

HF3635

CHARGER MODULE



File No.: E133481



File No.: R50513344

Typical Applications

On board charger,charging pile,EV Charger IC-CPD



Features

- Max.continuous current 40A
- 40A switching capability @ 250VAC
- Extended temp. Range up to 85°C
- With highly established reliability
- High space utilization
- RoHS, ELV compliant

RoHS compliant

CHARACTERISTICS

Contact arrangement	1H: 1 from A 2H: 2 from A 1B: 1 from B 2B: 2 from B	
Voltage drop (initial) ¹⁾	Typ.:50mV(at 10A) Max.:250mV max.(at 10A)	
Max. continuous current ²⁾	NO: 40A(at 85°C,Holding voltage)	
Short circuit	2KA ³⁾	
Max. switching voltage	305VAC	
Min. Contact load	1A 12VDC ⁴⁾	
Electrical load	See "CONTACT DATA"	
Mechanical endurance	2×10 ⁵ OPS	
Insulation resistance (initial) ⁴⁾	100MΩ(at 500VDC)	
Dielectric stength (initial) ⁴⁾	2000VAC 1min(between contacts) 4000VAC 1min(coil & contacts)	
Surge voltage(initial) (Between coil to contact)	6KV(1.2/50μs)	
Pollution degree	2	
Material Group	III	
Overvoltage category	II	
Operate time (initial) ⁵⁾	Max:30ms	
Release time (initial) ⁵⁾	Max.:5ms	
Ambient temperature	-40°C to 85°C	
Vibration resistance (initial) ⁶⁾	Operating extremes	10~50Hz 1.65mm DA
	Damage limits	10~50Hz 2.0mm DA

Shock resistance (initial) ⁶⁾	Operating extremes	98 m/s ²
	Damage limits	980 m/s ²
Termination	PCB ⁷⁾ , Bolt ⁸⁾	
Construction	Flux proofed	
Unit weight	HF3635/H:Approx.50g	
	HF3635: Approx.80g	
	HF3635 Single CT:Approx.100g	
	HF3635 Dual CT:Approx.120g	

- Notes:**1) Initial value, All tests are conducted under room temperature and room humidity.
2) the test under the follow conditions:
a.the charger module is mounted on the PCB,The coil applies 100% rated voltage excitation for 200ms, then drops to holding voltage excitation;
b.The PCB is a double layer board,the thickness of the copper foil is 4 oz(140 um),the width if each copper foil is 13.15×(1±5%)mm, the length of the copper foil is 50 mm±1 mm,and the Tg value of the PCB is 150 °C;
3) Comply with 2kA short circuit test using K5 40A fuse (UL2231-2 clause 33).
4) 1min , leakage current less than 1mA.
5) The value is measured when voltage drops suddenly from nominal voltage to 0VDC and coil is not paralleled with suppression circuit. Operate and release time excluding contact bounce.
6) When non-energized,close time of NO contacts shall not exceed 100us,when energized,opening time of closed NO contact shall not exceed 100us.
7) Since it is an environmental friendly product,please select lead-free solder when welding.The recommended soldering temperature and time is (260±3) °C,(5±0.3)s.
8) To avoid distortion of the terminals and the mount tabs,when tightening a screw,use flat washers,in addition,to avoid loosening of the screw,when tightening a screw,use spring washers.these will ensure there is sufficient thickness and strength to prevent distortion of the terminals and mount tabs. To avoid unexpected damage,tighten screw to within the specified torque shown below:M4 screw:1.2N~1.4N.m.

CONTACT DATA¹⁾

Load voltage	Load type	Contact arrangement	Load current	On/Off ratio		Electrical endurance ²⁾ OPS	Ambient Temperature
			A	On s	Off s		
277VAC	Resistive	NO	40A	1	9	2×10 ⁴	85°C
277VAC	Resistive	NO	Making 0A ²⁾ ,Carrying 32A,breaking 0A	1	9	1×10 ⁵	

Notes:1) Load mentioned in this chart is for relays with no parallel diode or Zener Diode.For those with parallel diode,Zener Diode or other components,please contact Hongfa for more technical supports.Please also contact Hongfa if the actual application load is different from what mentioned above.

