ERU chokes

ERU 33, PTH flat wire high current inductors

Series/Type: **B82559A*A033**
Ordering code:

Date: August 2022

Rated inductance 3.2 ... 10.0 µH
Saturation current 32 ... 83 A

Construction

- High temperature ferrite core
- Magnetically shielded
- Helical winding
- Self-leaded construction

Features

- High rated current
- Extremely low DC resistance
- Very low profile and extremely small footprint
- RoHS-compatible
- Easily customized
- AEC-Q200 qualified

Applications

Energy storage chokes for

- Buck/boost choke for 48 V boardnet converter
- DC-DC converters

Terminals

- Lead-free tinned

Assembly

- Additional fixation to the PCB required to fulfil the requirements of AEC-Q200

Remark

- To keep the maximum limited component temperature it might be necessary to connect the choke to a cooling system or to establish other means of additional cooling.

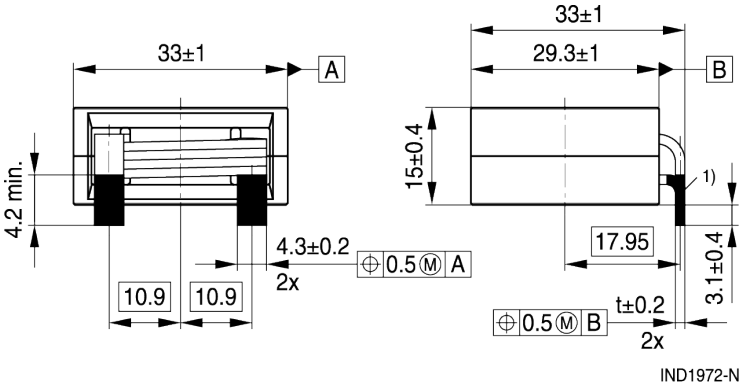
Marking

- Manufacturer, ordering code, date of manufacture and production place (YYWWD/X), plant internal coding, Pin 1 marker

Delivery mode and packing units

- Blister tray

Dimensional drawing



1) Tinned in this area.

Part tolerances to ISO 2768-cL / ISO 8015.
Size ISO 14405 Ⓔ
All dimensions in mm

IND1276-L-E

- Dimensions without tolerance are typical.
- () Dimensions for reference.
- All dimensions in mm.
- Chamfer (w/o) on the core edges allowed.

Technical data and measuring conditions

Inductance L	Measured at 100 kHz, 1 V, +25 °C
Inductance tolerance	±12%
Saturation current I_{Sat}	Current that will result in an approximately 20% drop in the inductance values at the specified temperature.
Rated current I_R	Current that will cause a Δ40K self-heating at room temperature
DC resistance R_{DC}	Measured at +25 °C, typical
Self-resonant frequency	< 2 MHz
High voltage: N1 – core	200 V DC, 1 s
Solderability (test of wettability of the pins)	(245 ±5) °C, (3 ±0.3) s, Wetting of soldering area ≥95% (based on IEC 60068-2-20, solder bath method)
Operating temperature	– 40 °C … +150 °C (component)
Storage conditions (packaged)	– 25 °C … +40 °C, ≤ 75% RH

Characteristics and ordering codes

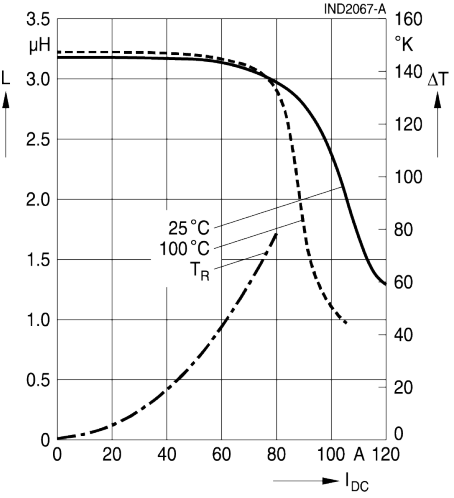
L µH	$I_{Sat,25°C}$ A	$I_{Sat,100°C}$ A	I_R A	R_{DC} (typ.) mΩ	Pin thickness (t) 	Approx. weight g	Ordering code
3.2	95.0	83.0	58.0	0.85	1.50 ±0.20	60	B82559A4322A033
3.5	87.0	77.0	57.5	0.85	1.50 ±0.20	60	B82559A4352A033
4.7	81.0	71.0	45.5	1.20	1.25 ±0.20	60	B82559A5472A033
6.0	62.0	55.0	50.0	1.20	1.25 ±0.20	60	B82559A5602A033
6.8	56.0	47.0	47.5	1.20	1.25 ±0.20	60	B82559A5682A033
10.0	36.0	32.0	46.0	1.20	1.25 ±0.20	60	B82559A5103A033

