

Coiltronics CTX01-19089-R

Dual conductor, high current power inductor



Product description

- Dual conductor, two-turn construction
- 5.0x8.6mm footprint surface mount package in a 6.6mm height
- Ferrite core material
- Halogen free, lead free, RoHS compliant

Applications

- Designed specifically for use with Picor® Cool-Power® ZVS Buck-Boost Regulator Family (Picor part number Series PI37xx)

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Environmental data

- Storage temperature range (Component): -55°C to +125°C
- Operating temperature range: -55°C to +125°C (ambient + self-temperature rise)
- Solder reflow temperature: J-STD-020D compliant



Powering Business Worldwide



The Coiltronics brand of magnetics (formerly of the Bussmann Division of Cooper Industries) is now part of Eaton's Electrical Group, Electronics Division.

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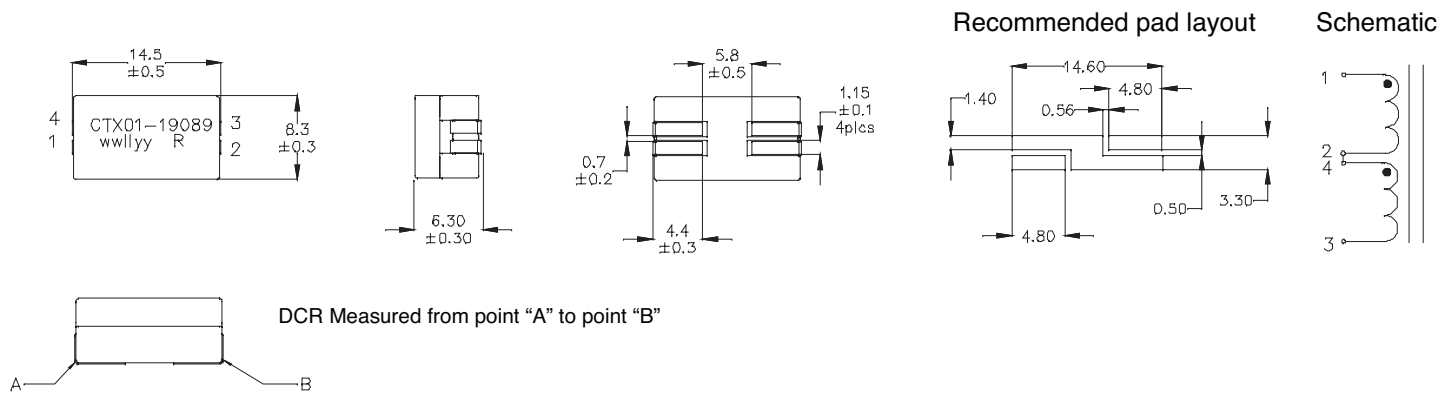
Product specifications

| Part Number ⁵ | OCL ¹ (nH) | I _{rms} ² (Amps) | I _{sat} ³ (Amps) | DCR @ 20°C ⁴ | Q minimum reference only ⁶ |
|--------------------------|--------------------------|---|---|----------------------------|--|
| CTX01-19089-R | 500 | 20 | 40 | 1.15 ± 0.173 (mΩ) | 135 |

- Open Circuit Inductance (OCL) Test Parameters: 1MHz, 0.1V_{rms}, 0.0Adc, 25°C ±10% (Pins 1-3, short 2-4)
- I_{rms}: DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed 125°C under worst case operating conditions verified in the end application.

