

# CTX17-18913-R

## Multi-phase power inductor



### Product features

- High current multi-phase inductor
- 100 nH per phase coupled inductor
- Ferrite core material
- Patents pending
- Halogen free, lead free, RoHS compliant

### Applications

- For exclusive use with Volterra® or Maxim® VPR-Devices

### Environmental Data

- Storage temperature range (Component):  
-40 °C to +125 °C
- Operating temperature range: -40 °C to +125 °C  
(ambient plus self-temperature rise)
- Solder reflow temperature:  
J-STD-020 (latest revision) compliant



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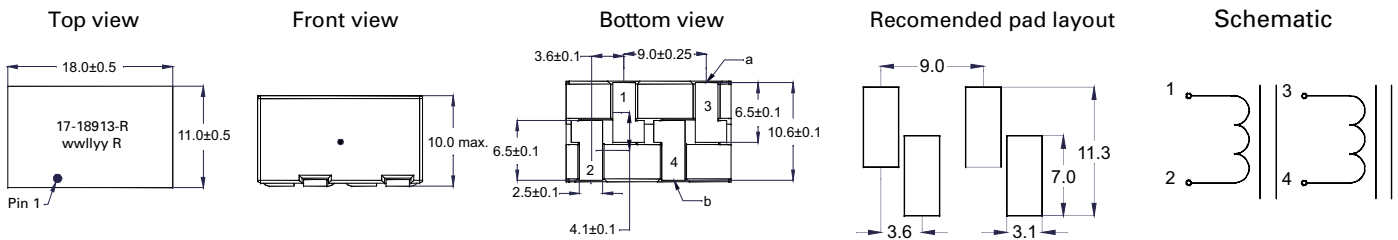
**Product Specifications**

| Part Number <sup>5</sup> | Inductor phases | OCL min <sup>1</sup><br>@ 0.0 Adc<br>(nH) | OCL min <sup>1</sup><br>@ I <sub>sat</sub> 1 <sup>3</sup><br>(nH) | I <sub>sat</sub> 1 <sup>3</sup><br>(A) | OCL min <sup>2</sup><br>@ I <sub>sat</sub> 2 <sup>3</sup><br>(nH) | I <sub>sat</sub> 2 <sup>3</sup><br>(A) | SCL <sup>4</sup><br>(nH) | I <sub>sat</sub> 3 <sup>3</sup><br>(A) | DCR ±10%<br>@ +20 °C<br>(mΩ) |
|--------------------------|-----------------|---|---|--|---|--|--------------------------|--|------------------------------|
| CTX17-18913-R            | 2               | 380                                       | 200   | 30                                     | 200   | 23                                     | 100                      | 90                                     | 0.3                          |

1. Open Circuit Inductance (OCL) Test parameters: 1 MHz, 0.1 Vrms, +25 °C
2. Open Circuit Inductance (OCL) Test parameters: 1 MHz, 0.1 Vrms, +105 °C
3. Isat1: Peak current at which OCL drops to 200 nH min @ +25 °C  
Isat2: Peak current at which OCL drops to 200 nH min @ +105 °C  
Isat3: Peak current at which SCL drops approximately 20% @ +105 °C
4. Short Circuit Inductance (SCL) Test parameters: 1 MHz, 0.1 Vrms, 0.0 Adc @ +25 °C ±20% short pins 1 and 4, measure pins 2 and 3 and divide by 2.

5. This device is licensed for use only when incorporated within a voltage regulator employing power regulating devices manufactured by Volterra Semiconductor, LLC or Maxim Integrated Devices, Inc. No license is granted expressly or by implication to use this device with power regulating devices manufactured by any company other than Volterra or Maxim.

**Dimensions (mm)**



DCR measured from point "a" to point "b"

Part marking: Pin 1 dot, 17-18913-R, wwlllyy = date code, R = revision level

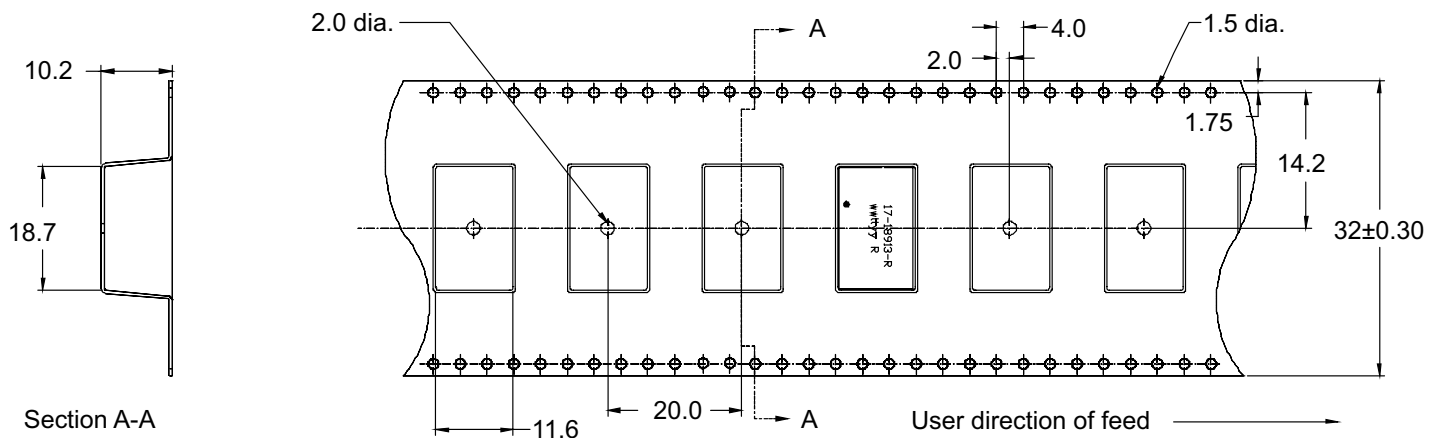
Tolerances are ±0.25 millimeters unless stated otherwise.

