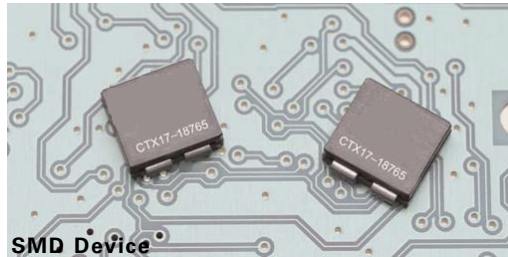


# CTX17-18765

## Coupled power inductor



### Product features

- 10 mm x 10 mm footprint surface mount package in a 4.0 mm height
- High current 2-phase inductor
- Ferrite core material

### Applications

For exclusive use with Maxim® Multi-phase controllers

### 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



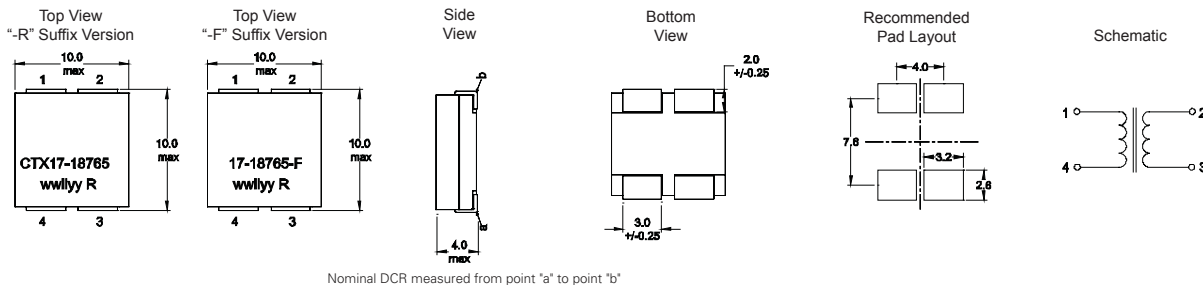
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**Product specifications**

Part Number <sup>6</sup>	Functional Specifications				Test Specifications				
	Inductor Phases	Rated Inductance (nH) <sup>1</sup>	I <sub>max</sub> Peak per Phase (Adc) <sup>1</sup>	I <sub>rms</sub> per Phase (Adc) <sup>5</sup>	OCL (nH) <sup>2</sup>		SCL (nH) <sup>3</sup>	FLL for SCL (nH) <sup>4</sup>	DCR (mΩ) ±8% @ 20°C
					(1-4)	(2-3)	(1-2) Short (3-4)	(1-2) Short (3-4)	
CTX17-18765-R	2	50	55	33	200 ±20%		100 ±20%	64 min.	0.252
CTX17-18765-F	2	50	55	33	200 ±20%		100 ±20%	64 min.	0.252

- The rated inductance per phase is determined by Maxim testing and circuit design. Additional information can be provided by contacting Maxim.
- Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 0.1 V<sub>rms</sub>, 0.0 Adc, @ +25 °C
- Short-Circuit Inductance (SCL) Test Parameters: 100 kHz, 0.1 V<sub>rms</sub>, 0.0 Adc, @ +25 °C
- Full Load Inductance (FLL) for (SCL), 100 kHz, 0.1 V<sub>rms</sub>, 55 Adc, @ +25 °C
- I<sub>rms</sub> DC current per phase that will cause a 40°C temperature rise without core loss at +25 °C ambient. It is recommended the temperature not exceed +125 °C under worse case operating conditions verified in the end application.
- This device is licensed for use only when incorporated within a voltage regulator employing power regulating devices manufactured by Maxim Integrated Devices. No license is granted expressly or by implication to use this device with power regulating devices manufactured by any company other than Maxim.