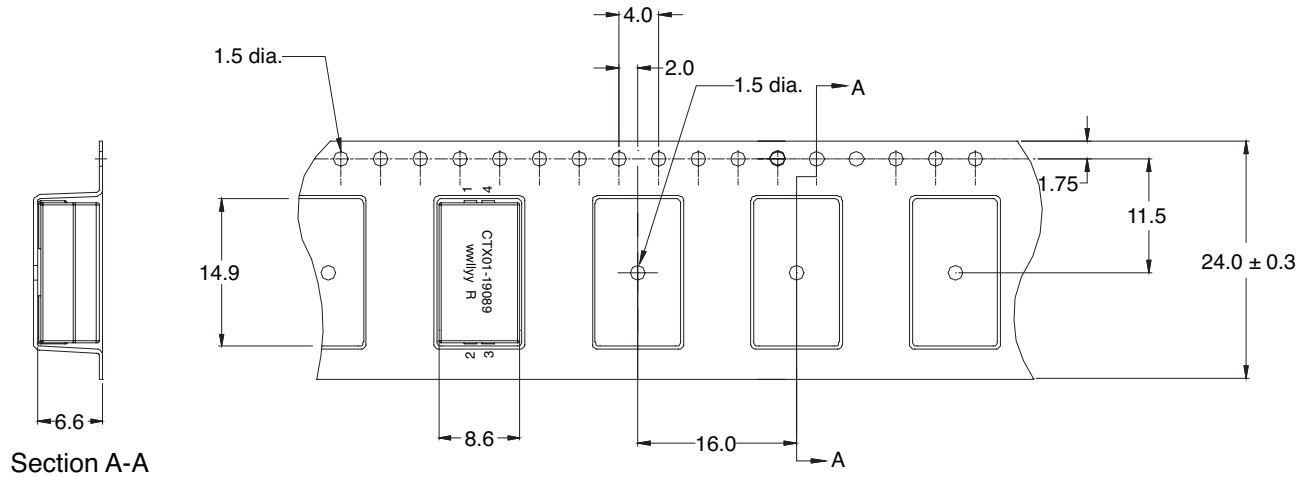
- I_{sat}: Peak current for approximately 2% rolloff at +25°C
 - DCR tested from Pins (1-2) and (3-4)
 - Part Number Definition: CTX01-19089-R
- CTX01-19089 = Part number
- "-R" suffix = RoHS compliant
 - Q Test Parameters: 1MHz, 0.1V_{rms}, 25°C (Pins 1-3, short 2-4)
- Note:** Hipot: 200Vdc minimum for 2 seconds, 0.1mA pins (1-2) to (4-3)

Dimensions - mm



Part marking: CTX01-19089, wwllyy = date code, R = revision level.
Soldering surfaces to be coplanar within 0.1 millimeter.
Pins 2 and 4 are connected through the PCB trace.

