COILTRONICS®

Multi-Phase Power Inductors

CL1108 & CLA1108 Series

Description

- Halogen free, lead free and RoHS compliant
- CLA Series features acoustic noise dampening properties
- Designed exclusively for use with Volterra VPR-DevicesA
- High current multi-phase inductor applications
- Ferrite core material
- 50nH per phase coupled inductor
- 125°C maximum temperature operation
- Patents pending

Applications

- For exclusive use with Volterra® VPR-Devices

Environmental Data

- Storage temperature range: -40°C to +125°C
- Operating temperature range: -40°C to +125°C (range is application specific)
- Solder reflow temperature: J-STD-020D compliant

Packaging

- Supplied in tape and reel packaging on a 13" diameter reel:

Series/ Part Number	Reel Quantity
CL/CLA1108-2	500
CL/CLA1108-3	500
CL/CLA1108-4	400
CL1108-5	300

A This device is licensed for use only when incorporated within a voltage regulator employing power regulating devices manufactured by Volterra Semiconductor Corp. No license is granted expressly or by implication to use this device with power regulating devices manufactured by any company other than Volterra.

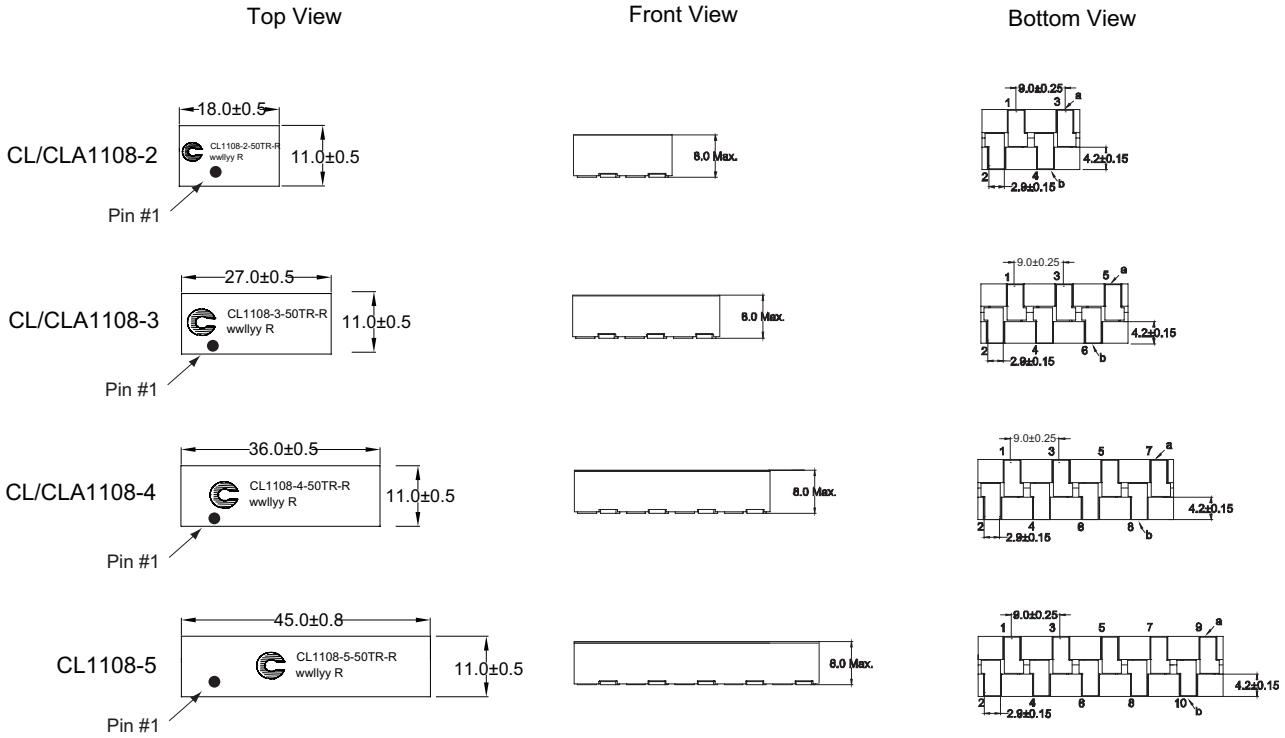
Specifications

Functional						Test					
Part Number[4]	Inductor Phases	DCR (mΩ) ±10% @20°C	Rated Inductance per Phase (nH)[3]	I Rated per Phase (Adc)[3]	I_{max} Peak per Phase (Adc)[3]	Pin Number	OCL (nH)[1,2]		Pin Number	OCL (nH)[1,2]	Magnetized Inductance (nH) @ 10Adc (25°C)