2) Making 100ms,loading 800ms,breaking 100ms.



HONGFA RELAY

ISO9001, IATF16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2025 Rev. 1.00

COIL DATA

23°C

Nominal voltage VDC	Pick-up voltage VDC	Drop-out voltage VDC	Holding voltage ²⁾ VDC	Coil resistance $\times(1\pm10\%)$ Ω	Power consumption ²⁾ W
24	≤ 19.2	≥ 1.2	9.6(7.7~19.2)	150	Sensitive type: 3.8W/0.61W
24	≤ 19.2	≥ 1.2	9.6(7.7~19.2)	120	Standard type: 4.8W/0.77W
24	≤ 19.8	≥ 1.2	9.6(7.7~19.2)	280	Standard type: 2.06W/0.33W ³⁾
12	≤ 9.6	≥ 0.6	4.8(3.85~9.6)	37.5	Sensitive type: 3.8W/0.61W
12	≤ 9.6	≥ 0.6	4.8(3.85~9.6)	30	Standard type: 4.8W/0.77W
12	≤ 10.2	≥ 0.6	4.8(3.85~9.6)	70	Standard type: 2.06W/0.33W ³⁾

Notes:1) To energize charger module properly apply 100%~125% nominal coil voltage for 100ms~200ms.

2) Coil holding voltage is 40% of nominal voltage after applying nominal voltage for 100ms~200ms.

3) When placing an order, the special feature code A01 needs to be added.

ORDERING INFORMATION

Type	HF3635 / A250 -12 -2H -2B LP <input type="checkbox"/> T CXX(XXX)
Contact voltage	A250: AC load
Coil voltage	12: 12VDC 24: 24VDC
Main Contact form	1H: 1 from A 2H: 2 from A
Contact Form	1B: 1 from B 2B: 2 from B Nil: No auxiliary monitoring contacts
Installing form	LP: PCB and Bolt P: PCB
Coil Power	L: Sensitive type Nil: Standard type
Contact material	T: AgSnO ₂
Transformer feet	CXX: Transformer Code ³⁾ Nil: Without transformer
Special code	XXX: Customer special requirement 991: Auxiliary contacts gold-plated Nil: Standard

Notes:1) The charger modules can not be used in the environment with pollutants like H₂S, SO₂, NO₂, dust etc.

2) Water cleaning or surface process is not suggested after the charger modules are assembled on PCB.

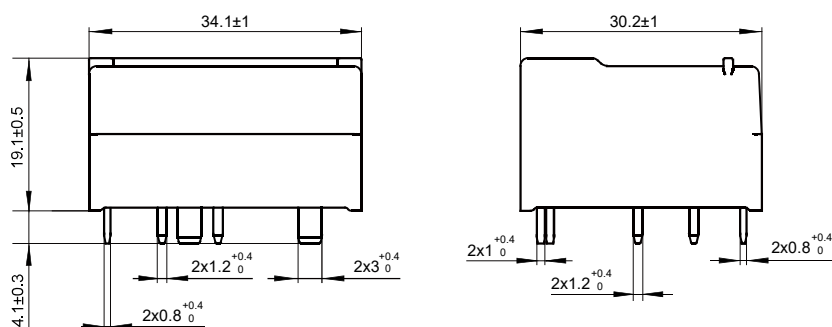
3) This product offers two types of transformers: a current transformer, which scales down high AC currents for measurement, and a leakage current transformer (available in Type A and Type B), which detects leakage currents. Transformers can be selected based on customer needs, as shown in Table 1

Table 1

Code	Leakage current transformer	Transformer
C4	ZCT type A	/
C8	/	MCT
C17	ZCT type B(US Standard)	MCT
C22	ZCT type B(EU Standard)	MCT
C23	ZCT type A	MCT

