ERU chokes

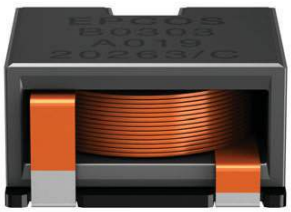
ERU 19, SMT flat wire high current inductors

Series/Type: **B82559B*A019**

Date: August 2020

SMD

Rated inductance 1.0 .... 30 µH
Saturation current 11.5 ... 48.1 A



Construction

- High temperature ferrite core
- Magnetically shielded
- Helical winding
- Self-leaded construction
- Under body termination
- 3 pins for improved reliability

Features

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

Applications

Energy storage chokes for
- DC-DC converters
- VRM modules
- POL converters
- Solar converters

Terminals

Lead-free tinned

Marking

Manufacturer, ordering code, date of manufacture and production place (YYWWD/X),

Delivery mode and packing units

- Blister tape

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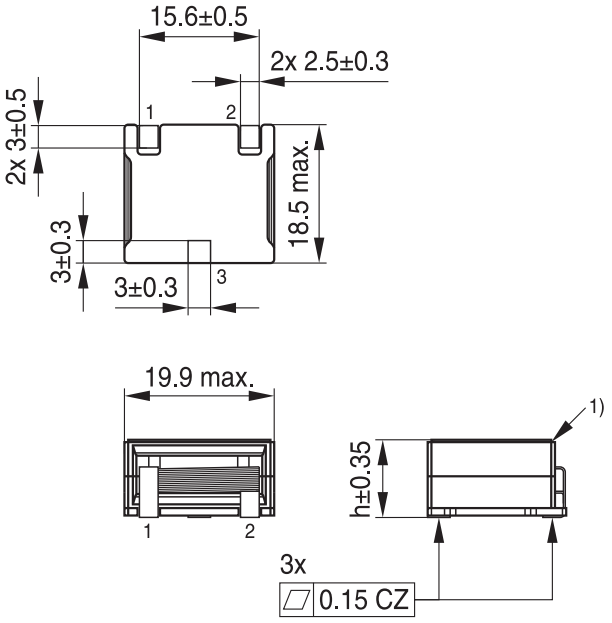
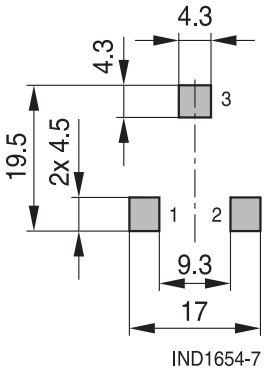
Dimensional drawing and layout recommendation



1) Chamfer (w/o) on the core edges allowed

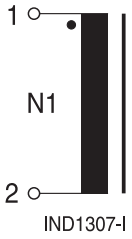
IND1653-6-E



IND1654-7

Dimensions in mm

Circuit diagram



IND1307-I

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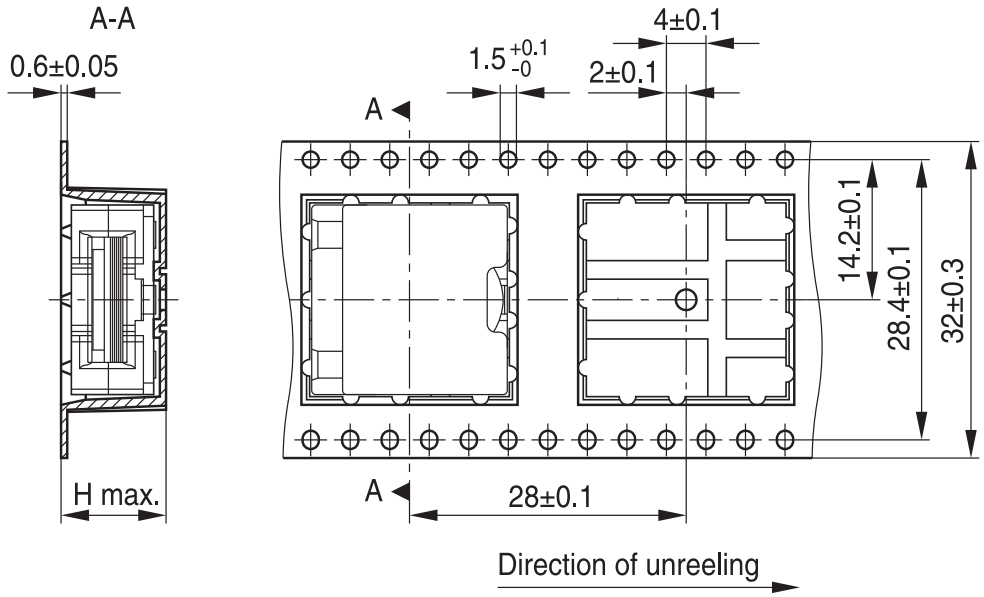
Taping and packing