CL1108 Standard Series											
CL1108-2-50TR-R	2	0.28	50±20%	50	80	(3-4)	380±20%		(1-2)	380±20%	300
CL1108-3-50TR-R	3	0.28	50±20%	50	80	(3-4)	400±20%		(1-2), (5-6)	380±20%	300
CL1108-4-50TR-R	4	0.28	50±20%	50	80	(3-4),(5-6)	400±20%		(1-2), (7-8)	380±20%	300
CL1108-5-50TR-R	5	0.28	50±20%	50	80	(3-4), (5-6),(7-8	400 ±20%		(1-2), (9-10)	380±20%	300
CLA1108 Acoustic Series											
CLA1108-2-50TR-R	2	0.28	50 ± 20%	50	80	(3-4)	380 ±20%		(1-2)	380 ±20%	300
CLA1108-3-50TR-R	3	0.28	50 ± 20%	50	80	(3-4)	400 ±20%		(1-2), (5-6)	380 ±20%	300
CLA1108-4-50TR-R	4	0.28	50 ± 20%	50	80	(3-4), (5-6)	400 ±20%		(1-2), (7-8)	380 ±20%	300

1. Open Circuit Inductance (OCL)
2. Test Parameters: 1MHz, 0.1V_{rms}, 0.0Adc.
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: CLx1108-y-50TR-R
   - CL(x)1108 = Product code and size (CL prefix = standard, CLA prefix = with Acoustic Dampening
   - "y" = number of phases
   - "50" = inductance value per phase nH
   - "TR" = Tape and Reel packaging
   - "-R" suffix = RoHS compliant

COOPER Bussmann

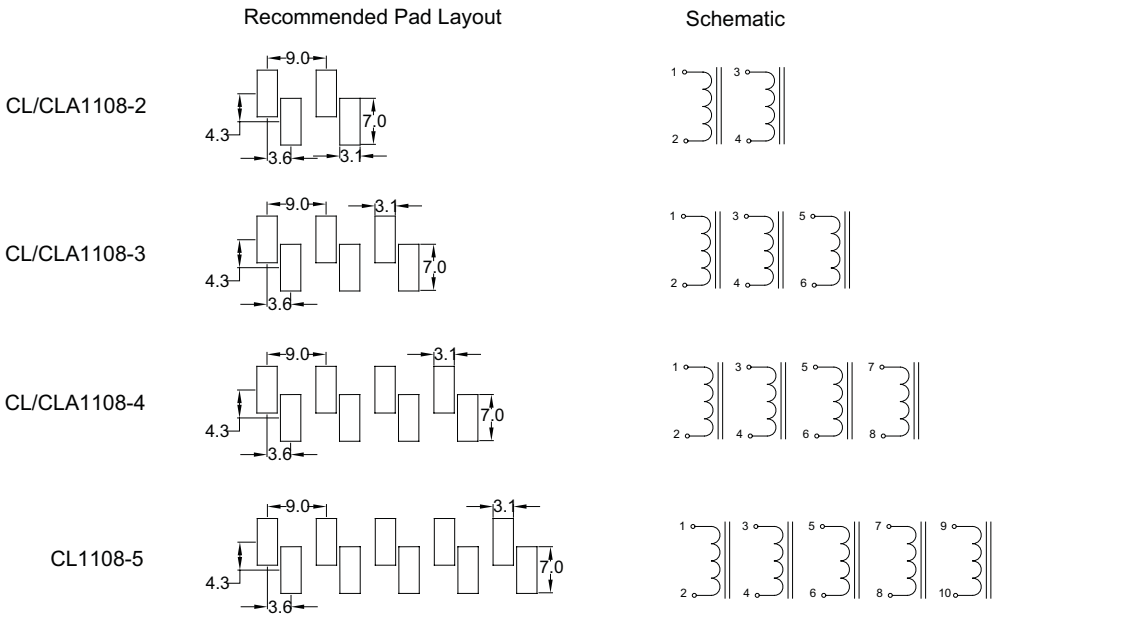
Dimensions - mm



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

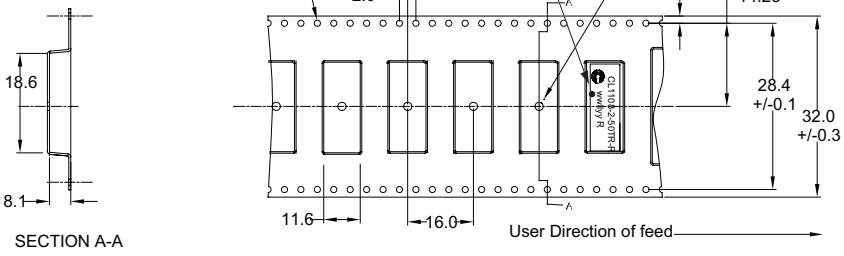
Part Marking: Colitronics Logo, CLx1108 = Product Code and Size (CL = standard, CLA = acoustic dampening), -y (-3, -4)= Number of phases, -50 = inductance value per phase, TR= Tape and Reel, wwllyy = Date Code, R = Revision Level.

