

## **Power line chokes**

Sine-wave chokes 0.8 ... 2.7 A, 0.5 ... 3.0 mH, +40 °C

 Series/Type:
 B82614

 Date:
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B82614

## **Power line chokes**

Sine-wave chokes

Rated voltage 250 V AC Rated current 0.8 ... 2.7 A Rated inductance 0.5 ... 3.0 mH

## Construction

- Single choke
- Air gapped rectangular ferrite core
- Closed polycarbonate coil former (UL 94 V-0)
- Without encapsulation
- 4-section winding

#### Features

- High resonance frequency due to 4-section winding
- Low saturation effects due to gapped core
- Suitable for wave soldering
- Design complies with EN 60938-2 (VDE 0565-2)
- Recyclable owing to omission of encapsulation and glue
- RoHS-compatible

#### Applications

- Switch-mode power supplies with current pump
- Output filter in switch-mode applications
- Reduction of harmonics and PFC

## Terminals

- Base material CuNi18Zn20
- Layer composition Ni, Sn
- Hot-dipped
- Pins 0.7 × 0.7 (mm)
- Lead spacing 12.5 × 15 (mm)

## Marking

Manufacturer, rated inductance, rated current, ordering code, date of manufacture (WWYY)

#### **Delivery mode**

Blister tray in cardboard box



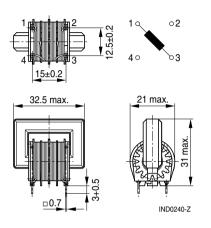
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## Power line chokes

#### Sine-wave chokes

## Dimensional drawing and pin configuration



Tolerances to ISO 2768-C unless otherwise noted.

Please read *Cautions and warnings* and *Important notes* at the end of this document.



## Power line chokes

#### Sine-wave chokes

## Technical data and measuring conditions

Rated voltage V <sub>R</sub>	250 V AC (50/60 Hz)		
Rated temperature T <sub>R</sub>	+40 °C		
Rated current I <sub>R</sub>	Referred to 50 Hz and rated temperature		
Rated inductance L <sub>R</sub>	Defined at zero DC current bias Measured with Agilent 4284A at 0.1 mA, +20 °C Measuring frequency: $L_R \le 1 \text{ mH} = 100 \text{ kHz}$ $L_R > 1 \text{ mH} = 10 \text{ kHz}$		
Inductance tolerance	±30% at +20 °C		
Inductance at rated current	$\begin{array}{l} \mbox{Measured at DC magnetic bias with } I_{R} \mbox{ with Agilent} \\ 4284A \mbox{ at } 0.1 \mbox{ mA}, +20 \mbox{ °C}, \mbox{ typical values} \\ \mbox{Measuring frequency: } L_{R} \leq 1 \mbox{ mH} = 100 \mbox{ kHz} \\ L_{R} > 1 \mbox{ mH} = 10 \mbox{ kHz} \end{array}$		
DC resistance R <sub>typ</sub>	Measured at +20 °C, typical values		
Solderability (lead free)	Sn96.5Ag3.0Cu0.5: +(245 ±5) °C, (3 ±0.3) s Wetting of soldering area ≥ 95% (to IEC 60068-2-20, test Ta)		
Resistance to soldering heat (wave soldering)	+(260 ±5) °C, (10 ±1) s (to IEC 60068-2-20, test Tb)		
Climatic category	40/125/56 (to IEC 60068-1)		
Storage conditions (packaged)	–25 °C … +40 °C, ≤ 75% RH		
Weight	Approx. 30 g		

## Characteristics and ordering codes

I <sub>R</sub>	L <sub>R</sub>	L at I <sub>R</sub> , typ.	R <sub>typ</sub>	Ordering code
А	mH	mH	Ω	
0.8	3.0	2.9	1.9	B82614R2801A030
1.0	2.0	1.9	1.3	B82614R2102A030
1.7	1.5	0.95	0.61	B82614R2172A030
2.0	1.0	0.75	0.43	B82614R2202A030
2.4	0.75	0.50	0.33	B82614R2242A030
2.7	0.5	0.42	0.23	B82614R2272A030



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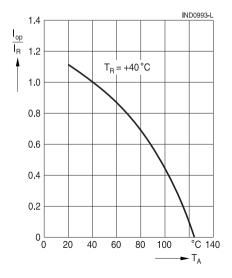
## Sine-wave chokes

Impedance |Z| versus frequency f

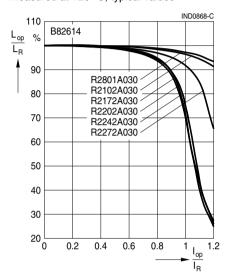
measured at +20 °C, typical values

## IND0866-L 10<sup>6</sup> B82614 Ω |Z| 10<sup>5</sup> 10<sup>4</sup> R2801A030 R2102A030 10<sup>3</sup> R2172A030 R2202A030 R2242A030 R2272A030 10<sup>2</sup> 10<sup>5</sup> 10<sup>6</sup> Hz 10<sup>7</sup> - f

Current derating Iop/IR versus ambient temperature T<sub>A</sub>



Relative inductance Lop/LR versus relative current I<sub>op</sub>/I<sub>R</sub>



measured at +20 °C, typical values

#### **Cautions and warnings**

#### Current-compensated ring core double chokes

- 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.

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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