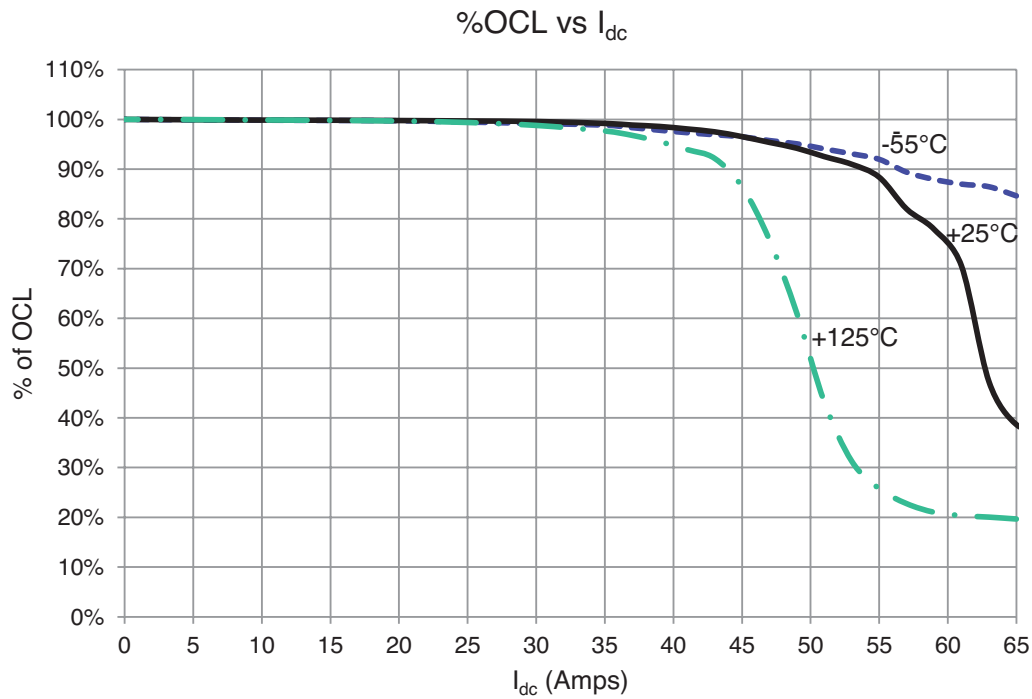
Packaging information - mm



Supplied in tape and reel packaging, 600 parts per 13" diameter reel.

User direction of feed →

Inductance characteristics



Solder reflow profile

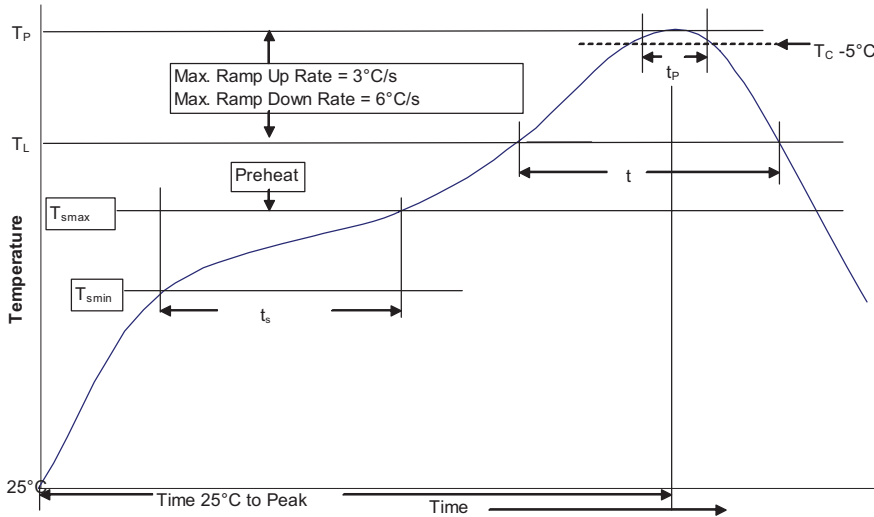


Table 1 - Standard SnPb Solder (T_c)

| Package Thickness | Volume ≤ 350 mm ³ | Volume ≥ 350 mm ³ |
|-------------------|-----------------------------------|-----------------------------------|
| <2.5mm | 235°C | 220°C |
| ≥ 2.5 mm | 220°C | 220°C |

Table 2 - Lead (Pb) Free Solder (T_c)

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

Reference JDEC J-STD-020D

| Profile Feature | Standard SnPb Solder | Lead (Pb) Free Solder |
|--|----------------------|-----------------------|
| Preheat and Soak | | |
| • Temperature min. (T_{smin}) | 100°C | 150°C |
| • Temperature max. (T_{smax}) | 150°C | 200°C |
| • Time (T_{smin} to T_{smax}) (t_s) | 60-120 Seconds | 60-120 Seconds |
| Average ramp up rate T_{smax} to T_p | 3°C/ Second Max. | 3°C/ Second Max. |
| Liquidous temperature (T_L) | 183°C | 217°C |
| Time at liquidous (t_L) | 60-150 Seconds | 60-150 Seconds |
| Peak package body temperature (T_p)* | Table 1 | Table 2 |
| Time (t_p)** within 5 °C of the specified classification temperature (T_c) | 20 Seconds** | 30 Seconds** |
| Average ramp-down rate (T_p to T_{smax}) | 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_p) is defined as a supplier minimum and a user maximum.

** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

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