

# 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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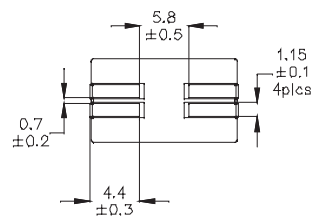
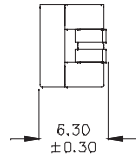
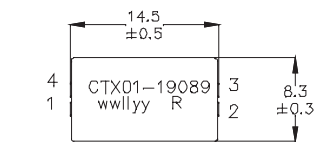
**Product specifications**

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

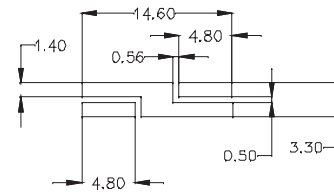
- Open Circuit Inductance (OCL) Test Parameters: 1MHz, 0.1V<sub>rms</sub>, 0.0Adc, 25°C ±10% (Pins 1-3, short 2-4)
- I<sub>rms</sub>: DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity 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<sub>sat</sub>: 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<sub>rms</sub>, 25°C (Pins 1-3, short 2-4)
- Note:** Hipot: 200Vdc minimum for 2 seconds, 0.1mA pins (1-2) to (4-3)

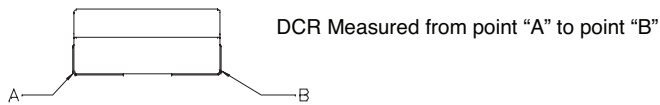
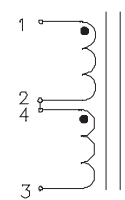
**Dimensions - mm**



**Recommended pad layout**

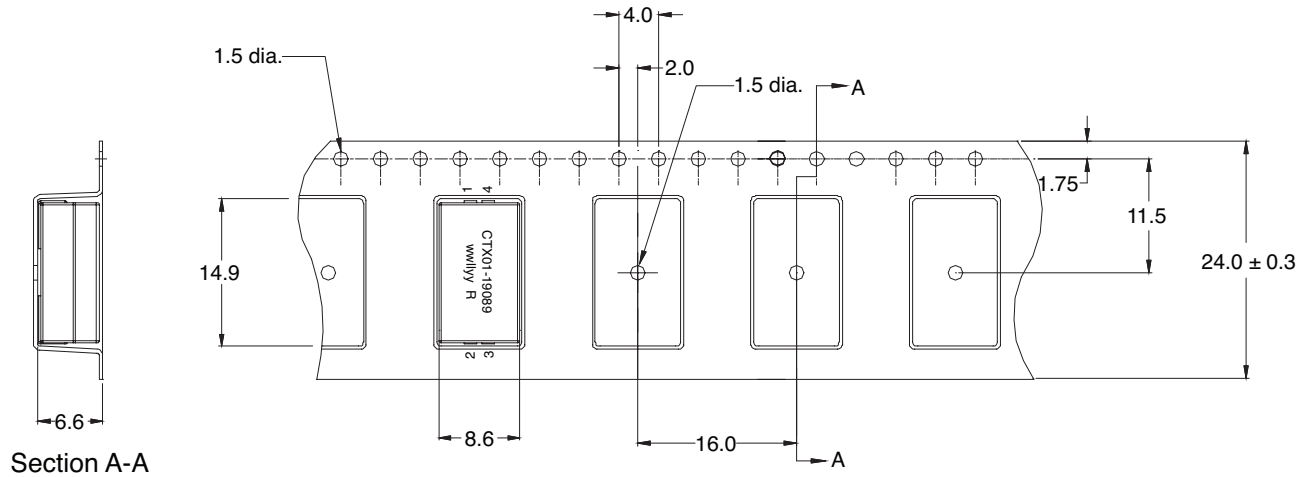


**Schematic**



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.

