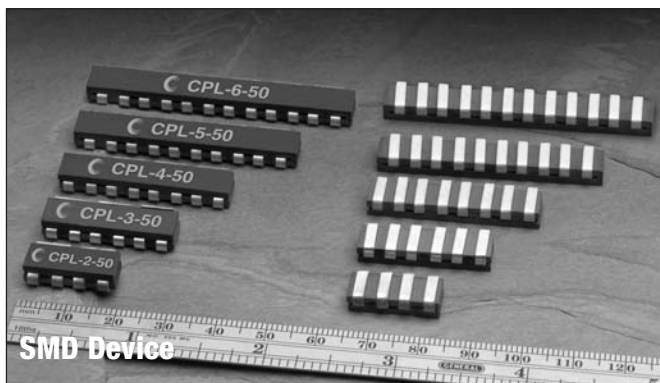


Multi-Phase Power Inductors

CPL/CPLA Series



Description

- Halogen Free
- **CPLA Series** features acoustic noise dampening properties
- Designed exclusively for use with Volterra® VPR-Devices ^A
- High current multi-phase inductor applications

CPL Series

Function Specifications						Test Specifications				
Part Number	Inductor Phases	DCR (Ω) Nom. @25°C	DCR (Ω) Max. @25°C	Rated Inductance per Phase (nH) ³	I Rated per Phase (A) ³	Pin Numbers	OCL (nH) ^{1,2}	Pin Numbers	OCL (nH) ^{1,2}	Magnetizing Inductance @ 5A (25°C)
CPL-2-50TR-R	2	0.0005	0.0006	50 ± 20%	40	(1-2)	365 ±18%	(3-4)	365 ±18%	300
CPL-3-50TR-R	3	0.0005	0.0006	50 ± 20%	40	(3-4)	490 ±20%	(1-2), (5-6)	365 ±18%	400
CPL-4-50TR-R	4	0.0005	0.0006	50 ± 20%	40	(3-4), (5-6)	490 ±20%	(1-2), (7-8)	365 ±18%	400
CPL-5-50TR-R	5	0.0005	0.0006	50 ± 20%	40	(3-4), (5-6), (7-8)	490 ±20%	(1-2), (9-10)	365 ±18%	400
CPL-6-50TR-R	6	0.0005	0.0006	50 ± 20%	40	(3-4), (5-6), (7-8), (9-10)	490 ±20%	(1-2), (11-12)	365 ±18%	400

CPLA Series - Acoustic Noise Dampening

Function Specifications						Test Specifications				
Part Number	Inductor Phases	DCR (Ω) Nom. @25°C	DCR (Ω) Max. @25°C	Rated Inductance per Phase (nH) ³	I Rated per Phase (A) ³	Pin Numbers	OCL (nH) ^{1,2}	Pin Numbers	OCL (nH) ^{1,2}	Magnetizing Inductance @ 5A (25°C)
CPLA-2-50TR-R	2	0.0005	0.0006	50 ± 20%	40	(1-2)	365 ±18%	(3-4)	365 ±18%	300
CPLA-3-50TR-R	3	0.0005	0.0006	50 ± 20%	40	(3-4)	490 ±20%	(1-2), (5-6)	365 ±18%	400
CPLA-4-50TR-R	4	0.0005	0.0006	50 ± 20%	40	(3-4), (5-6)	490 ±20%	(1-2), (7-8)	365 ±18%	400
CPLA-5-50TR-R	5	0.0005	0.0006	50 ± 20%	40	(3-4), (5-6), (7-8)	490 ±20%	(1-2), (9-10)	365 ±18%	400

1 OCL (Open Circuit Inductance)

2 Test parameters: 1MHz, 0.1V_{rms}, 0.0A_{dc}.

3 The rated 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: CPLx-y-50TR-R-50TR-R

- CPLx= Product code and size - CPL (standard)/CPLA (acoustic dampening)
- -y= number of phases
- -50 = rated inductance value per phase in nH
- TR= Tape and reel
- -R suffix= RoHS compliant

- Ferrite core material
- 50nH per phase coupled inductor
- 125°C maximum temperature operation
- Frequency range up to 2MHz
- Patents pending
- RoHS compliant