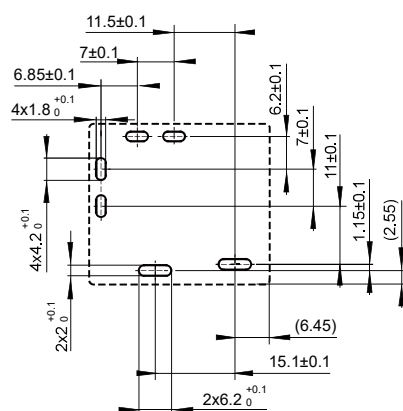
3635/H

Outline Dimensions

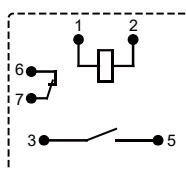


Notes:* The additional tin top is max. 1mm.

PCB Layout(Bottom view)



Wiring Diagram(Bottom view)

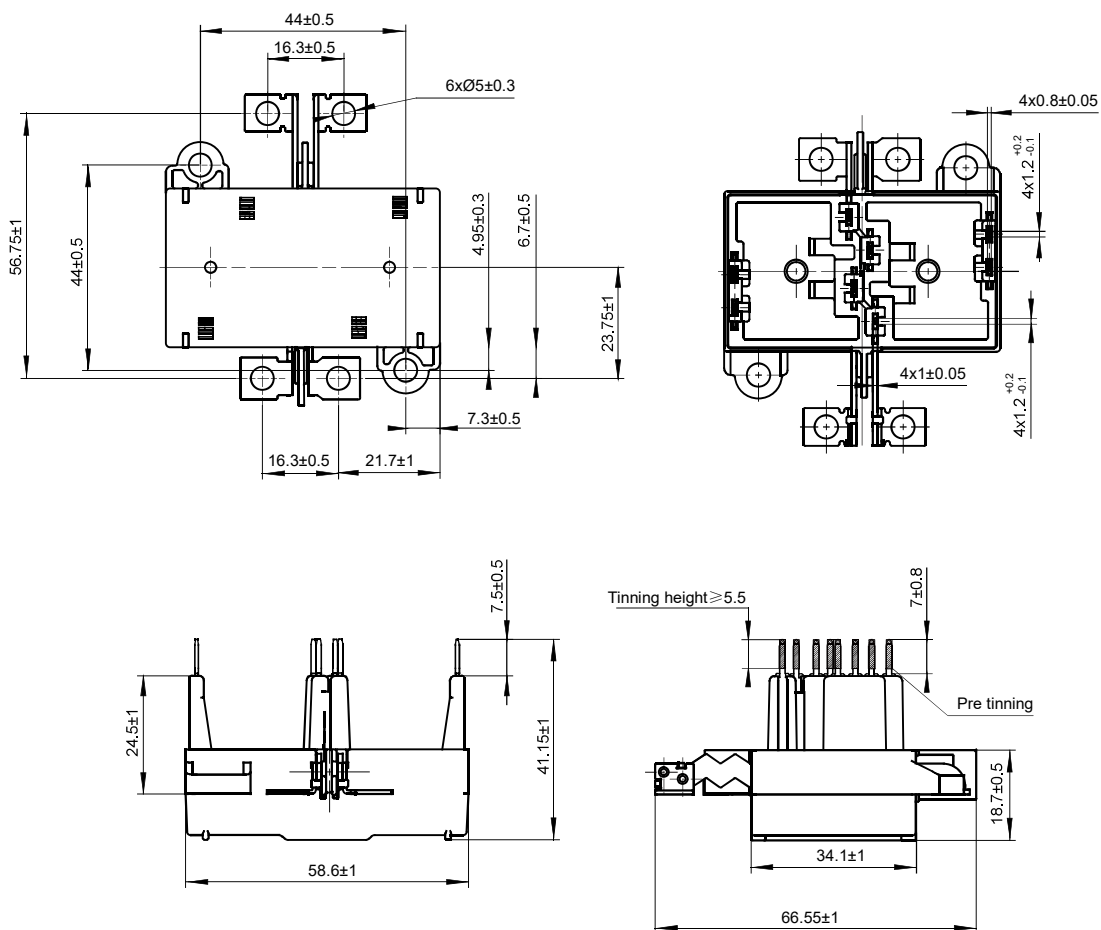


