

CLB1 108

Multi-phase power inductors



Product features

- High current multi-phase inductor
- 50 nH per phase coupled inductor
- Ferrite core material
- Patents pending
- Moisture Sensitivity Level (MSL): 1

Applications

- For exclusive use with Volterra® or Maxim® VPR-Devices

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

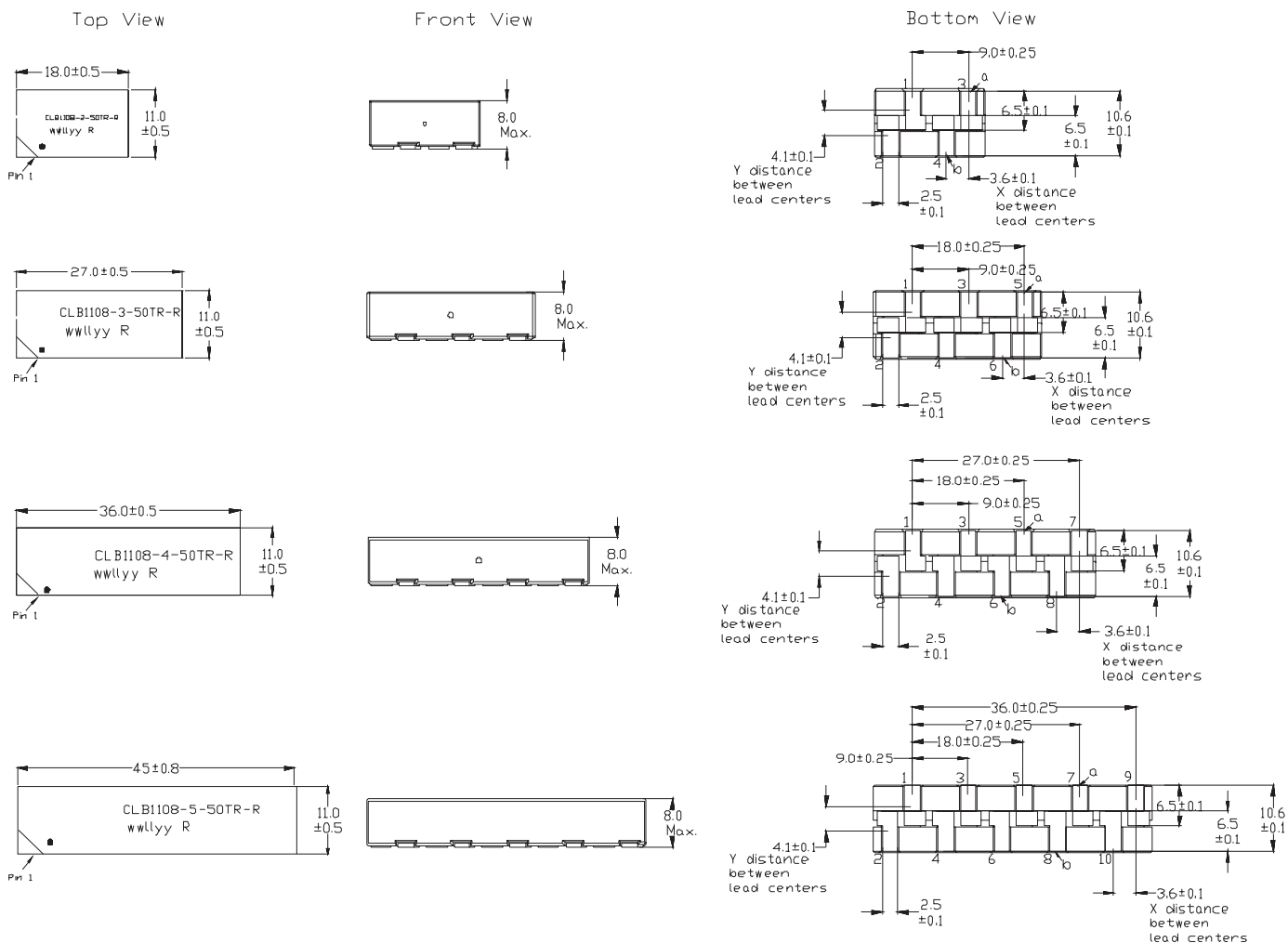
Product specifications

Part number ^{4,5}	Inductor phases	OCL min ¹ @ 0.0 Adc (nH)	OCL min ¹ @ Isat1	Isat1 ² (A)	OCL min ^{1A} @ Isat2	Isat2 ² (A)	SCL ³ (nH)	Isat3 ² (A)	DCR ±10% (mΩ) @ +20 °C
CLB1108-2-50TR-R	2	200	150	25	100	23	50	110	0.28
CLB1108-3-50TR-R	3	200	150	25	100	23	50	110	0.28
CLB1108-4-50TR-R	4	200	150	25	100	23	50	110	0.28
CLB1108-5-50TR-R	5	200	150	25	100	23	50	110	0.28