Inductance L versus DC load current I_{DC}

The temperature rise ΔT is measured at an ambient temperature of +25 °C. A current is applied for 30 minutes and the temperature is measured on top of the inductor which is mounted on a printed circuit board. No forced air cooling is applied.

The inductance vs current curves are generated by measuring the inductors at +25 °C and +100 °C.

B82559A4322A033



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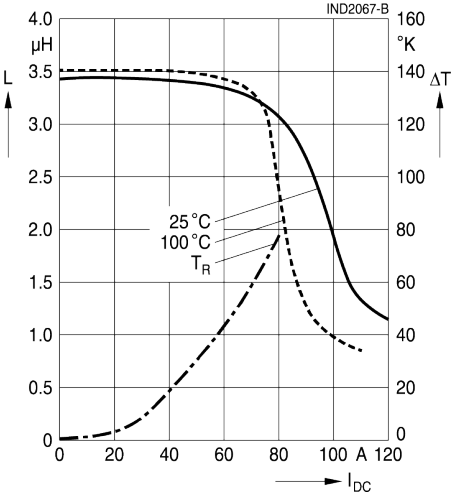

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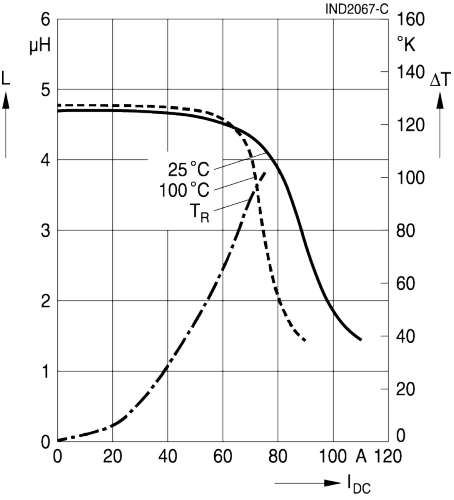

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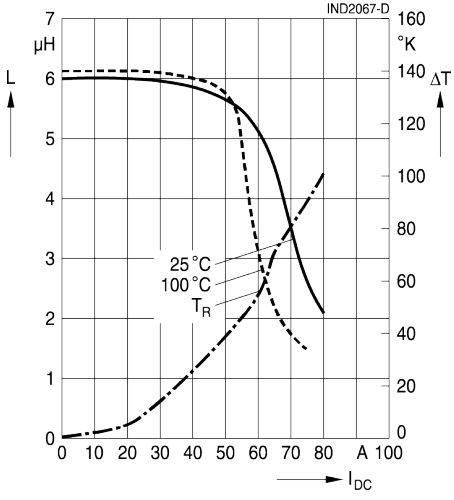

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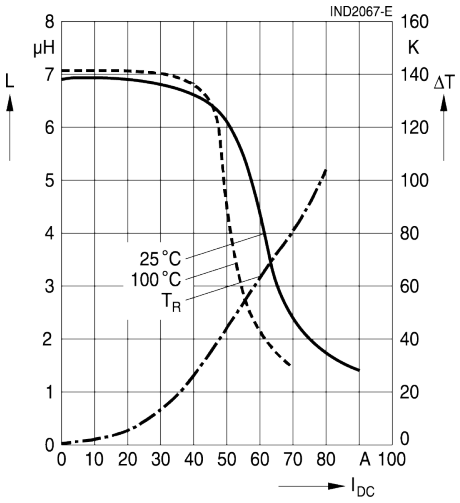

