

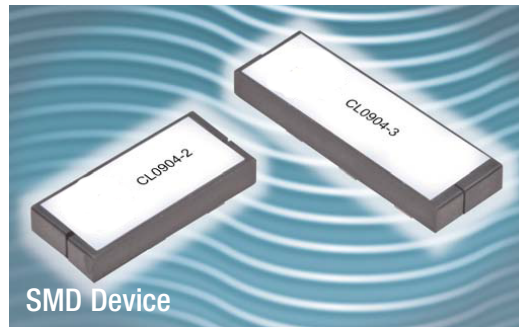


**THE DATASHEET OF
CL0904-3-50TR-R**



CL0904

Multi-Phase power inductors



Product features

- High current multi-phase inductor
- 50nH per phase coupled inductor
- Ferrite core material
- Patents pending
- Halogen free, lead free and RoHS compliant

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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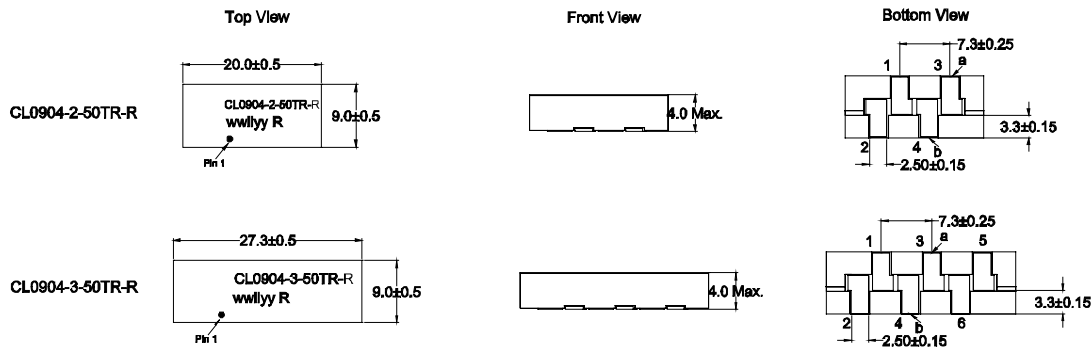
Powering Business Worldwide

Specifications										
Functional						Test				
Part Number ⁴	Inductor Phases	DCR (mΩ) ±10% @20°C	Rated Inductance per Phase (nH)	I Rated per Phase (A _{dc}) ³	I _{max} Peak per Phase (A _{dc}) ³	Pin Number	OCL (nH) ^{1,2}	Pin Number	OCL (nH) ^{1,2}	Magnetized Inductance (nH) @ 5A _{dc} (25°C)
CL0904-2-50TR-R	2	0.35	50 ± 20%	35	80	(1-2)	320±20%	(3-4)	320±20%	245
CL0904-3-50TR-R	3	0.35	50 ± 20%	35	50	(3-4)	400±20%	(1-2), (5-6)	380±20%	250

1. Open Circuit Inductance (OCL)
2. Test Parameters: 1MHz, 0.1V_{rms}, 0.0A_{dc}.
3. The rated current, I_{max} peak current, and rated inductance per phase is determined by Volterra's testing and circuit design. Additional information can be provided by contacting Volterra.
4. Part Number Definition: CL0904-x-50TR-R
 - CL0904= Product code and size
 - "x" = number of phases
 - "50" = inductance value per phase nH
 - "TR" = Tape and Reel packaging
 - "-R" suffix = RoHS compliant

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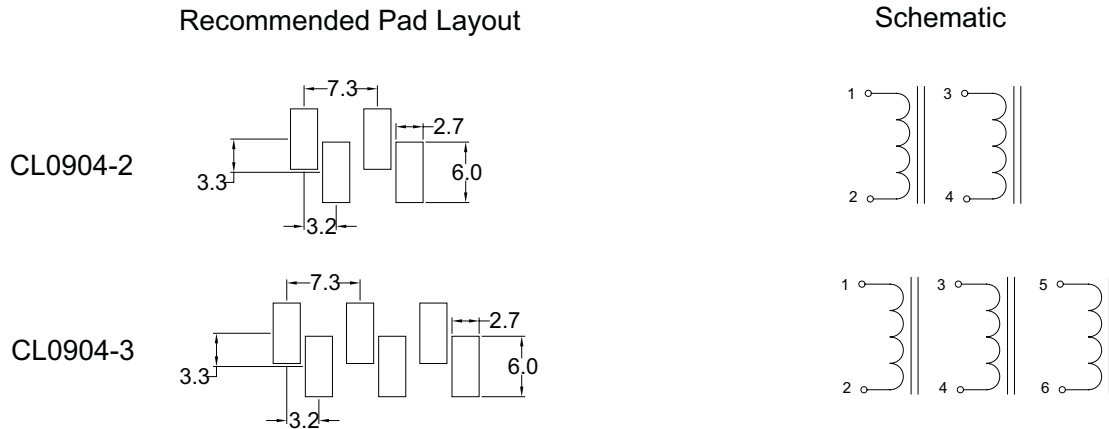
Dimensions- mm