- Open Circuit Inductance (OCL) Test Parameters: 1 MHz, 0.1 Vrms, @ +25 °C
- 1A. Open Circuit Inductance (OCL) Test Parameters: 1 MHz, 0.1 Vrms, @ +105 °C
- Isat1: Peak current at which OCL drops to 150 nH min @ +25 °C
Isat2: Peak current at which OCL drops to 100 nH min @ +105 °C
Isat3: Peak current where SCL drops approximately 20% @ +105 °C
- Short Circuit Inductance (SCL) Test Parameters: 1 MHz, 0.1 Vrms, 0.0 Adc @ +25 °C, ±20%
 - CLB1108-2-50TR-R, short 1 & 4, Measure 2 & 3 and divide by 2.
 - CLB1108-3-50TR-R, short 1 & 4, 3 & 6, Measure 2 & 5 and divide by 3
 - CLB1108-4-50TR-R, short 1 & 4, 3 & 6, 5 & 8, Measure 2 & 7, and divide by 4
 - CLB1108-5-50TR-R, short 1 & 4, 3 & 6, 5 & 8, 7 & 10, Measure 2 & 9 and divide by 5

- Part Number Definition: CLB1108-X-50TR-R
CLB1108 = 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)



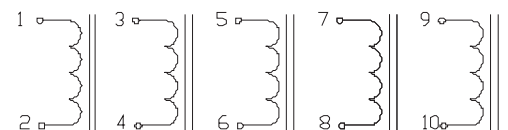
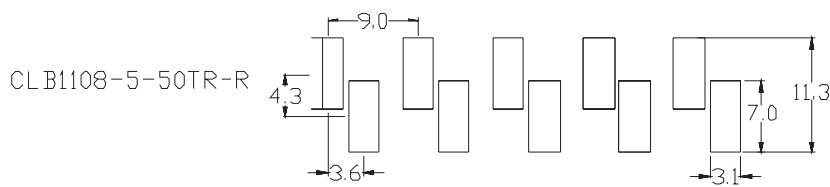
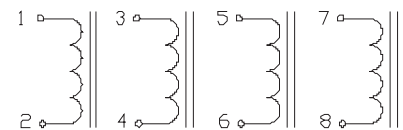
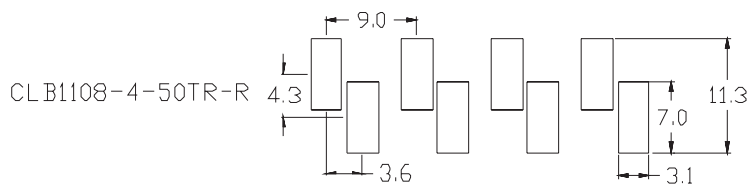
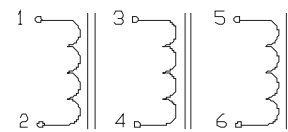
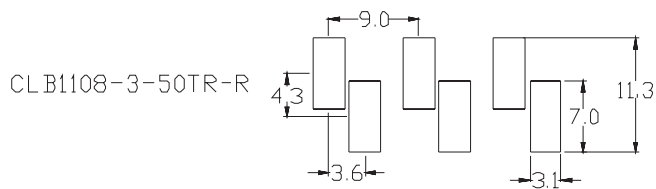
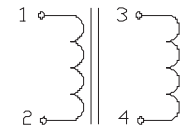
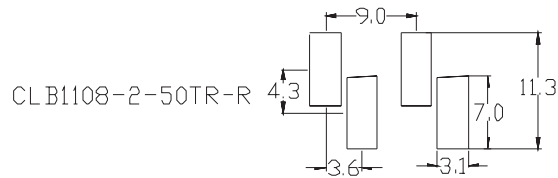
Part marking: Pin 1 dot, CLB1108= (product code and size), -2,-3,-4,-5, = (number of phases), -50= (inductance value per phase in nH), TR= (tape and reel), -R = (RoHS compliant)
wwllly = date code, R = revision level
Tolerances are ±0.25 millimeters unless stated otherwise
All soldering surfaces to be coplanar within 0.13 millimeter
Do not route traces or vias underneath the inductor

Pad layouts & schematics (mm)

