HF3635 CHARGER MODULE

File No.：E133481

File No.：R50513344

Features

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

Typical Applications

vehicle-mounted charging gun, charging pilecharging pile

RoHS compliant

CHARACTERISTICS

Contact arrangement		1A, 2A	1A1B, 2A2B
Contact resistance[1]	Main contact	25mΩ max.(at 13.5VDC 10A)	
	Aux.contact		100mΩ max. (at 6VDC 100mA)
Max. continuous current[2]		NO：40A(at 85℃,Holding voltage)	
Short circuit		2KA[3]	
Max. switching voltage	Main contact	305VAC	
	Aux.contact		12VDC
Max. switching current	Main contact	40A	
	Aux.contact		500mA
Min. Contact load	Main contact	1A 12VDC	
	Aux.contact		100mA 12VDC[4]
Electrical load		See “CONTACT DATA”	
Mechanical endurance		2×10^{5}OPS	
Insulation resistance(initial)[5]		100MΩ(at 500VDC)	
Withstand voltage (initial)[5]	between contacts	2000VAC 1min	
	coil & contacts	4000VAC 1min	
Surge voltage(initial) (Between coil to contact)		6KV(1.2/50μs)	
Pollution degree		2	
Material Group		III	
Overvoltage category		II	
Operate time (initial)[6]		Max:30ms	
Release time (initial)[6]		Max.:5ms	
Ambient temperature		-40℃ to 85℃	
Vibration resistance (initial)[7]	Operating extremes	10Hz to 50Hz 1.65mm DA	
	Damage limits	10Hz to 50Hz 2.0mm DA	
Shock resistance (initial)[7]	Operating extremes	98 m/s^2	
	Damage limits	980 m/s^2	
Termination		PCB[8] , Bolt[9]	
Construction		Flux proofed	
Unit weight		HF3635/H:Approx.50g, HF3635: Approx.80g HF3635 Single CT:Approx.100g HF3635 Dual CT:Approx.120g	

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 120% 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 per layer is 4 oz(140μm),The copper foil width corresponding to each load pin is 13.15×(1±5%)mm,the length of the copper foil is 50mm ± 1mm,and the Tg value of the PCB is 150℃ or above.
3) Comply with 2kA short circuit test using K5 40A fuse (UL2231-2 clause 33).
4) The min. contact load is a reference value,which is applicable to environments with normal temperature,normal humidity and the on-off frequency, environmental conditions and expected Therefore, please conduct a confirmation test with the actual normal pressure. This reference value will change according to load before use.
5) 1min , leakage current less than 1mA.
6) 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.
7) When non-energized,close time of NO contacts shall not exceed 100μs, when energized,opening time of closed NO contact shall not exceed 100μs.
8) Since it is an environmental friendly product,please select lead-free solder when welding.The recommended soldering temperature and time is (260±3)℃,(5±0.3)s.
9) 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·m to 1.4N·m.

CONTACT DATA[1]

Load voltage	Load type	Contact arrangement	Load current A	On/Off ratio On	On/Off ratio Off	Electrical endurance[2] OPS	Ambient Temperature
277VAC	Resistive	NO	40A	1	9	2×10^4	85℃
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.

COIL DATA

23℃

Nominal voltage VDC	Pick-up voltage VDC max.	Drop-out voltage VDC min.	Holding voltage[2] VDC	Coil resistance ×(1±10%) Ω	Power consumption[2] W
24	19.2	1.2	9.6(7.7 to 19.2)	150	Sensitive type: 3.8W/0.61W
24	19.2	1.2	9.6(7.7 to 19.2)	120	Standard type: 4.8W/0.77W
24	19.8	1.2	9.6(7.7 to 19.2)	280	Standard type: 2.06W/0.33W[3]
12	9.6	0.6	4.8(3.85 to 9.6)	37.5	Sensitive type: 3.8W/0.61W
12	9.6	0.6	4.8(3.85 to 9.6)	30	Standard type: 4.8W/0.77W
12	10.2	0.6	4.8(3.85 to 9.6)	70	Standard type: 2.06W/0.33W[3]

Notes: 1) To energize charger module properly apply 120% nominal coil voltage for 200ms.
2) Coil holding voltage is 40% of nominal voltage after apply 120% nominal voltage for 200ms.
3) When placing an order, the special feature code A01 needs to be added.