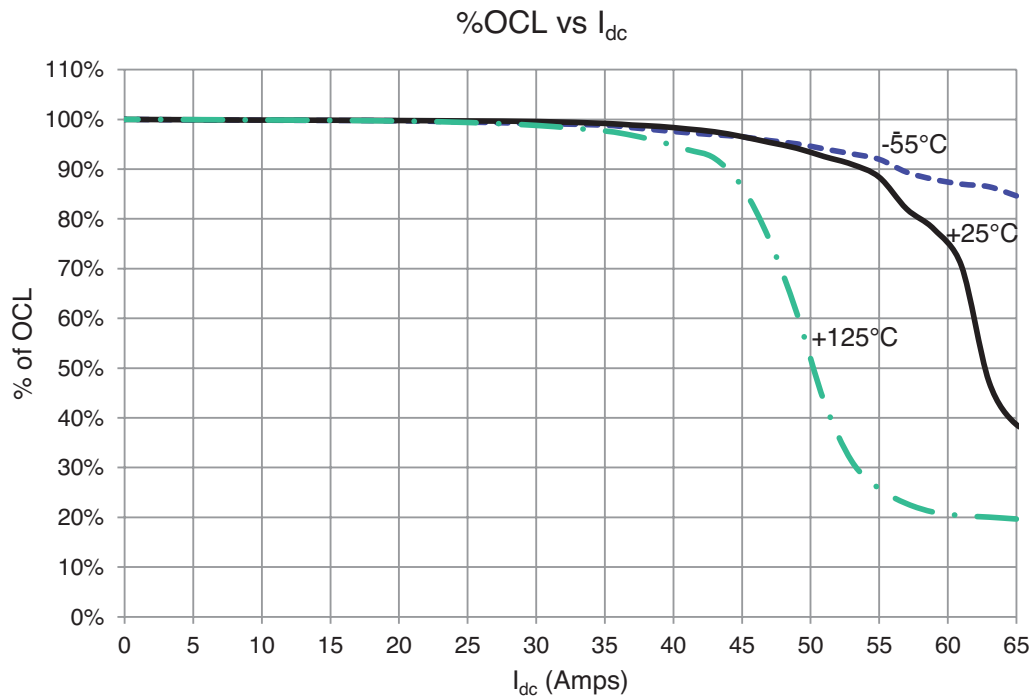
Packaging information - mm



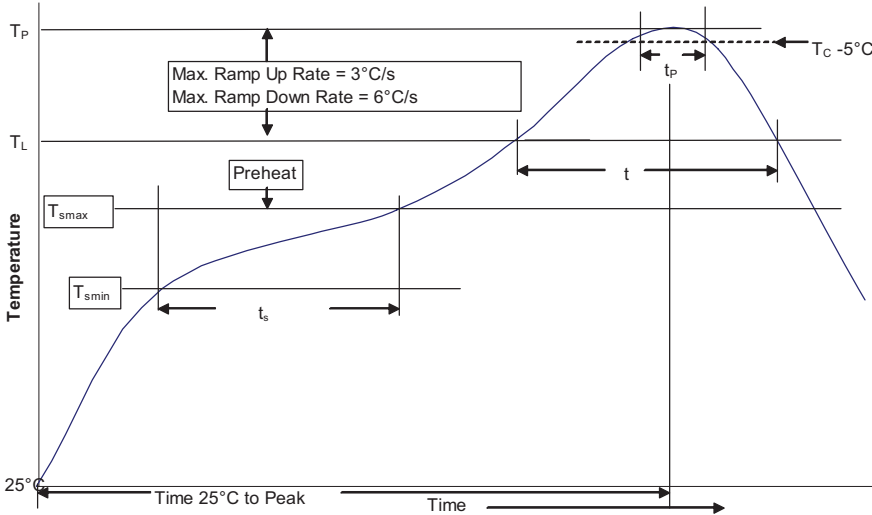
Supplied in tape and reel packaging, 600 parts per 13" diameter reel.

User direction of feed →

Inductance characteristics



**Solder reflow profile**



**Table 1 - Standard SnPb Solder ( $T_c$ )**

Package Thickness	Volume $\leq 350$ mm <sup>3</sup>	Volume $\geq 350$ mm <sup>3</sup>
<2.5mm	235°C	220°C
$\geq 2.5$ mm	220°C	220°C

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

Package Thickness	Volume $\leq 350$ mm <sup>3</sup>	Volume 350 - 2000 mm <sup>3</sup>	Volume $>2000$ mm <sup>3</sup>
<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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