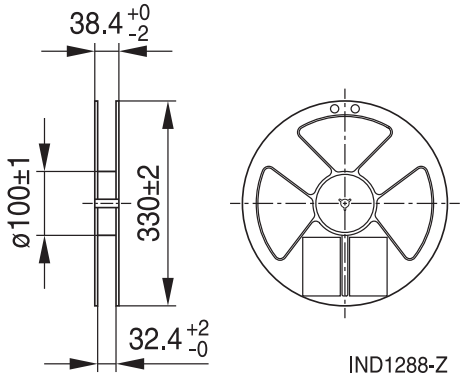
Tape:



IND1301-C-E

Dimensions in mm

Reel:



IND1288-Z

Dimensions in mm

Height (mm)		Packing unit
component h nom.	cavity H (blister tape) max.	pcs. per reel
7.65	8.0	220
8.65	9.0	210
9.25	9.6	200
10.25	10.6	180

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Technical data and measuring conditions

Rated inductance L_R	Measured at 100 kHz, 0.1 V, +25 °C
Inductance tolerance	±10%
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 Δ40 K self-heating at room temperature
DC resistance R_{DC}	Measured at +25 °C, tolerance ±10%, typical values
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 60068-2-58, solder bath method)
Resistance to soldering heat	To JEDEC J-STD 020D (Tc: +245 °C on pin)
Operating temperature	–40 °C … +150 °C (component)
Storage conditions (packaged)	–25 °C … +40 °C, ≤ 75% RH

Characteristics and ordering codes

L_R	$I_{sat,\ 25°C}$	$I_{sat,\ 100°C}$	I_R	R_{DC} (typ)	Height h (nom.)	Approx. weight	Ordering code
µH	A	A	A	mΩ	mm	g	
1.0	46.6	41.3	36.3	0.95	7.65	9.1	B82559B2102A019
1.5	48.1	41.8	30.2	1.35	8.65	10.3	B82559B3152A019
2.2	43.6	37.6	27.2	1.80	9.25	11.3	B82559B4222A019
3.3	35.1	31.9	25.1	2.25	10.25	12.7	B82559B5332A019
4.7	25.5	22.2	25.1	2.25	10.25	12.7	B82559B5472A019
6.8	21.3	18.8	12.7	7.60	7.65	9.1	B82559B6682A019
10.0	15.8	14.6	11.7	8.80	7.65	9.3	B82559B7103A019
15.0	14.7	12.9	10.7	11.00	8.65	10.5	B82559B9153A019
20.0	13.5	11.8	9.5	13.50	9.25	11.2	B82559B0203A019
30.0	11.5	10.1	8.6	17.00	10.25	12.6	B82559B0303A019

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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 monted 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.

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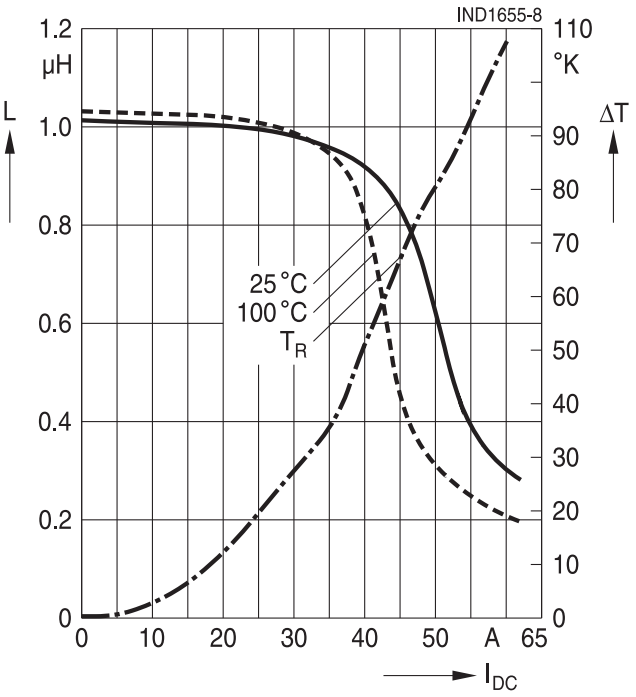