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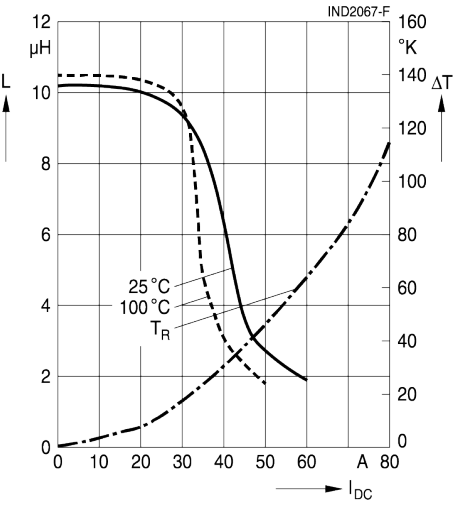
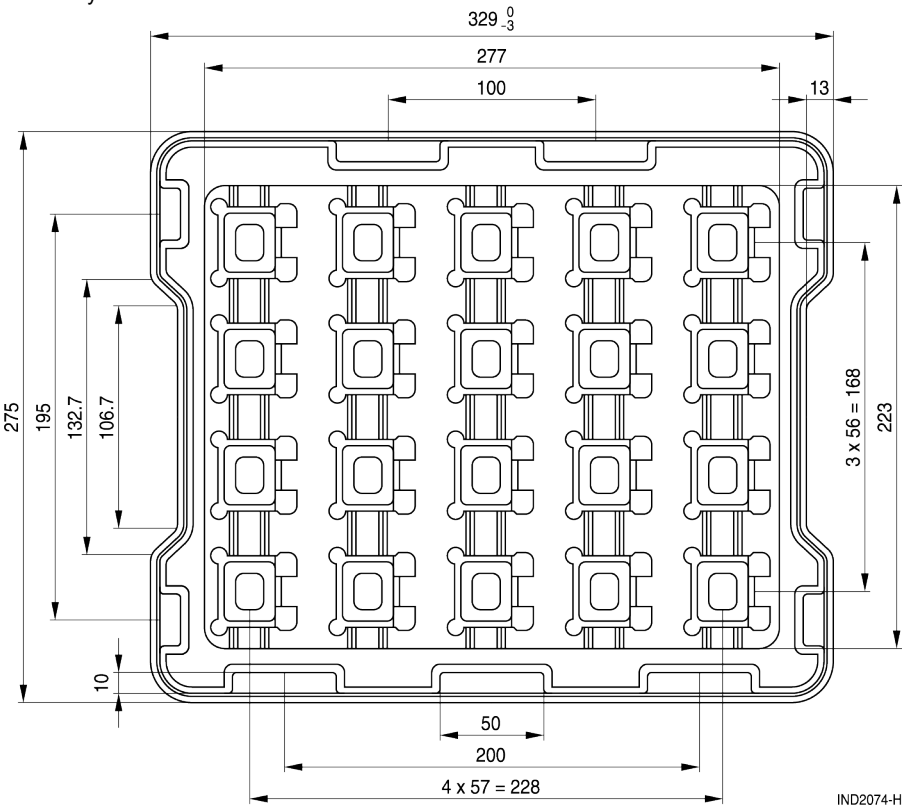
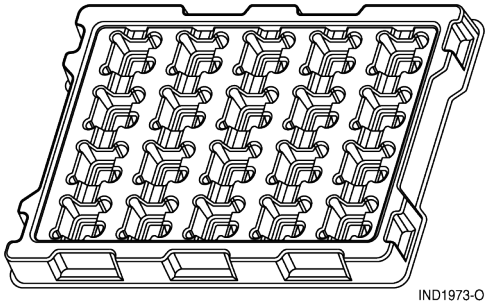


Packing

Blister tray





Packaging unit: 20 pcs / blister tray; 5 trays; 100 pcs / carton box

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, wire insulation, plastics or glue.
  - The effect of the potting material can change the high-frequency behaviour of the components.
  - Many coating materials have a negative effect (chemically and mechanically) on the winding wires, insulation materials and connecting points. Customers are always obligated to determine whether and to what extent their coating materials influence the component.
    Customers are responsible and bear all risk for the use of the coating material. TDK Electronics does not assume any liability for failures of our components that are caused by the coating material.
- Ceramics / 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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2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified.** In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.

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Important notes

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