ORDERING INFORMATION

HF3635 / A250 -12 -2H 2B LP □ T -CXX（XXX）

Type	
Contact voltage	**A250:** AC load
Coil voltage	**12:** 12VDC **24:** 24VDC
Main Contact form	**H:** 1 from A **2H:** 2 from A
Contact Form	**B:** 1 from B **2B:** 2 from B **Nil:** No auxiliary monitoring contacts
Installing form[3]	**LP:** PCB and Bolt **P:** PCB
Coil Power	**L:** Sensitive type **Nil:** Standard type
Contact material	**T:** $AgSnO_2$
Transformer feet	**CXX:** Transformer Code[4] **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) 2H type: Only LP mounting available; H type: Only P mounting available.
4) Only the 2H type supports transformers, with two options available: 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**

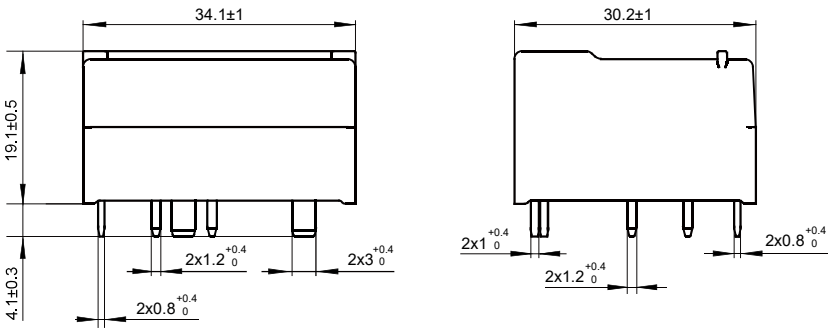
Code	Leakage current transformer	Transformer
C4	ZCT type A	/
C8	/	MCT
C17	ZCT type B(US Standard)	MCT
C22	ZCT type B(EU Standard)	MCT
C23	ZCT type A	MCT
C32	ZCT type B(EU Standard)	/
C37	ZCT type B(US Standard)	/

OUTLINE DIMENSIONS, WIRING DIAGRAM AND TERMINAL FUNCTION DEFINITION

Unit: mm

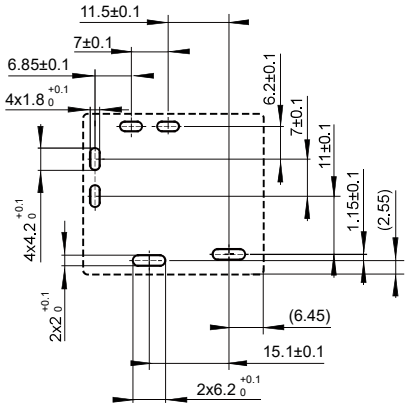
3635/H

Outline Dimensions

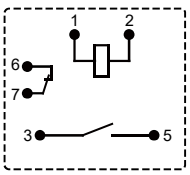


Notes:∗ The additional tin top is max. 1mm.

PCB Layout(Bottom view)



Wiring Diagram(Bottom view)