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

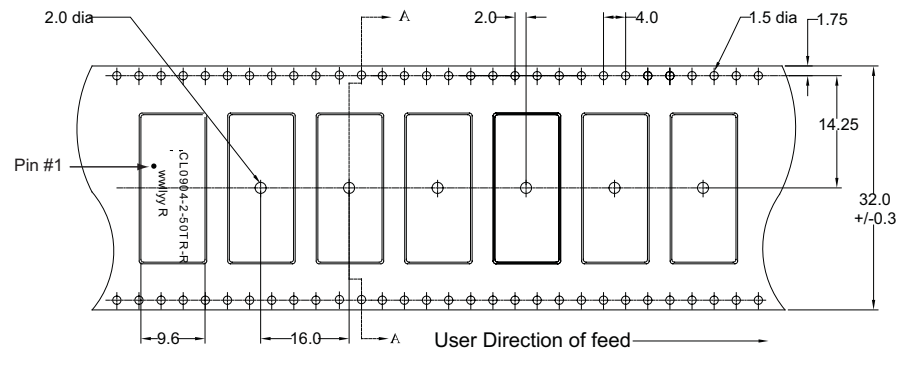
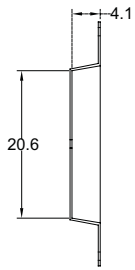
Part Marking: CL0904= Product Code and Size -x (-2, -3)= Number of phases -50= inductance value per phase TR= Tape and Reel wwllly= Date Code R=Revision Level
Soldering surfaces to be coplanar within 0.13 millimeters.

Pad layout and schematics- mm

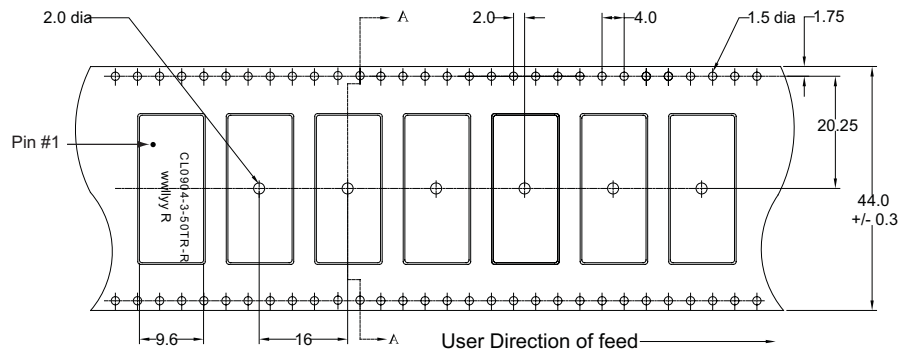
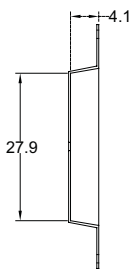


Packaging information- mm

CL094-2



CL094-3



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

Solder Reflow Profile

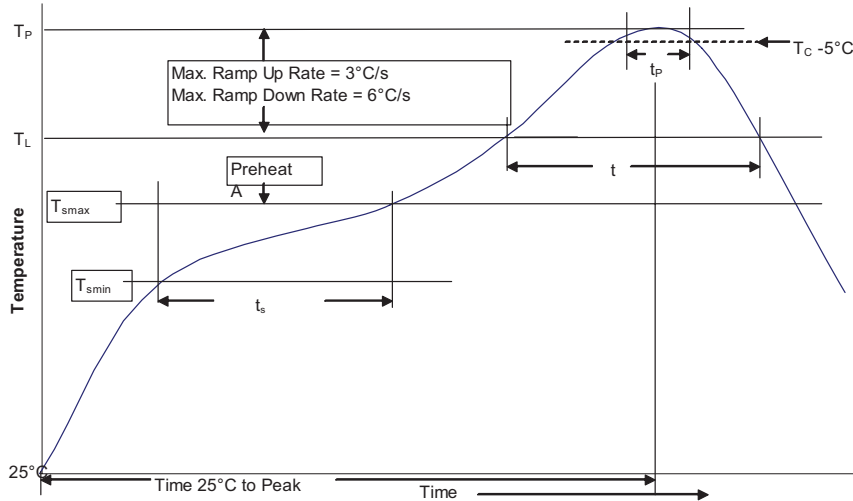


Table 1 - Standard SnPb Solder (T_c)

Package Thickness	Volume mm^3 <350	Volume mm^3 ≥ 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 mm^3 <350	Volume mm^3 350 - 2000	Volume 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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