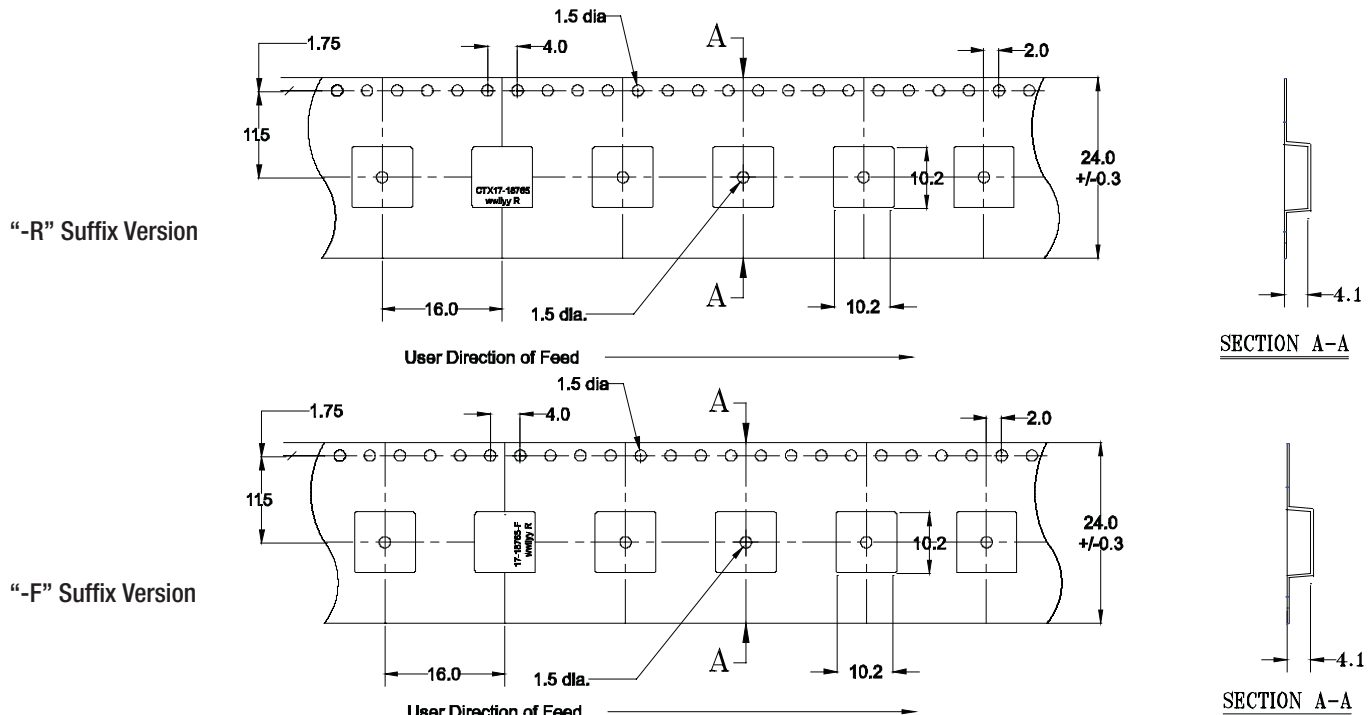
**Dimensions- mm**



Nominal DCR measured from point 'a' to point 'b'

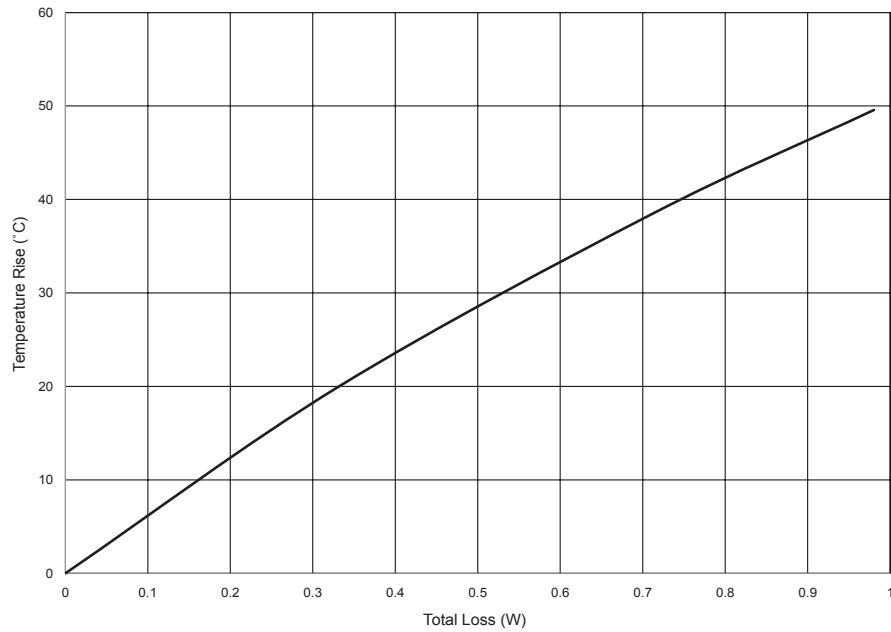
Part marking: CTX17-18765, wwllly= date code, R= revision level  
 Part marking -F version: 17-18765-F, wwllly= date code, R= revision level  
 Pad layout tolerances ±0.1 mm  
 Soldering surfaces to be coplanar within 0.1016 mm  
 Do not route traces or vias underneath the inductor