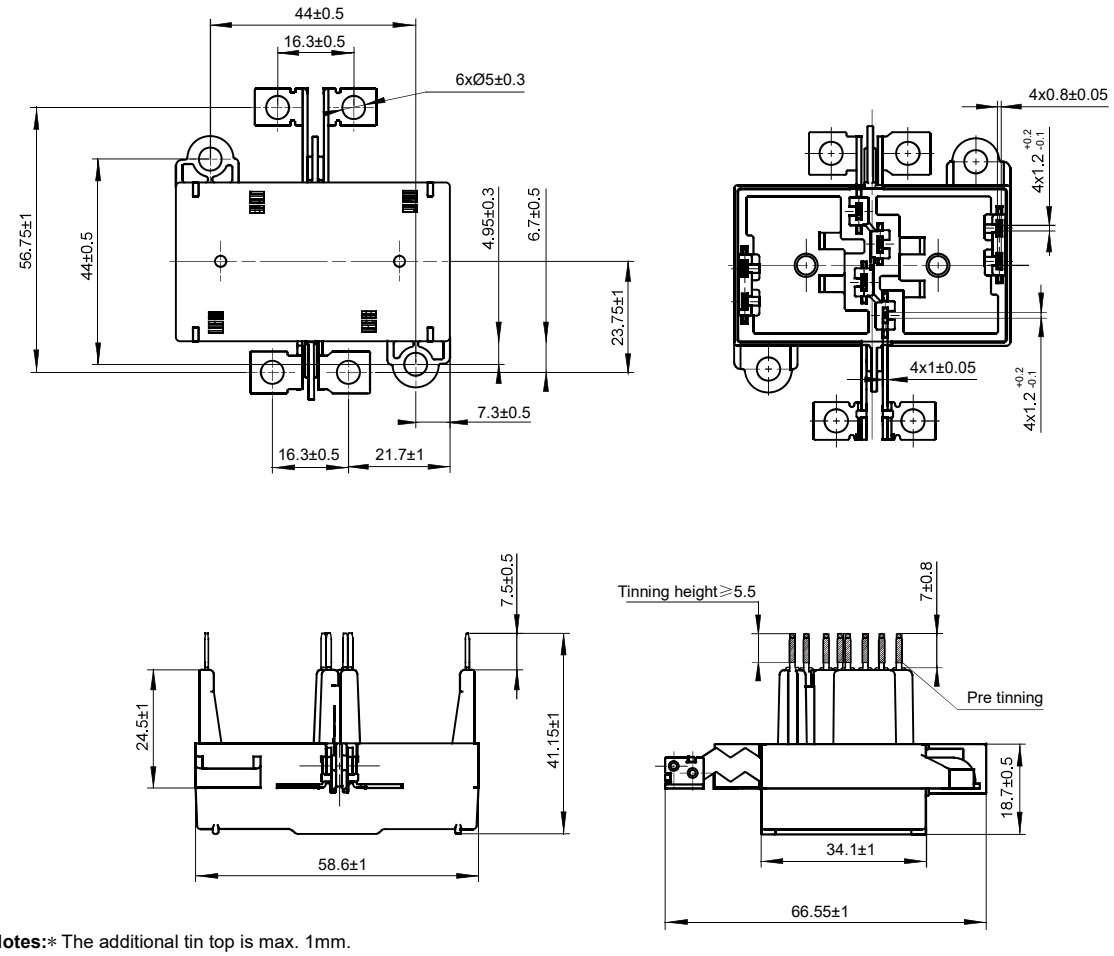


OUTLINE DIMENSIONS, WIRING DIAGRAM AND TERMINAL FUNCTION DEFINITION

Unit: mm

HF3635

Outline Dimensions



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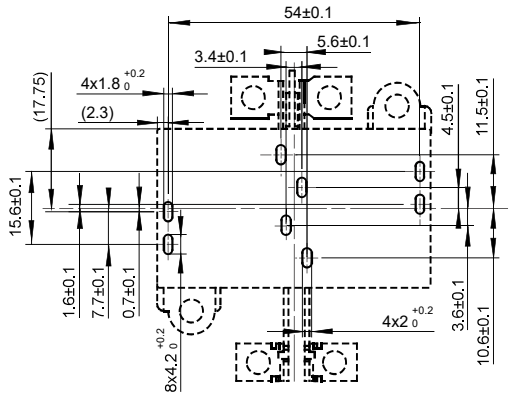
PCB Layout(Bottom view)