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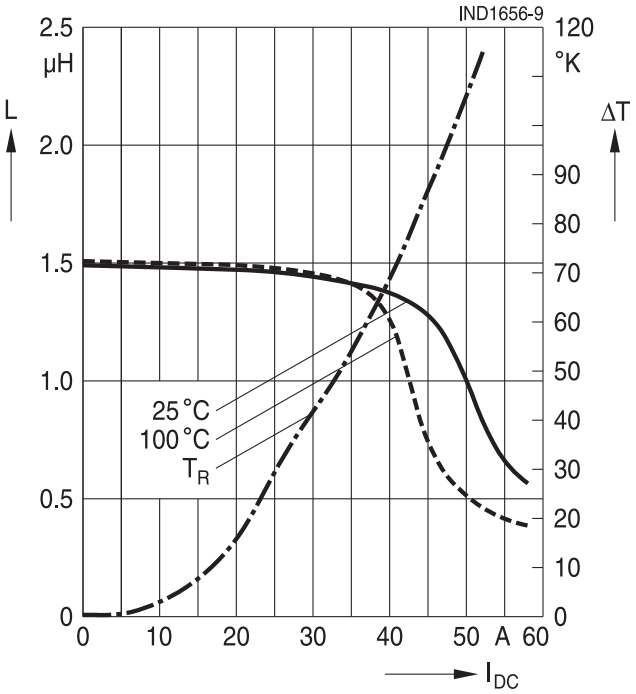

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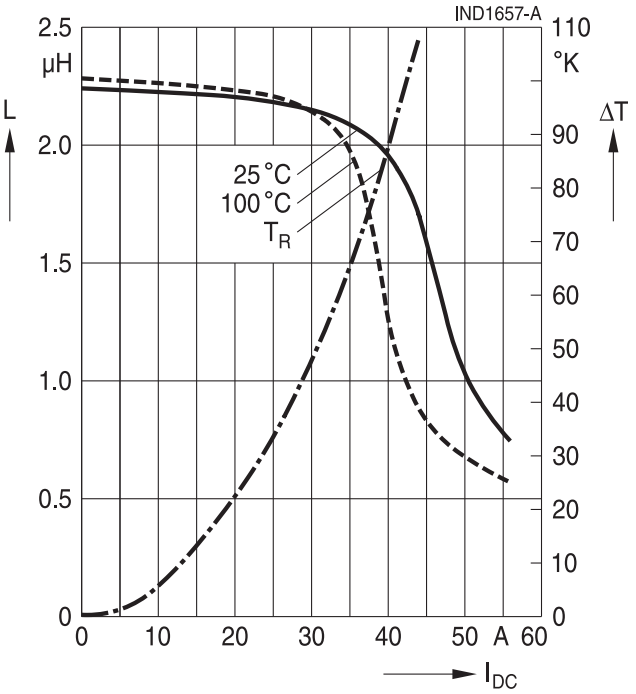

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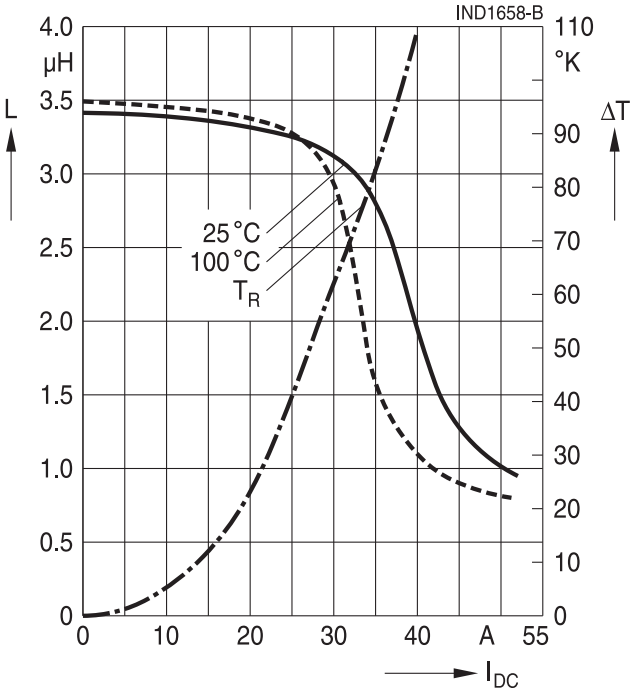

