 0.1\text{mm}$.
 3) The width of the gridding is 2.52mm .

CHARACTERISTIC CURVES



Remark:

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

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 abover 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.

Таблица возможной замены реле

силовые реле

HONGFA	TIANBO	SONGLE	HELISUN	OMRON
HF3FF	HJR-3FF	SRD(T73)	HLS8-T73	G5L
HF10FF-2			HLS-MK2P	MK2
HF10FF-3Z			HLS-MK3P	MK3
HF13F			HLS-13F	
HF18FF	HJQ-22		HLS-4453(18F)-4	MY4
HF21FF	HJR-21FF	SRU(22F)	HLS8-22F	G5L-E
HF32F	TRG1	SRSB	HLS-32F	835/835NL
HF32FA/32FA-T	TRG1	SRSB	HLS-32F	835/835NL
HF32FA-G	TRG1	SRSB	HLS-32F	835/835NL
HF33F	TRG2	SRSC	HLS-33F	G5SB
HF62F	TRA2F	SMIH(14FHA)	HLS-14FK	G5J
HF46F/HF46F-G	TRGB			202/202H
HF49FD				G5J
HF102F	TRAF		HLS-102F	G4A
HF115F	TRC2	SMIH(14FH)	HLS-14F2	G2RL
HF115FP	TRC3	SMIH(14FH)	HLS-14F3	
HF140FF	TRA3		HLS-14F	G2R/G2RG
HF13F	HJQ-13F-2C	SMB(13F)	HLS-13F-2	LY2
HF2100	HJQ-15F-1	SLC(T91)	HLS-T91(16F)-1	G7G
HF105F - 4	HJQ-15F-3	SLCH(T92)		
HF105F-1	HJQ-15F	SLA(T90)	HLS-T90(15F)	G8P
HF2160	HJQ-15F-2	SLI(T93)	HLS-T91(16F)-2	G7G/G8G
HF165FD	HJQ-15F	SLA	HLS-T90(15F)	G8P
JQC-21FF	HJR-21FF	SRD(T73)	HLS8-22F	
HF7FF	HJR-7FF	SRG(4123)	HLS8-T73	
HF141FF	TRA1		HLS-14F1	G2R
HF14FW	TRA2	SMIH(14FH)	HLS-14F2	G2R
HF14FF	TRA1		HLS-14F	G2R
HF36F	TRA4			
HF42F	TRA5			G5PA-2
HF8	TRDH	SRI(T72)	HLS-T72	
HF102F			HLS-102F	G4A
HLS-4453(18F)-2		SMBH(4453)	HLS-4453(18F)-2	MY2
HF18FF-3Z			HLS-4453(18F)-3	MY3

сигнальные реле

HONGFA	TIANBO	SONGLE	HELISUN	OMRON
HFD2	HJR1	SRC	HLS-4078	G5V-2
HFD4				
HFD27	HJR1-2	SRC	HLS-4078	G5V-2
HFD41	HJR4102	SRS		
HF41F			HLS6-4100H-1	G2E
HM4101F	HJR4102E			
HFD23			HLS6-23F	G5V-1

автомобильные реле

HONGFA	TIANBO	SONGLE	HELISUN	OMRON
HFKM, HFKS	TRAW	SLE(4117)	HLS-4117	
HVF6	TRFM			G8HN
HFKP	TRKP	SLB	HLS-4120	G8PE
	TRS			
	TRV3			
HFV4	TRV4	SLD	HLS-CMA3	G8JN
	TRV5			
HFV7	TRV6	SLDH	HLS-CMA3-1	G8JR
HFKW	HJR78F	SRA(T74)	HLS-T78	G8QN
			HLS-4121/4122	
HFV6		SLM	HLS-CMA6	G8H