OUTLINE DIMENSIONS, WIRING DIAGRAM AND TERMINAL FUNCTION DEFINITION

Unit: mm

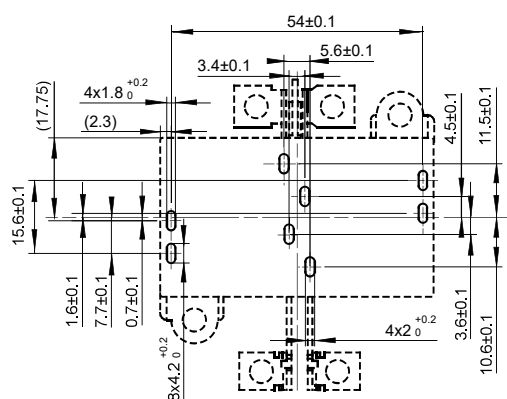
HF3635

Outline Dimensions

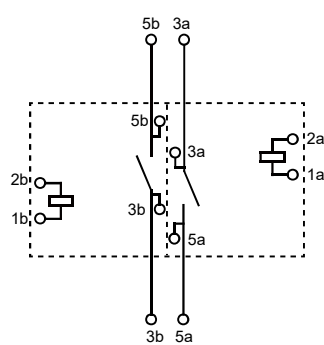


Notes:* The additional tin top is max. 1mm.

PCB Layout(Bottom view)



Wiring Diagram(Bottom view)