Applications

- For exclusive use with Volterra® VPR-Devices

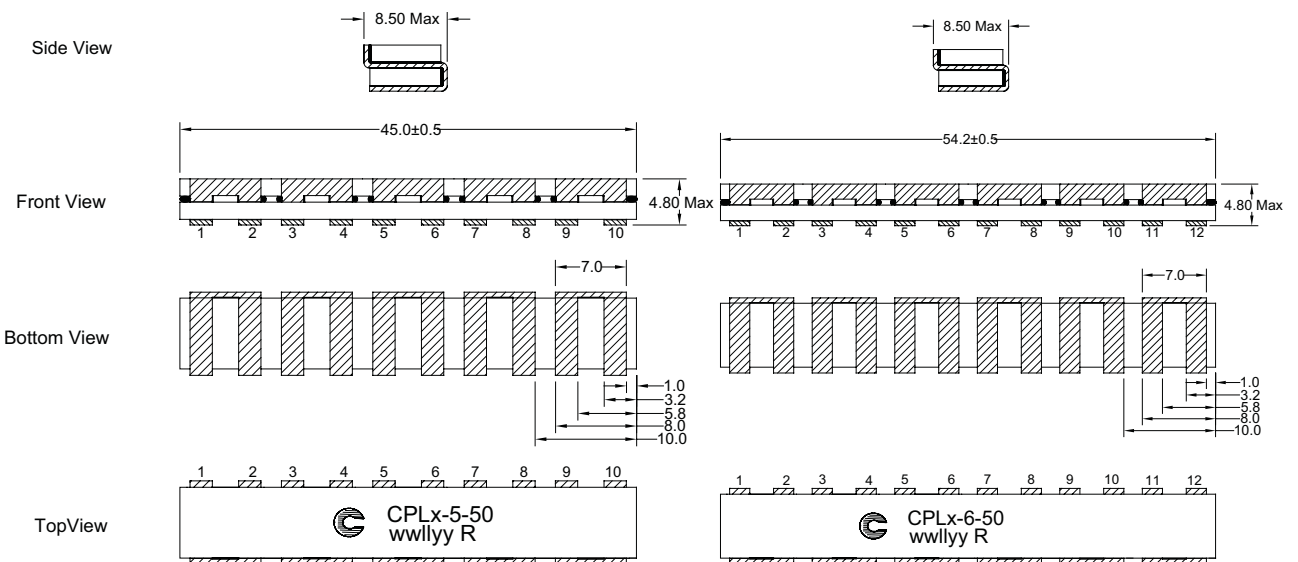
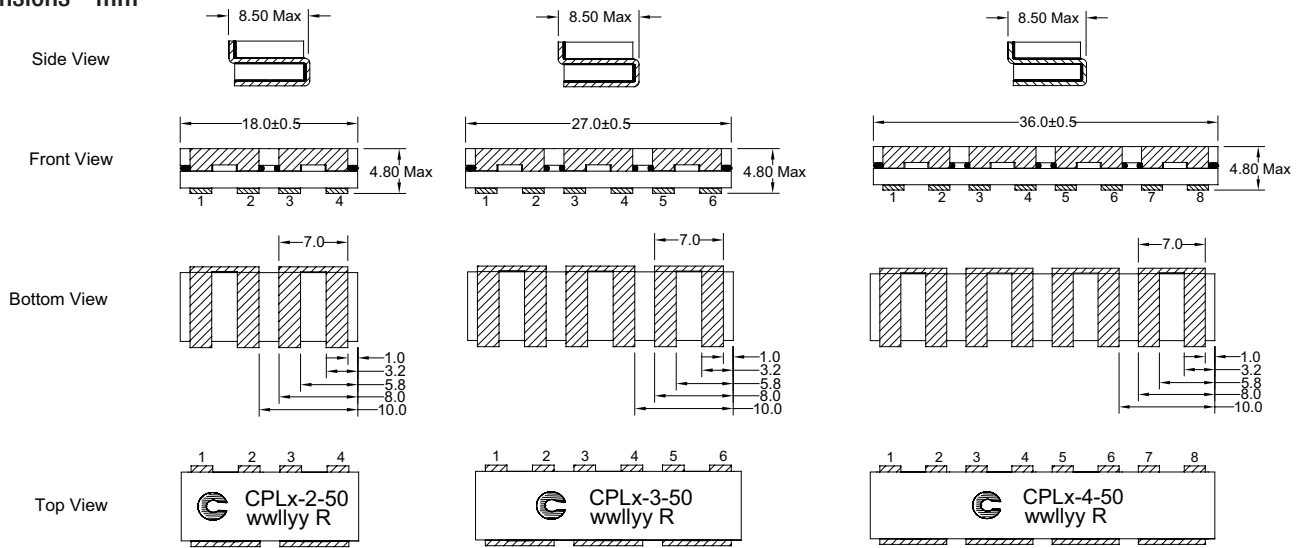
Environmental Data