All soldering surfaces to be coplanar within 0.13 millimeters.

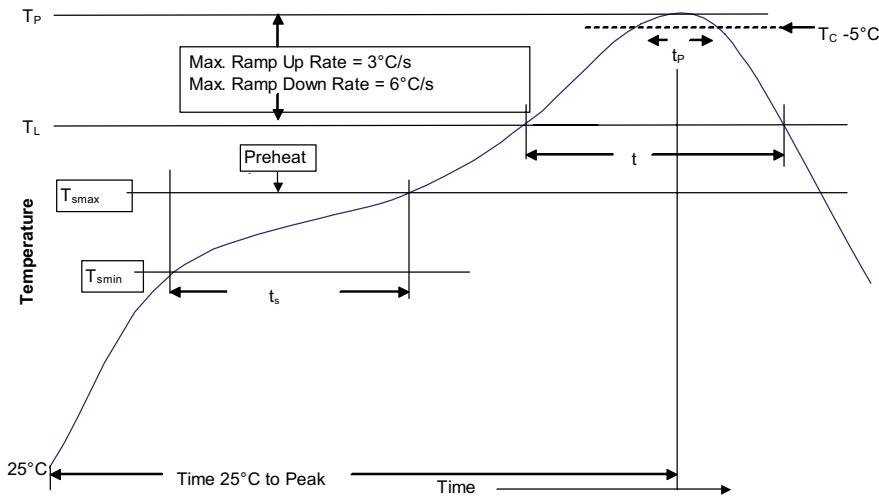
Do not route traces or vias underneath the inductor

**Packaging information (mm)**

Supplied in tape and reel packaging, 200 parts per 13" diameter reel.



**Solder reflow profile**



**Table 1 - Standard SnPb Solder (T<sub>C</sub>)**

| Package Thickness | Volume mm <sup>3</sup> <350 | Volume mm <sup>3</sup> ≥350 |
|-------------------|-----------------------------|-----------------------------|
| <2.5mm)           | 235°C                       | 220°C                       |
| ≥2.5mm            | 220°C                       | 220°C                       |

**Table 2 - Lead (Pb) Free Solder (T<sub>C</sub>)**

| Package Thickness | Volume mm <sup>3</sup> <350 | Volume mm <sup>3</sup> 350 - 2000 | Volume mm <sup>3</sup> >2000 |
|-------------------|-----------------------------|-----------------------------------|------------------------------|
| <1.6mm            | 260°C                       | 260°C                             | 260°C                        |
| 1.6 – 2.5mm       | 260°C                       | 250°C                             | 245°C                        |
| >2.5mm            | 250°C                       | 245°C                             | 245°C                        |

**Reference JEDEC J-STD-020**

| Profile Feature  | Standard SnPb Solder  | Lead (Pb) Free Solder  |
|--|---|--|
| Preheat and Soak   | <ul style="list-style-type: none"> <li>Temperature min. (T<sub>smin</sub>)</li> <li>Temperature max. (T<sub>smax</sub>)</li> <li>Time (T<sub>smin</sub> to T<sub>smax</sub>) (t<sub>s</sub>)</li> </ul> | <ul style="list-style-type: none"> <li>100°C</li> <li>150°C</li> <li>60-120 Seconds</li> </ul> |
| Average ramp up rate T <sub>smax</sub> to T <sub>p</sub>   | 3°C/ Second Max.  | 3°C/ Second Max.   |
| Liquidous temperature (T <sub>L</sub> )  | 183°C   | 217°C  |
| Time at liquidous (t <sub>L</sub> )  | 60-150 Seconds  | 60-150 Seconds   |
| Peak package body temperature (T <sub>p</sub> )*   | Table 1   | Table 2  |
| Time (t <sub>p</sub> )** within 5 °C of the specified classification temperature (T <sub>C</sub> ) | 20 Seconds**  | 30 Seconds**   |
| Average ramp-down rate (T <sub>p</sub> to T <sub>smax</sub> )                                      | 6°C/ Second Max.  | 6°C/ Second Max.   |
| Time 25°C to Peak Temperature  | 6 Minutes Max.  | 8 Minutes Max.   |

\* Tolerance for peak profile temperature (T<sub>p</sub>) is defined as a supplier minimum and a user maximum.  
\*\* Tolerance for time at peak profile temperature (t<sub>p</sub>) is defined as a supplier minimum and a user maximum.

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Printed in USA  
Publication No. 10272—BU-MC15056  
November 2015

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