**Packaging information - mm**

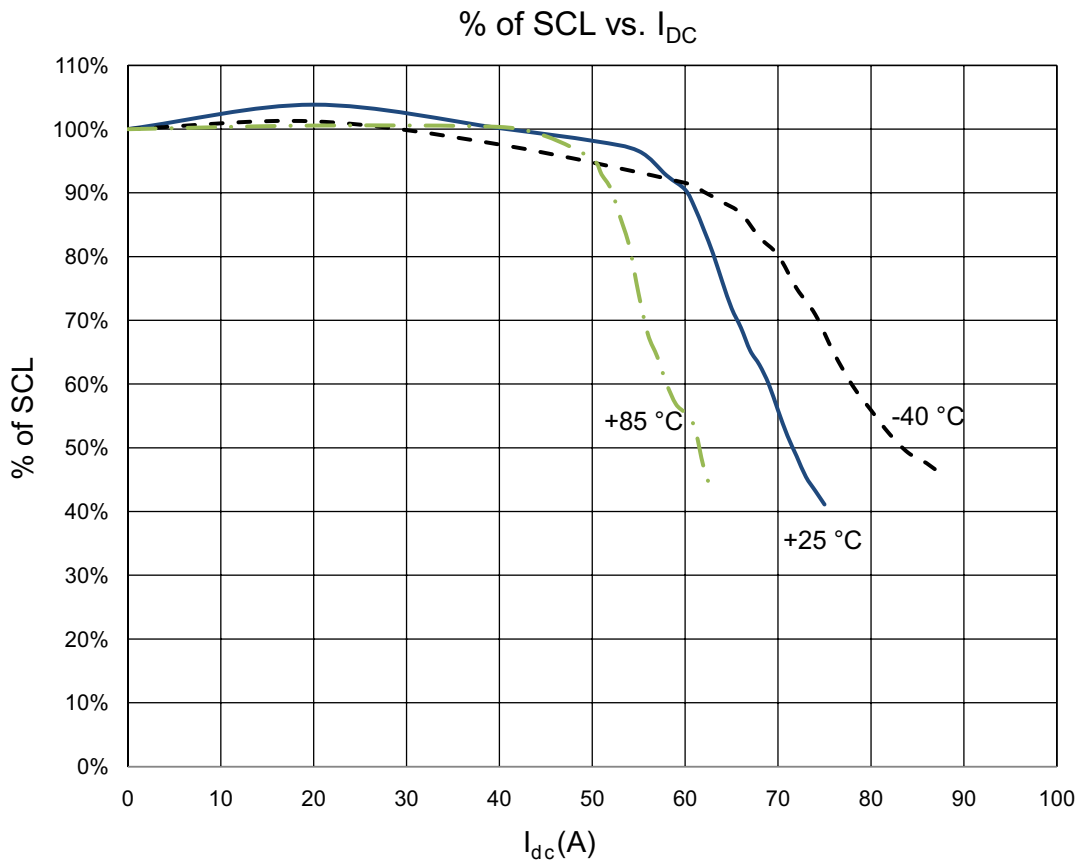


Supplied in tape and reel packaging, 1000 parts per 13" diameter reel.

### Temperature rise vs total loss



### Inductance characteristics



### Solder Reflow Profile

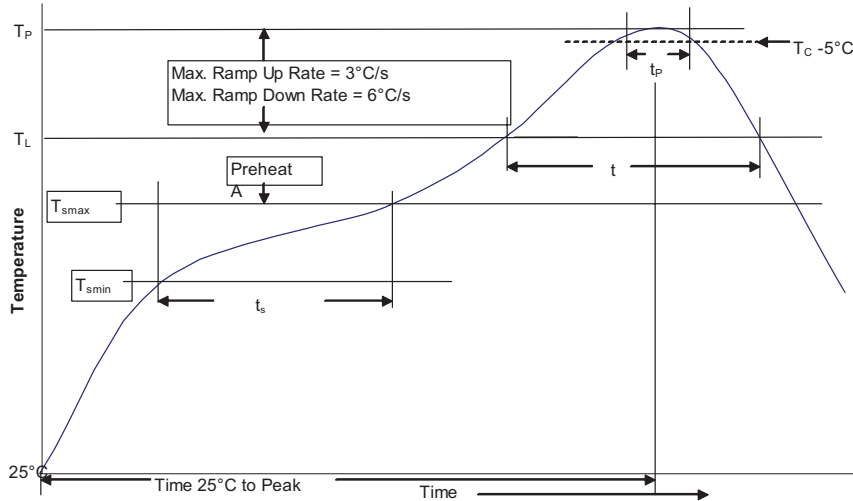


Table 1 - Standard SnPb Solder ( $T_c$ )

Package Thickness	Volume $\text{mm}^3$ <350	Volume $\text{mm}^3$ $\geq 350$
<2.5mm	235°C	220°C
$\geq 2.5\text{mm}$	220°C	220°C

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

Package Thickness	Volume $\text{mm}^3$ <350	Volume $\text{mm}^3$ 350 - 2000	Volume $\text{mm}^3$ >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 JDEC J-STD-020

Profile Feature	Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. ( $T_{smin}$ )	100°C
	• Temperature max. ( $T_{smax}$ )	150°C
	• Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	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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