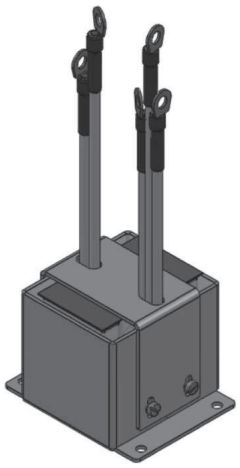
BCT SERIES

Automotive EV/HEV Isolated 3.3kW Battery Charger Transformer

Features

- Design for high performance 3.3kW on-board battery chargers
- Cubic format for higher power density
- Working frequency from 65 to 200kHz
- Reinforced 3kV isolation between primary and secondary
- Primary to secondary creepage distance > 8mm
- High operating temperature range -40 to +125°C
- UL94V-0 and RoHS material
- Design compliant with AEC-Q200 requirements
- No thermal aging effect
- Weight : approx. 0.4kg



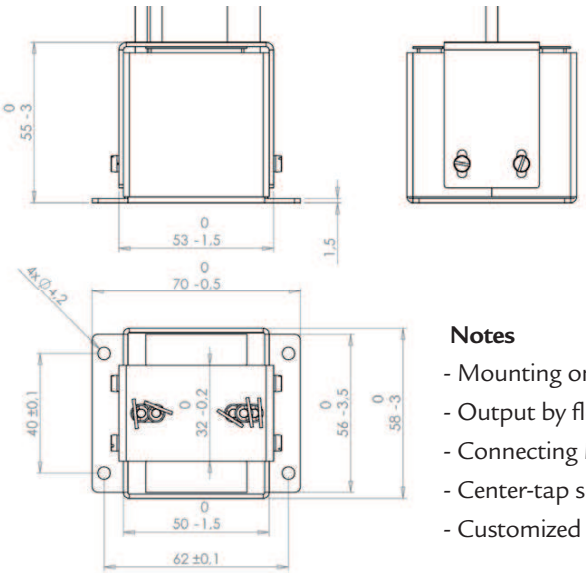
RoHS 2002/95/EC

Pb

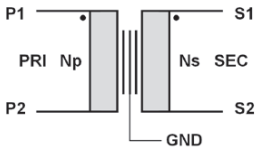
Application

- Power stage after 400V PFC rectification
- Automotive EV/HEV AC/DC on-board battery chargers
- Half- or full-brigde ZVS or LLC resonant topologies
- Industrial high-power SMPS

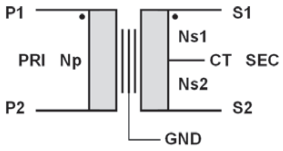
Dimensions (mm)



Electrical Diagram



TOP VIEW



TOP VIEW

Notes

- Mounting onto cold-plate heatsink by 4x M4 screws
- Output by flexible cables protected under sleeve
- Connecting M4 or M5 terminals on demand
- Center-tap secondary side on demand
- Customized case on demand

Electrical specifications

Code	MAX Output Power (kW)	DC-Link Input Voltage (Vdc)	Output Voltage (Vdc)	MAX Output Current (Adc)	Switch. Freq. (kHz)	Topology	Turn Ratio (Pri:Sec)	Magneti-zing Induct.	MAX Leakage Induct.
BCT-001	3.3	390-410	250-430	12	100	Full-Bridge ZVS*	13:18	1mH MIN	2µH
BCT-002	3.3	360-400	260-410	13	65	Full-Bridge ZVS*	17:21+21	1.7mH MIN	3µH
BCT-003	3.3	375-430	275-450	12	90-200	Half-Bridge LLC**	13:22	50µH +/-5%	2µH

(*) A 4 to 6µH resonant inductor in series with the transformer primary winding is recommended for soft switching operation
(**) Resonant tank made of Lr = 12.5µH and Cr = 120nF in series

Notes

(1) All test data are referenced to 25°C ambient temperature
(2) The inductance values are measured at 100kHz/1Vac
(3) The isolation is 100% tested at 3kVac/50Hz/2sec/3mA
(4) The Pri/Sec creepage distance is guaranteed > 8mm
(5) The component must be properly cooled down by mounting onto a water-plate heatsink at +85°C MAX
(6) Other winding arrangements available on demand