

Inductors

SMT current sense transformers, EE 5.0 core

Series/Type: B82801B

Date: February 2011



SMT current sense transformers

B82801B

EE 5.0

Application

- Switching power supplies
- Feedback control
- Overload sensing
- Load drop/shut down detection

Features

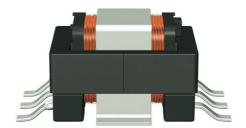
- Very low DC resistance
- Different turns ratios
- Small package
- Other pinning on request
- RoHS compatible

Marking

Middle block of ordering code

Delivery mode and packing units

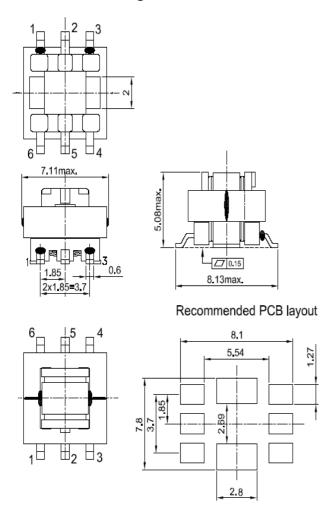
- 16 mm blister tape, 330 mm Ø reel
- Carton packaging
- Packing units: 900 pcs./reel; 7200 pcs./carton

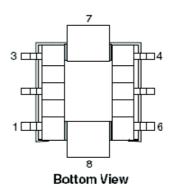




EE 5.0

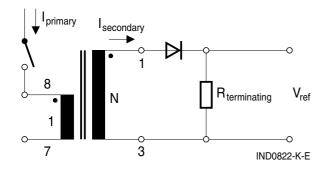
Dimensional drawing

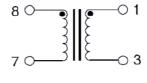




Dimensions in mm

Application circuit and pinning







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Technical data and measuring conditions

Frequency range	50 kHz 1 MHz					
Hi-pot	1000 V AC, 2 s (winding to winding)					
Inductance L (1-3)	100 kHz, 1.0 V, +25 °C					
DC resistance R _{max}	Measured at +25 °C					
Sensed current	The max. primary current of 20 A causes approx. 40 °C temperature rise					
Solderability	\geq 99.9 Sn, lead-free. Or Sn96.5Ag3.0Cu0.5: (245 \pm 5) °C, (3 \pm 0.3) s Wetting of soldering area \geq 95% (to IEC 60068-2-58)					
Resistance to soldering heat	(260 \pm 5 °C), (10 \pm 1 s) to IEC 60068-2-58					
Storage conditions	-20 °C +40 °C, ≤ 75% RH (packaged)					
Test voltage V _{test}	50 Hz, 1 s					
Operating temperature range	−40 °C +130 °C					
Weight	Approx. 0.4 g					



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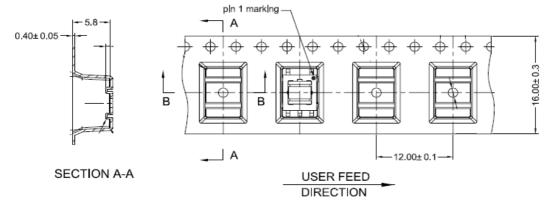
Characteristics and ordering codes

L _{min}	Turns ratio	DC resistance R_{max} (m Ω)		Ordering code
μΗ	N _p : N _s	primary	secondary	
80	1:20	0.6	400	B82801B0803A020
180	1:30	0.6	870	B82801B0184A030
320	1:40	0.6	1140	B82801B0324A040
500	1:50	0.6	1500	B82801B0504A050
720	1:60	0.6	1980	B82801B0724A060
980	1:70	0.6	3000	B82801B0984A070
2000	1:100	0.6	5500	B82801B0205A100
3000	1:125	0.6	6500	B82801B0305A125
9150	1:200	0.6	33240	B82801B0925A200

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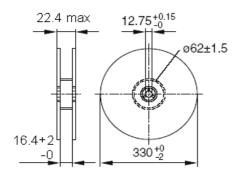
Taping and packing

Blister tape



Dimensions in mm

Reel

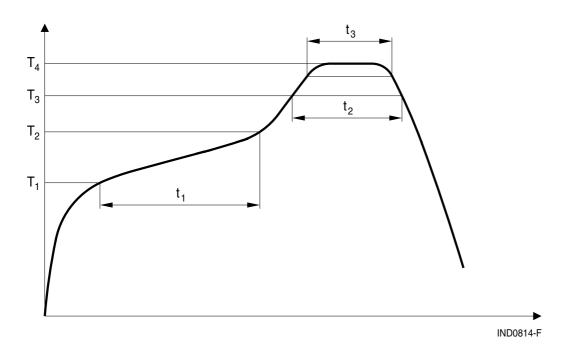


Dimensions in mm

EE 5.0

Recommended reflow soldering curve

Pb-free solder material (based on JEDEC J-STD 020D)



T ₁	T ₂	T ₃	T ₄	T ₁	T ₂	T ₃
°C	°C	°C	°C	sec	sec	sec
150	200	217	250	<110	<90	20 40

Max. time from +25 °C to T: 300 seconds

Max. 3 reflow cycles



Cautions and warnings

- Please note the recommendations in our Inductors data book (latest edition) and in the data sheets.
 - Particular attention should be paid to the derating curves given there. Derating must be applied
 in case the ambient temperature in the application exceeds the rated temperature of the
 component.
 - Ensure the operation temperature (which is the sum of the ambient temperature and the temperature rise caused by losses / self-heating) of the component in the application does not exceed the maximum value specified in the climatic category.
 - The soldering conditions should also be observed. Temperatures quoted in relation to wave soldering refer to the pin, not the housing.
- If the components are to be washed varnished it is necessary to check whether the 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 potting 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 component in the circuit can only be carried out by the customer.



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