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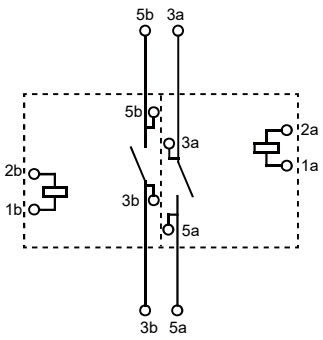
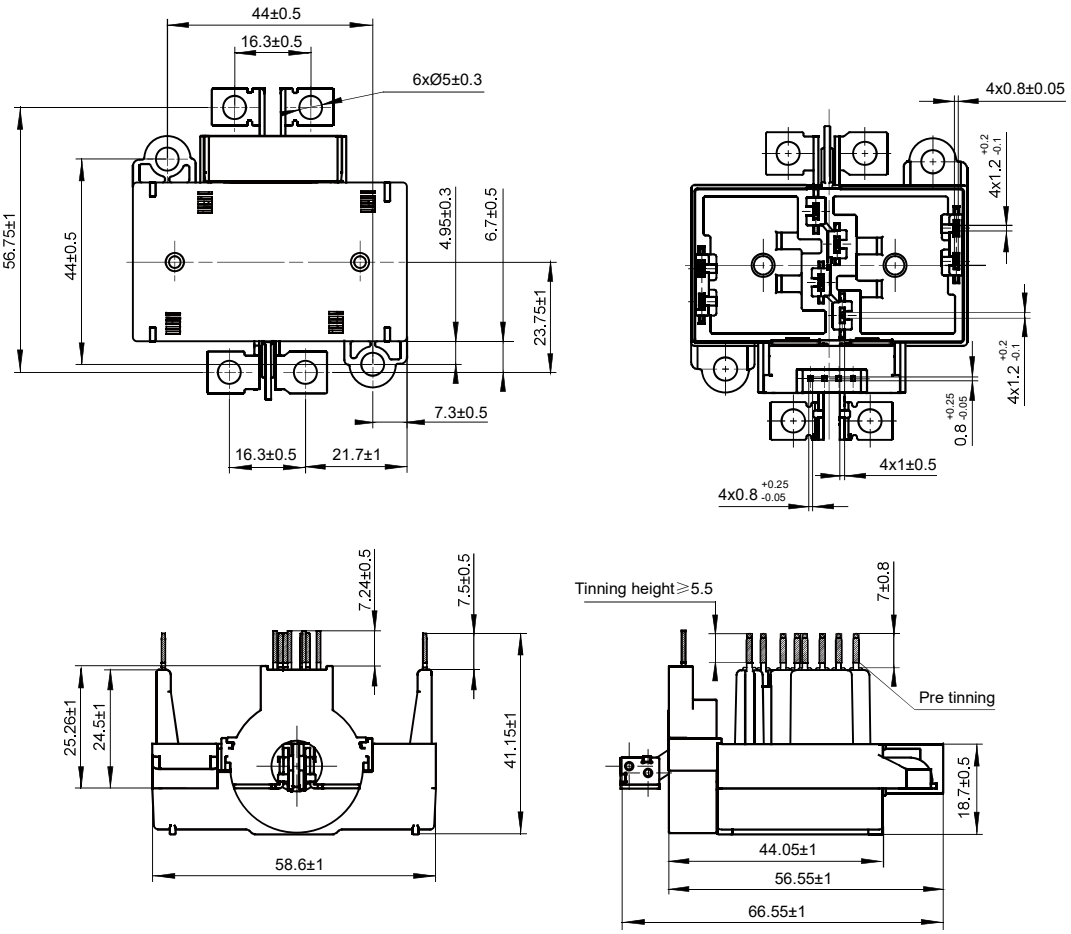


OUTLINE DIMENSIONS, WIRING DIAGRAM AND TERMINAL FUNCTION DEFINITION

Unit: mm

HF3635 Single CT Specifications

Outline Dimensions



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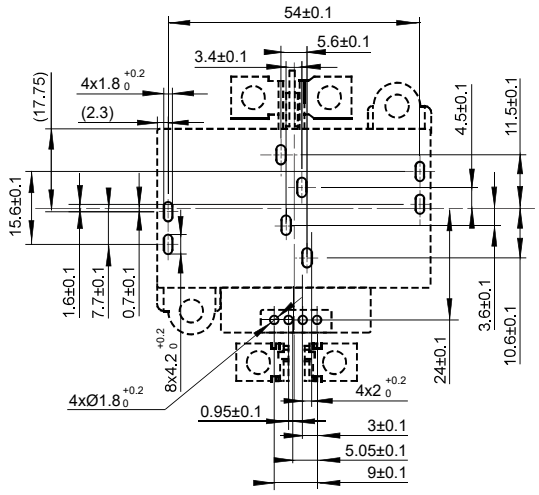
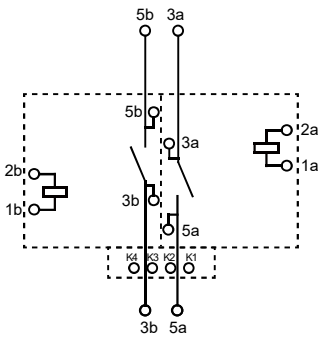
PCB Layout(Bottom view)



