



Inductors

SMT gate drive transformers

Series/Type: EP5
Ordering code: B82804A
Date: October 2010
Version: 1

Construction

- EP5 ferrite core
- 6 gull wing terminals

Features

- Height: 5.4 max
- Footprint: 8.1 x 6.7 mm
- Low leakage inductance
- Low inter-winding capacitance
- High SRF value
- High isolation between primary and secondary side
- RoHS compatible

Applications

- Gate drive transformers
- General purpose (non-automotive): isolated AC/DC, DC/DC converters

Marking

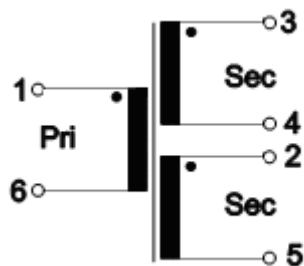
- Manufacturer, middle block of ordering code, date code, pin1 marker

Delivery mode and packing unit

- 16-mm blister tape, 330 mm Ø reel
- Packing unit: 850 packages/reel

Schematic

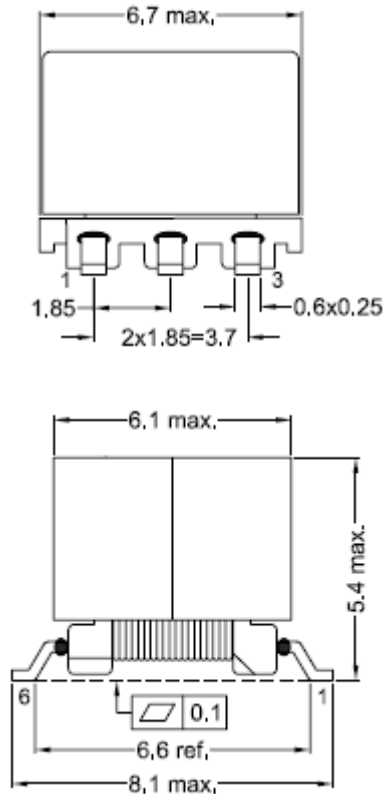
- Figure A



- Figure B



Dimensional drawings



Technical data and measuring conditions

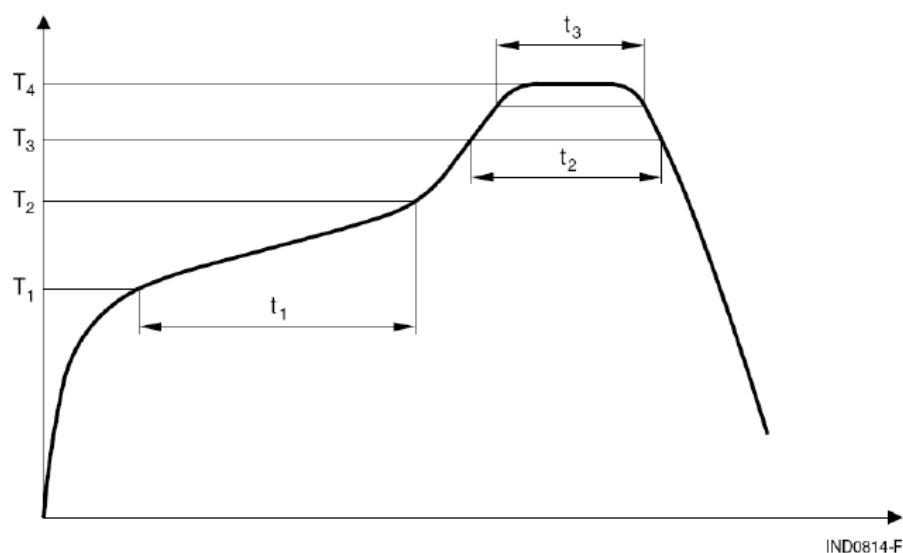
| | |
|---|------------------------------------|
| Main inductance L | 100 kHz, 100 mV |
| Stray inductance Primary L_{stray} | 100 kHz, 100 mV, secondary shorted |
| Resistance R_{DC} | Measured at 25 °C |
| Capacitance C_i Pri-Sec | 100 kHz, 100 mV |
| Resonance frequency f_{res} | Primary winding |
| Test voltage V_{test} | DC values |
| Operating temperature range | -40 °C ... +125 °C |