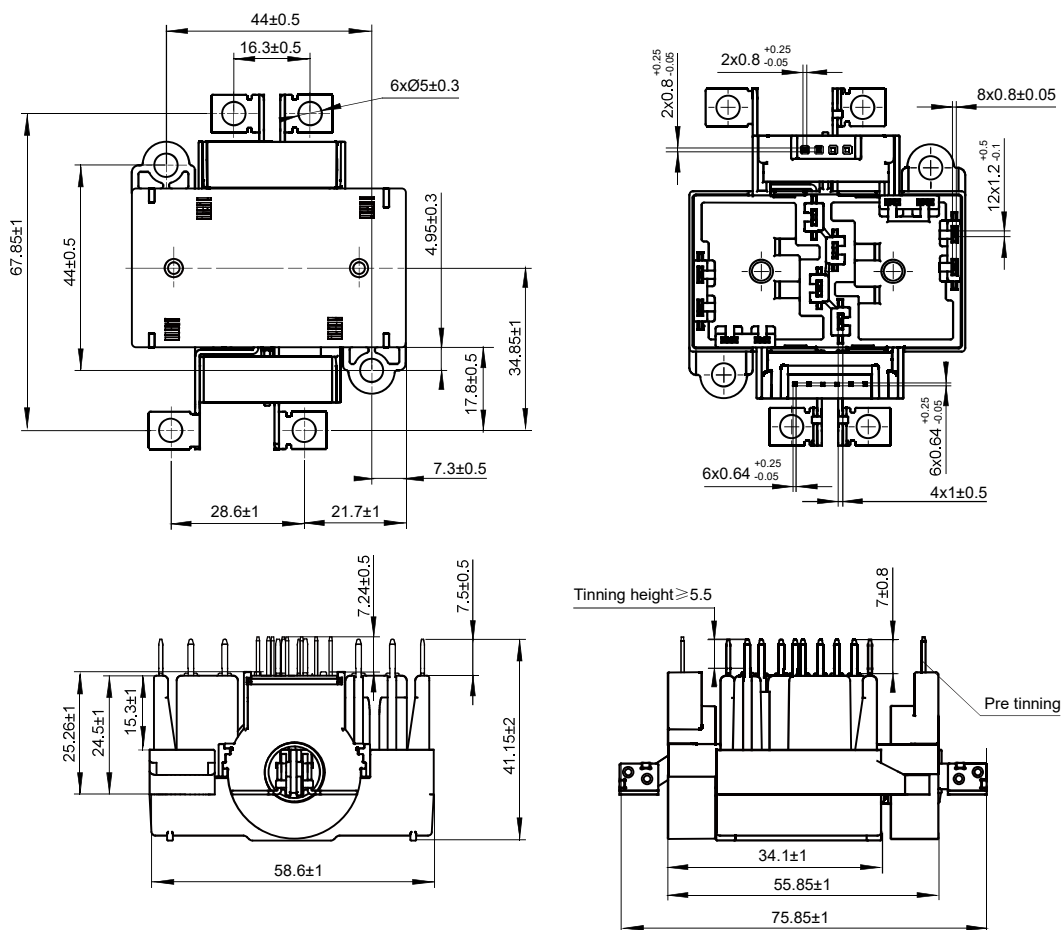


OUTLINE DIMENSIONS, WIRING DIAGRAM AND TERMINAL FUNCTION DEFINITION

Unit: mm

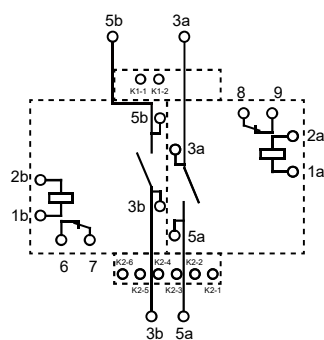
HF3635 Dual CT Specifications

Outline Dimensions



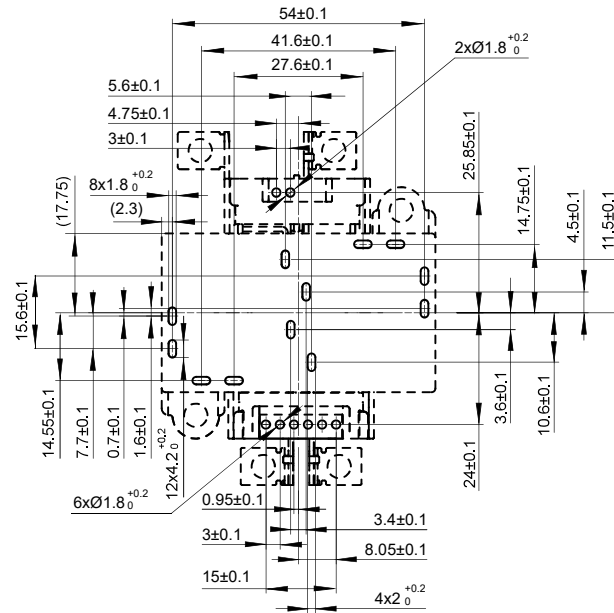
Notes:* The additional tin top is max. 1mm.

Wiring Diagram(Bottom view)



HF3635 Dual CT Specifications

PCB Layout(Bottom view)



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.