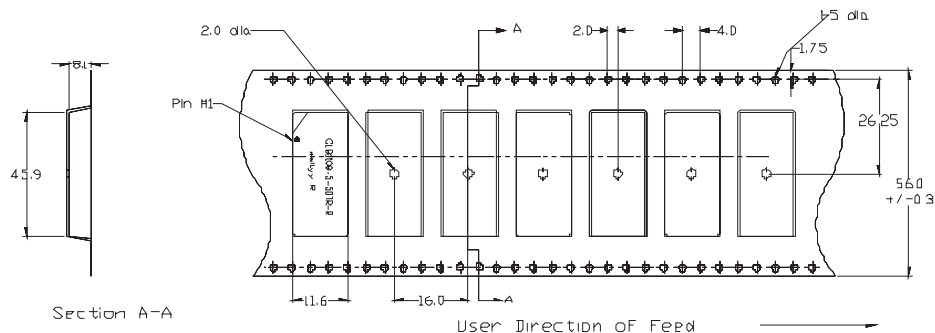
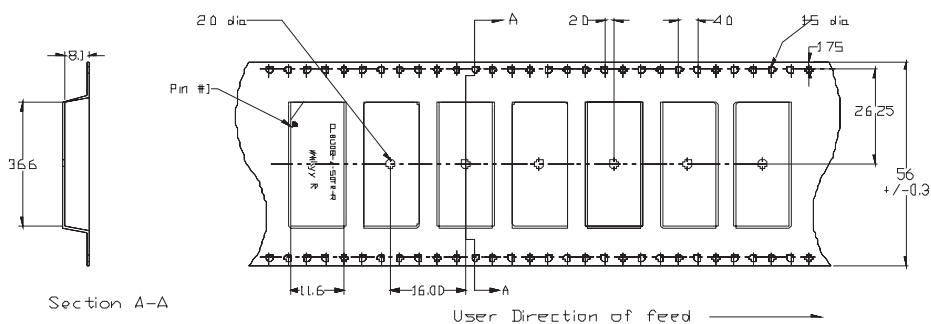
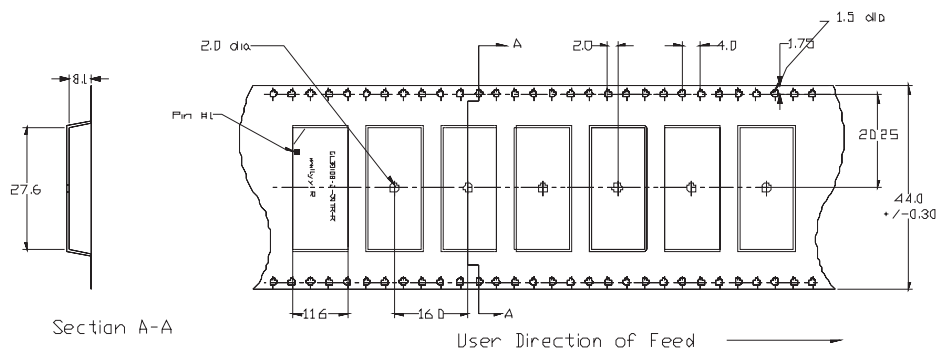
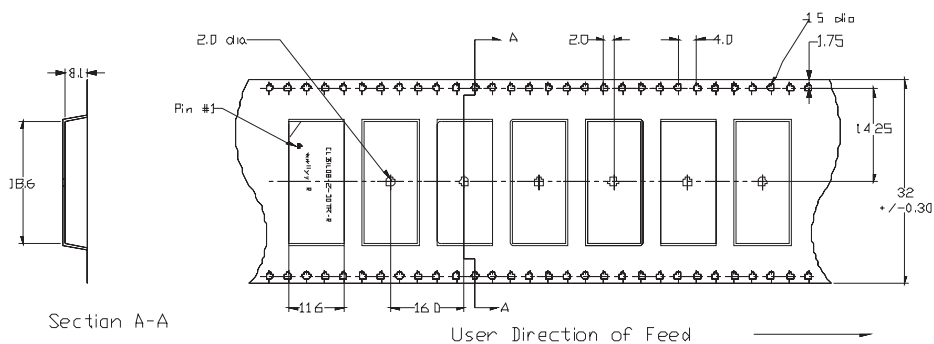
Tolerances are ± 0.1 millimeters unless stated otherwise.

Recommended Pad Layout

Schematic



Supplied in tape and reel packaging on a 13" diameter reel.



Solder reflow profile

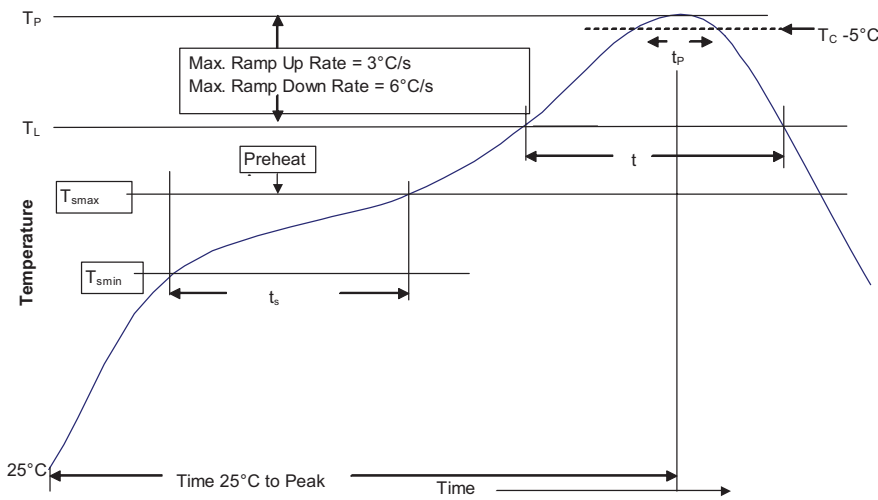


Table 1 - Standard SnPb Solder (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5 mm)	235 °C	220 °C
≥2.5 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
<1.6 mm	260 °C	260 °C	260 °C
1.6 – 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	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	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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Printed in USA
Publication No. 10131 PCN18034
August 2018

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