Characteristics and ordering codes

| L μH | Figure | Turns ratio pri-sec | L_{stray} μH | $R_{\text{DC-pri}}$ Ω | $R_{\text{DC-sec}}$ Ω | C_i pF | f_{res} MHz | V_{test} V DC | E^*dt μVs | Ordering code |
|---------|--------|---------------------------|--------------------------|--------------------------|--------------------------|-------------|-------------------------|---------------------------|----------------|-----------------|
| 300 | A | 2.5:1:1 | 0.9 | 1.8 | 0.3 | 27 | 2.6 | 1500 | 23.8 | B82804A0304A225 |
| 317 | A | 2:1:1 | 0.6 | 1.6 | 0.45 | 22 | 2 | 1500 | 24.5 | B82804A0324A220 |
| 264 | A | 1:1:1 | 0.3 | 1.5 | 1.5 | 95 | 2.9 | 1500 | 22.4 | B82804A0264A210 |
| 350 | B | 1:1 | 1 | 1 | 0.65 | 75 | 1.2 | 1500 | 25.8 | B82804A0354A110 |
| 690 | B | 1.5:1 | 2.5 | 1.65 | 0.86 | 27 | 0.7 | 1500 | 40.8 | B82804A0694A115 |
| 473 | B | 2.5:1 | 1.5 | 1.5 | 0.3 | 25 | 1.7 | 1500 | 30.6 | B82804A0474A125 |

Recommended solder reflow profile

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

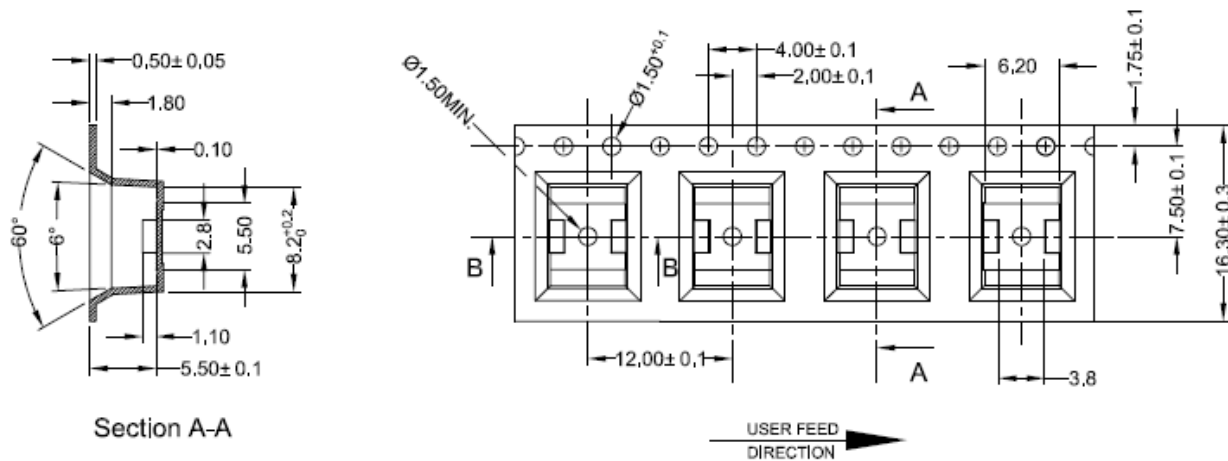


| T_1 (°C) | T_2 (°C) | T_3 (°C) | T_4 (°C) | t_1 (s) | t_2 (s) | t_3 (s) |
|------------|------------|------------|------------|------------|------------|-----------|
| 150 | 200 | 217 | 245 | 60 ... 200 | 60 ... 150 | 30 |

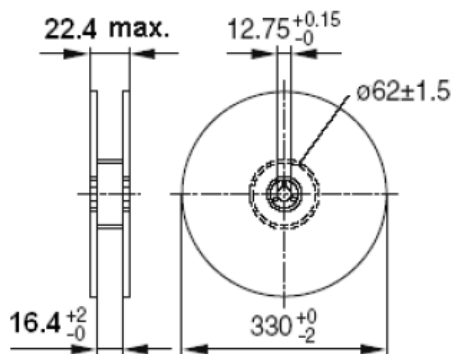
 Max. time from 25 °C to T_4 : 480 seconds

Max. number of reflow cycles: 3

Blister tape detail



Reel size and detail



Cautions and warnings

- Please note the recommendations in our Inductors data book (latest edition or in the Internet) and in the data sheets.
Particular attention should be paid to the derating curves given there. 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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