Pad Layouts & Schematics- mm

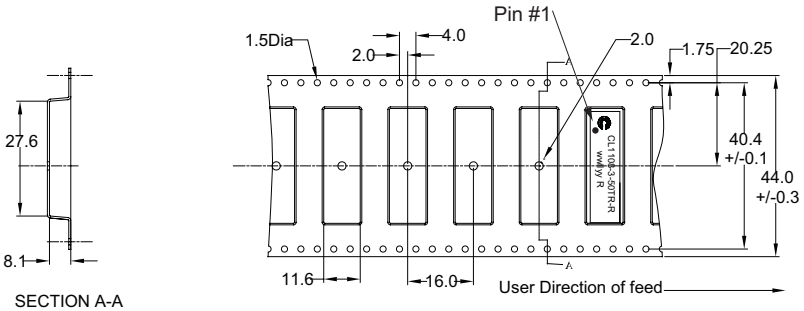


Packaging Information - mm

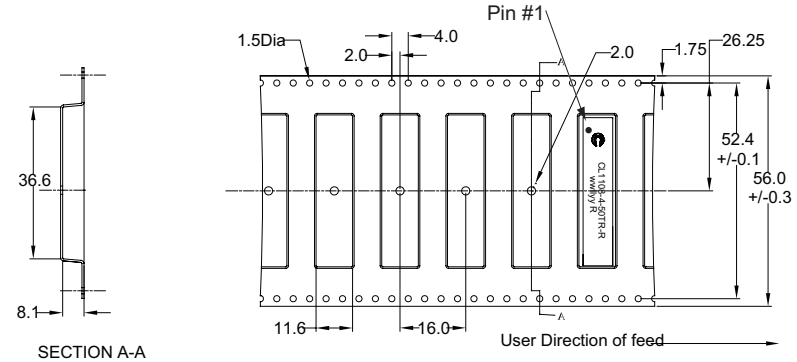
CL/CLA1108-2
500 parts per reel



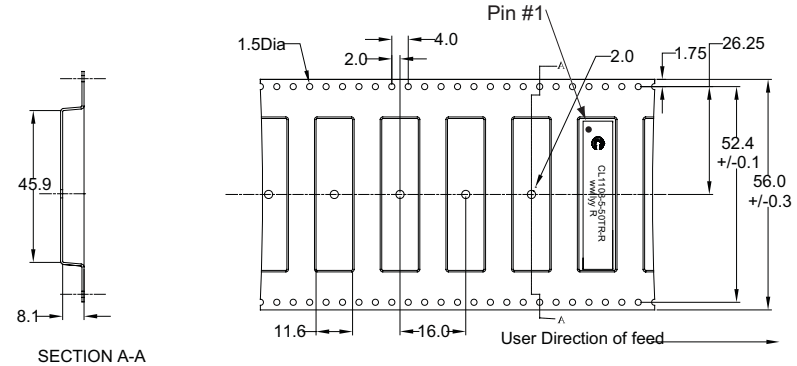
CL/CLA1108-3
500 parts per reel



CL/CLA1108-4
400 parts per reel



CL1108-5
300 parts per reel



Supplied in tape and reel packaging on a 13" diameter reel in the part number quantities shown above.

Solder Reflow Profile

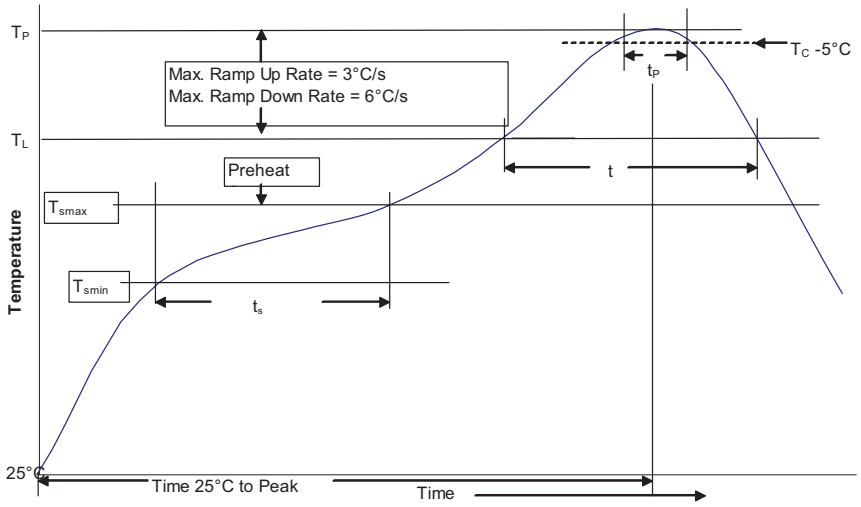


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume mm³ <350	Volume mm³ ≥350
<2.5mm	235°C	220°C
≥2.5mm	220°C	220°C

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

Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >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-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) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 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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