



## **SMT gate drive transformers**

### **EP5 series**

**Series/Type:**        **B82804A**  
**Date:**                **October 2012**

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**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**

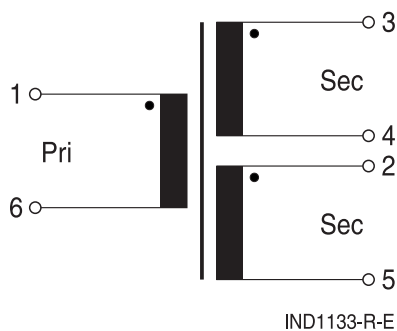
- Manufacturer, middle block of ordering code, date code, pin1 marker

**Delivery mode and packing unit**

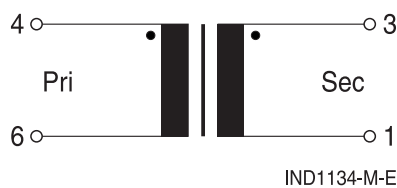
- 16-mm blister tape, 330 mm Ø reel
- Packing unit: 850 packages/reel

**Schematic**

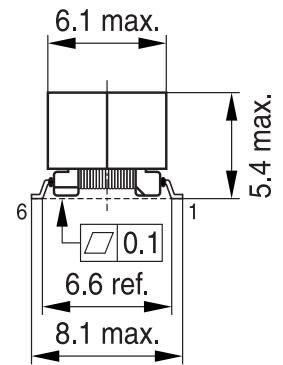
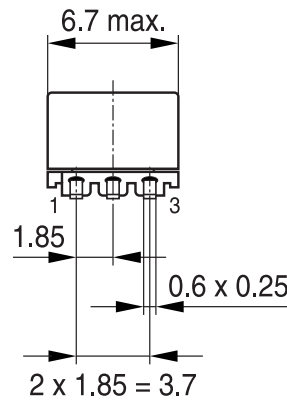
- Figure A



- Figure B

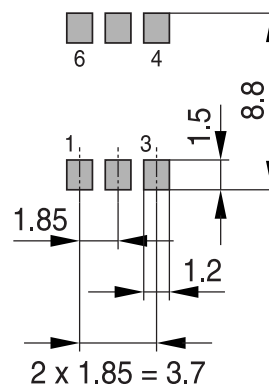


**Dimensional drawings**



IND1139-Q

**Layout recommendation (Top view)**



IND1135-P-E

## SMT gate drive transformers

EP5

B82804A

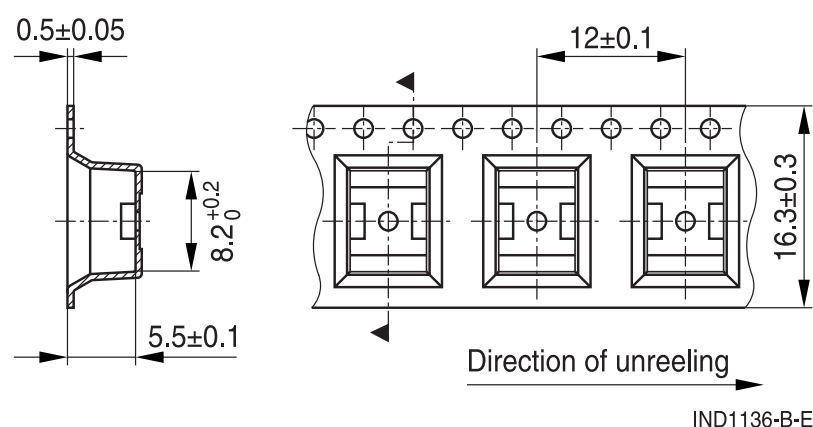
### Technical data and measuring conditions

|   |   |
|---|---|
| Main inductance L                           | 100 kHz, 100 mV   |
| Stray inductance Primary $L_{\text{stray}}$ | 100 kHz, 100 mV, secondary shorted                                      |
| Resistance $R_{\text{DC}}$                  | Measured at +25 °C  |
| Resistance to reflow soldering heat         | In accordance with JEDEC J-STD 20D<br>+245 °C for 10 seconds (2 cycles) |
| Capacitance $C_i$ Pri-Sec                   | 100 kHz, 100 mV   |
| Resonance frequency $f_{\text{res}}$        | Primary winding   |
| Test voltage $V_{\text{test}}$              | DC values   |
| Operating temperature range                 | -40 °C ... +125 °C  |

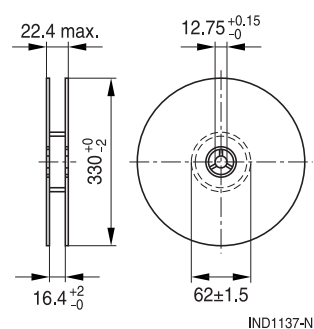
### Characteristics and ordering codes

| $L_{\text{min}}$ | Figure | Turns ratio pri-sec | $L_{\text{stray,max}}$ | $R_{\text{DC-pri,max}}$ | $R_{\text{DC-sec,max}}$ | $C_{i,max}$ | $f_{\text{res,min}}$ | $V_{\text{test}}$ | $E \cdot dt$   | Ordering code   |
|------------------|--------|---------------------|------------------------|-------------------------|-------------------------|-------------|----------------------|-------------------|----------------|-----------------|
| $\mu\text{H}$    |        |                     | $\mu\text{H}$          | $\Omega$                | $\Omega$                | pF          | MHz                  | V DC              | $\mu\text{Vs}$ |                 |
| 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 |

### Blister tape detail



### Reel size and detail



### 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.
  - 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.

Washing processes may damage the product due to the possible static or cyclic mechanical loads (e.g. ultrasonic cleaning). They may cause cracks to develop on the product and its parts, which might lead to reduced reliability or lifetime.
- 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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