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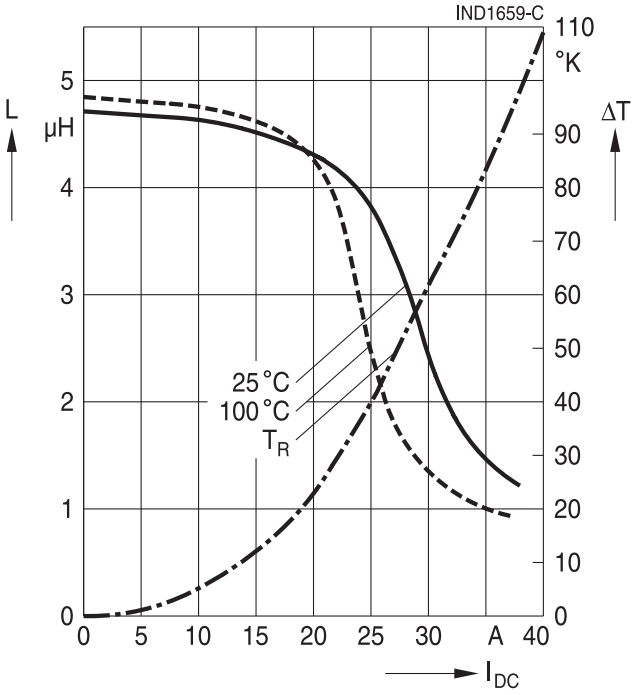

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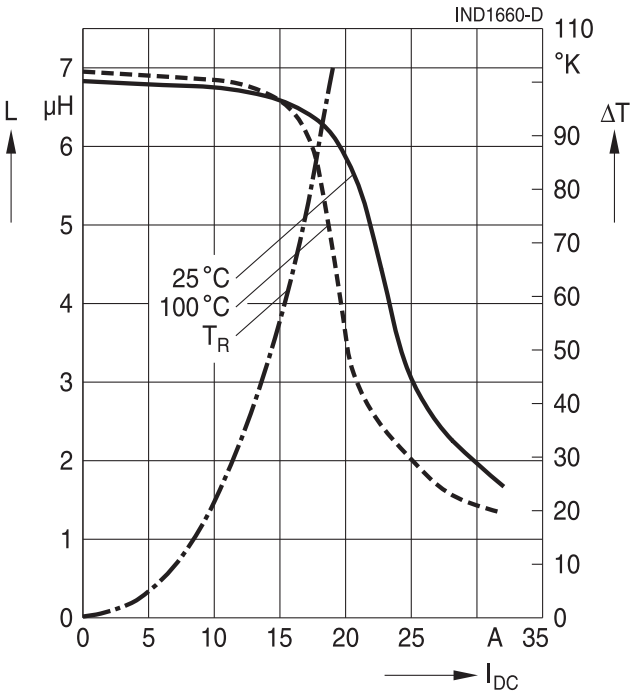

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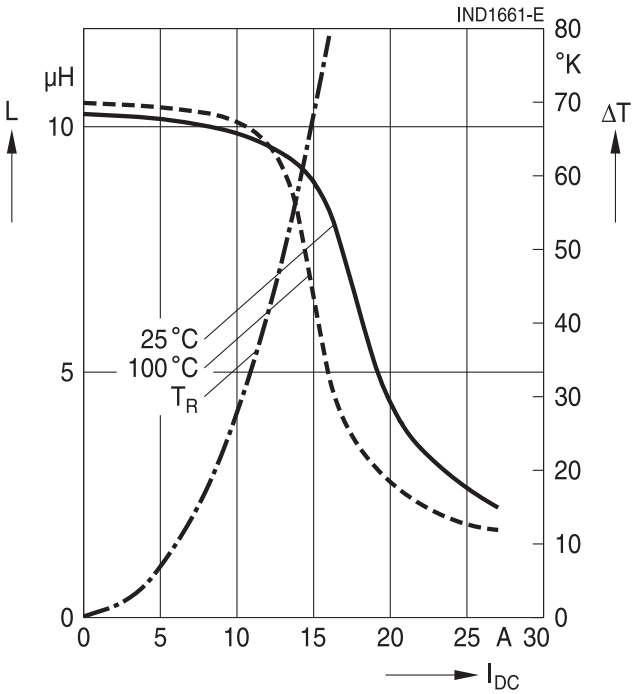