Wiring Diagram(Bottom view)

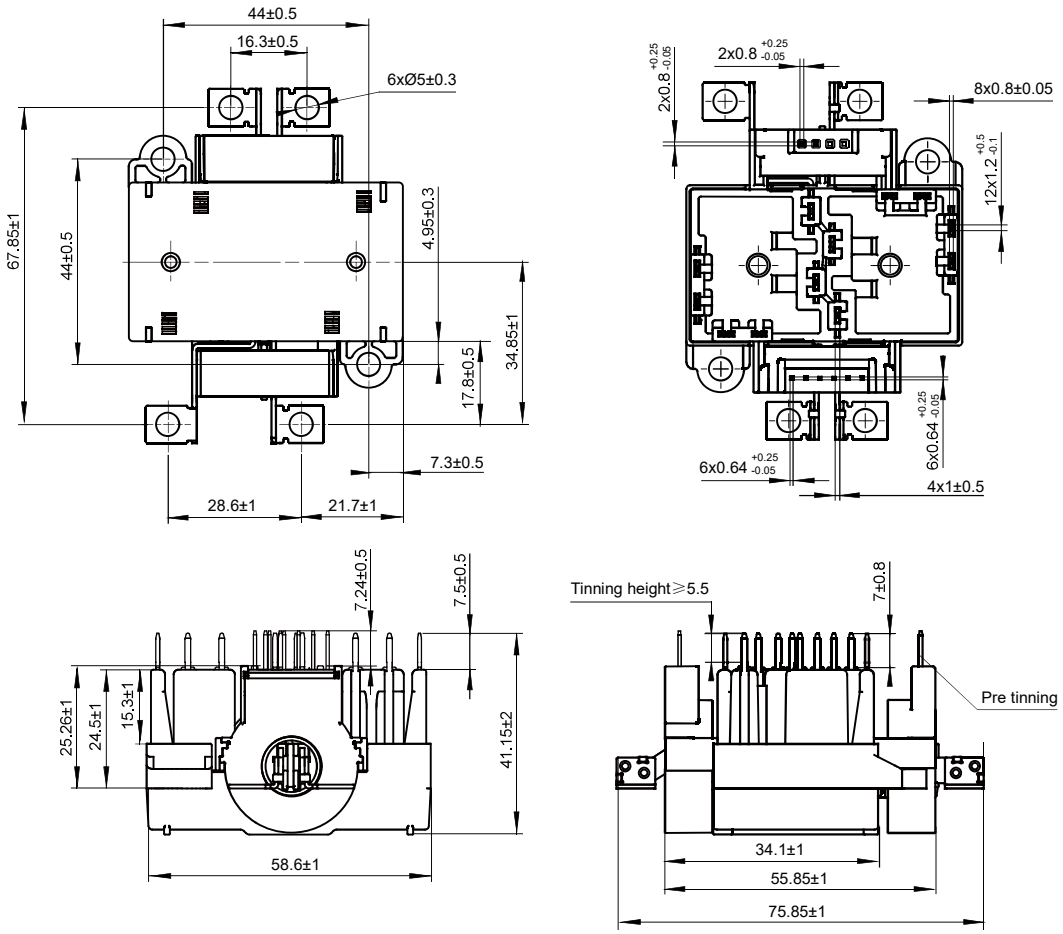


OUTLINE DIMENSIONS, WIRING DIAGRAM AND TERMINAL FUNCTION DEFINITION

Unit: mm

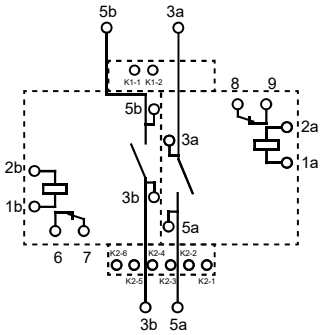
HF3635 Dual CT Specifications

Outline Dimensions



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

Wiring Diagram(Bottom view)



OUTLINE DIMENSIONS, WIRING DIAGRAM AND TERMINAL FUNCTION DEFINITION

Unit: mm

HF3635 Dual CT Specifications

PCB Layout(Bottom view)