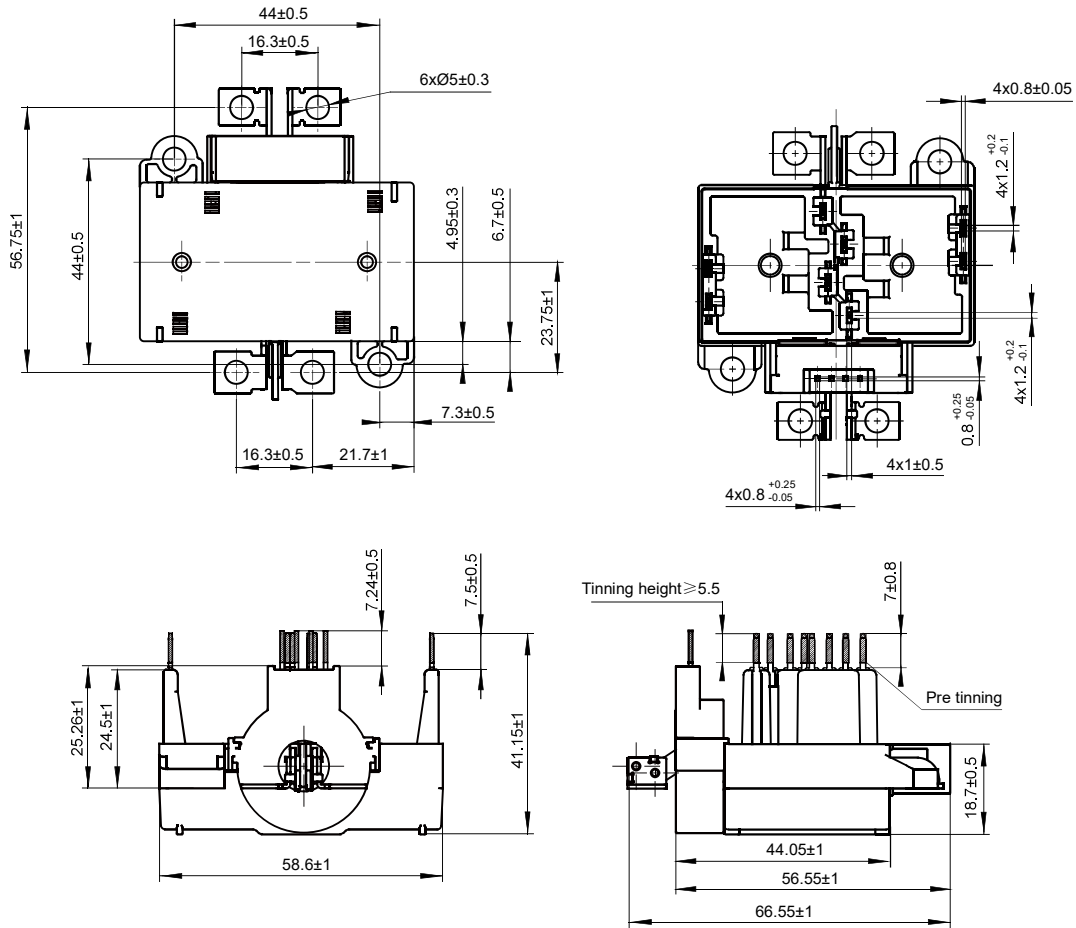
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OUTLINE DIMENSIONS, WIRING DIAGRAM AND TERMINAL FUNCTION DEFINITION

Unit: mm

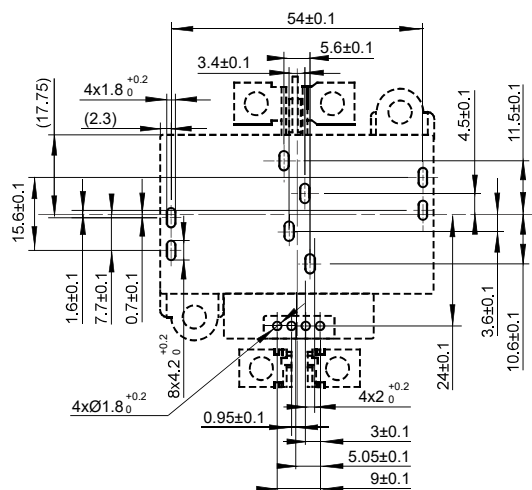
HF3635 Single CT Specifications

Outline Dimensions



Notes:* The additional tin top is max. 1mm.

PCB Layout(Bottom view)



Wiring Diagram(Bottom view)

