



## **Power Transformer for HV/EV On-Board-Charger**

Preliminary data sheet

**$L_{pri} = 280 \text{ uH}$ , Turns ratio 1:1.06**

**Ordering code: T7011-01**

Date: 2012-09-05

Version: 01

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### Construction

- PQ50/40 ferrite core
- Primary winding: litz wire with triple insulation tape
- Secondary winding: litz wire with triple insulation tape

### Features

- 100 kHz switching frequency
- Turns ratio N1:N2: 1:1.06
- Maximum limited component temperature 150°C
- RoHS compatible

### Applications

- Transformer for on board charging used in hybrid or electrical vehicles

### Terminals

- Termination with PTH

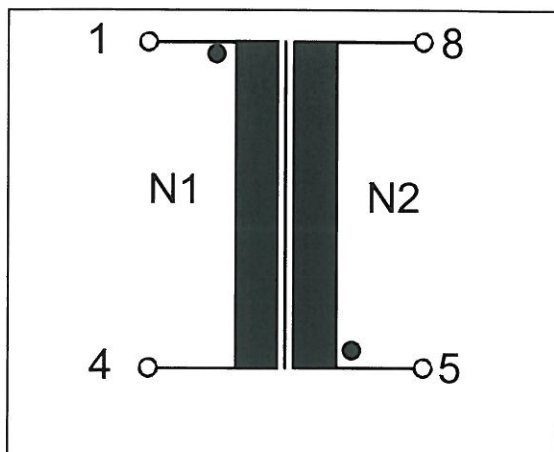
### Delivery mode

- tbd

### Remark

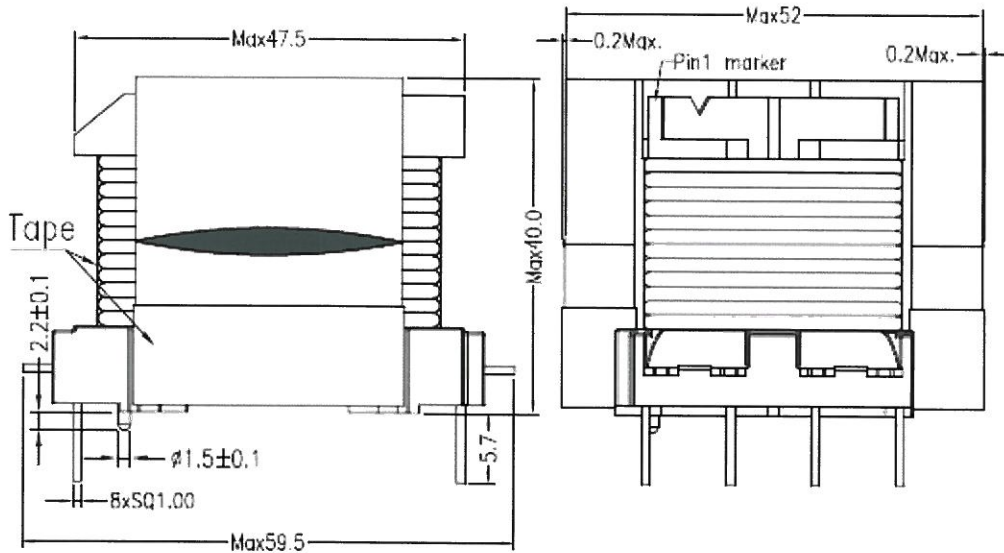
- bottom side of the core is isolated with insulation tape

### Circuit diagram

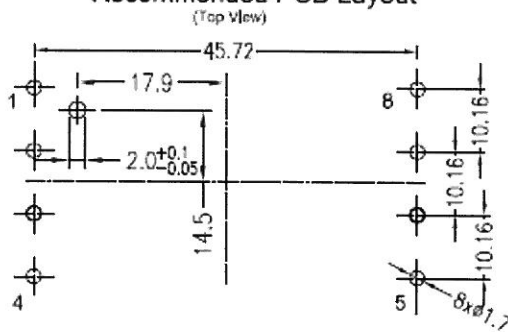


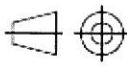
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**Dimensional drawing**



**Recommended PCB Layout**



	±0.2		Unit: mm
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**Technical data and measuring conditions**

specified @ 25°C if not mentioned otherwise, all values without tolerance are typical values

Inductance L	280 $\mu$ H $\pm$ 10% measured at terminals [1, 4], measuring conditions 100 kHz, 100 mV
Turns ratio	1:1.06
Leakage inductance $L_{leak}$	1.2 $\mu$ H measured at terminals [1, 4], terminals [5, 8] shortened, measuring conditions 100 kHz, 1 V
Couple capacitance $C_{ww}$	240 pF measured at terminals [1, 8], measuring conditions 100 kHz, 1 V
DC resistance, primary $R_{DC, pri}$	18 m $\Omega$ measured at terminals [1, 4]
DC resistance, secondary $R_{DC, sec}$	17 m $\Omega$ measured at terminals [5, 8]
High voltage: primary - secondary	2500 V, 50 Hz, 1 s
High voltage: primary - core	1500 V, 50 Hz, 1s
High voltage: secondary - core	1500 V, 50 Hz, 1s
Switching frequency	100 kHz
Power (output)	3300 W
Operating temperature range	-40°C / 150°C
Weight	Approx. 257 g

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### Cautions and warnings

- Additional information is contained in our data books, which are also available on the internet. Particular attention should be paid to the derating curves given there. The soldering conditions given there should also be observed. **Temperatures** quoted in relation to wave soldering **refer to the pin, not to the housing**.
- If the components are to be washed varnished, it is necessary to check whether any washing varnish agent that is used has a negative effect on the wire insulation, any plastics that are used, or on glued joints. In particular, it is possible for washing varnish agent residues to have a negative effect in the long-term on wire insulation.
- The following points must be observed if the components are potted in customer applications:
  - Many potted materials shrink as they harden. They therefore exert a pressure on the plastic housing or core. This pressure can have a deleterious effect on electrical properties and, in extreme cases, can damage the core or plastic housing mechanically;
  - It is necessary to check whether the potting material used attacks or destroys the wire insulation, plastics or glue;
  - The effect of the potting material can change the high frequency behaviour of the components.
- Ferrites are sensitive to direct impact. This can cause the core material to flake, or lead to breakage of the core.
- Even for customer specific products, conclusive validation of the components in the circuit can only be carried out by the customer.



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