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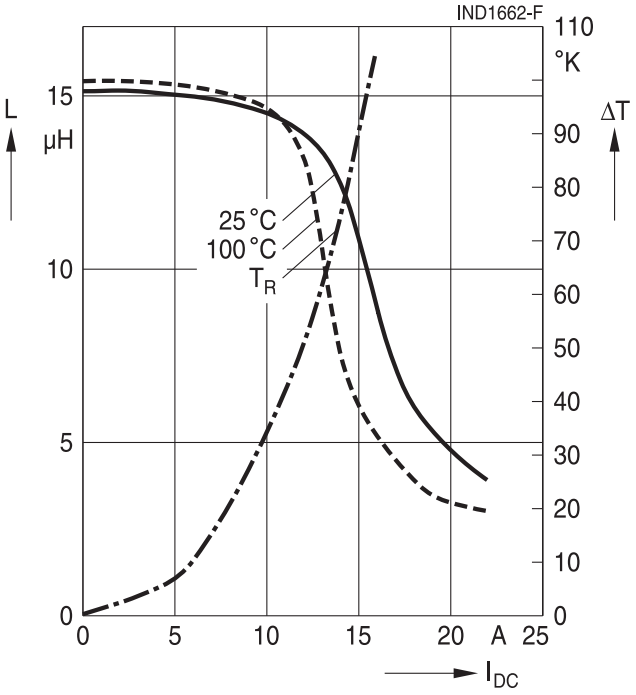

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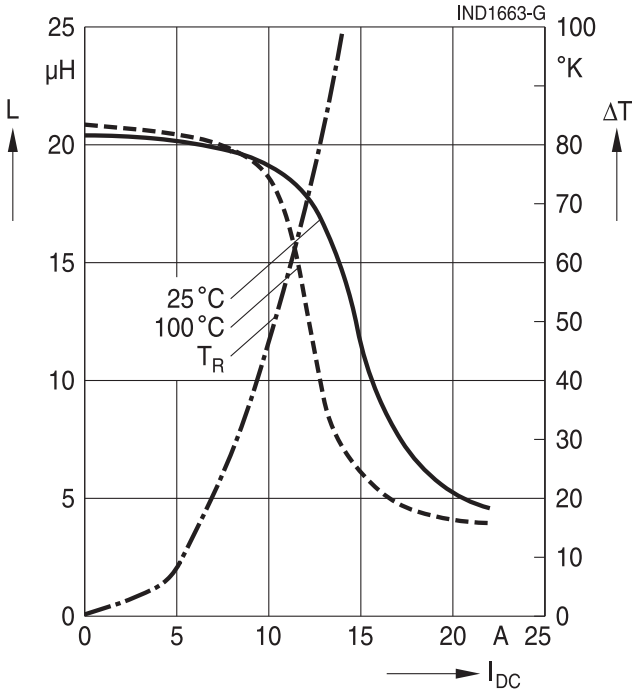

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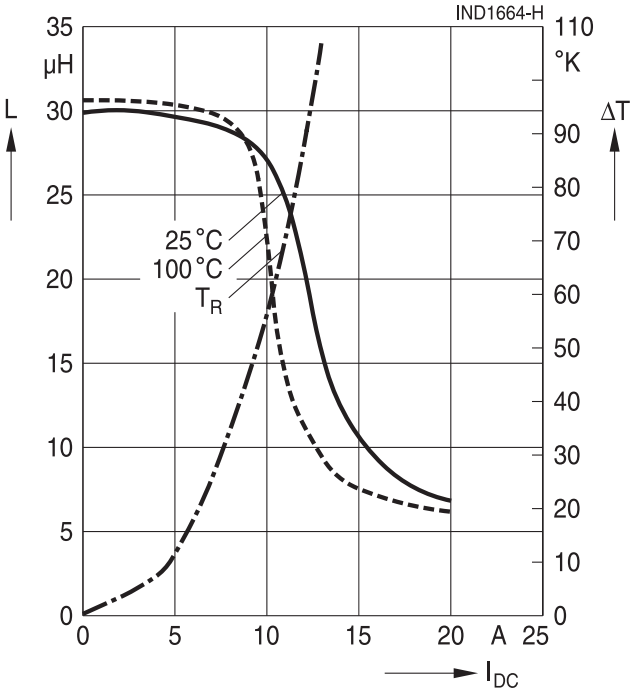

Cautions and warnings

- 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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