- 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

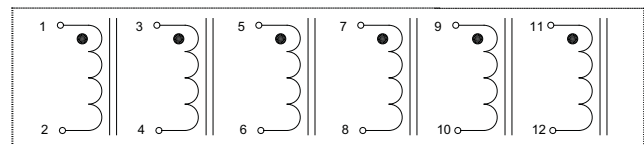
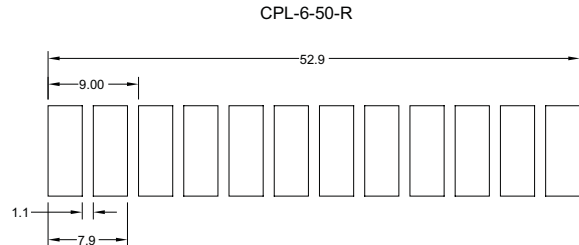
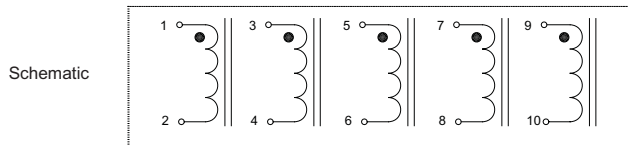
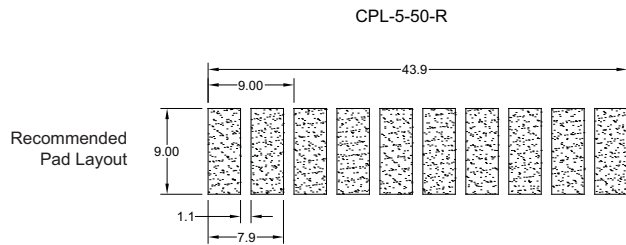
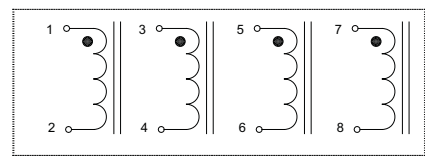
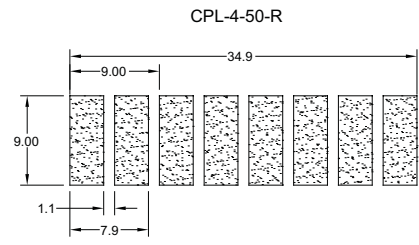
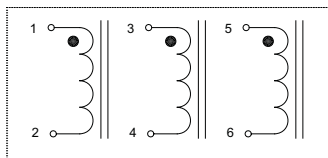
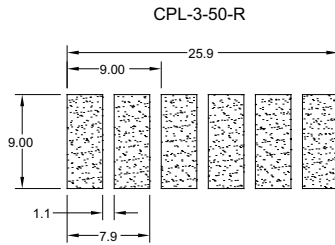
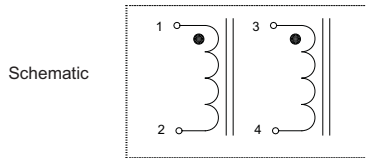
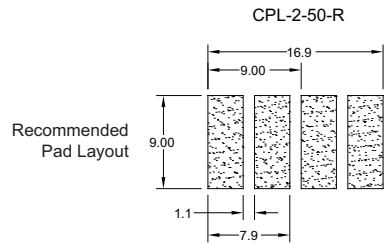
- Supplied in tape and reel packaging, 750 parts per reel, 13" diameter reel

Dimensions - mm



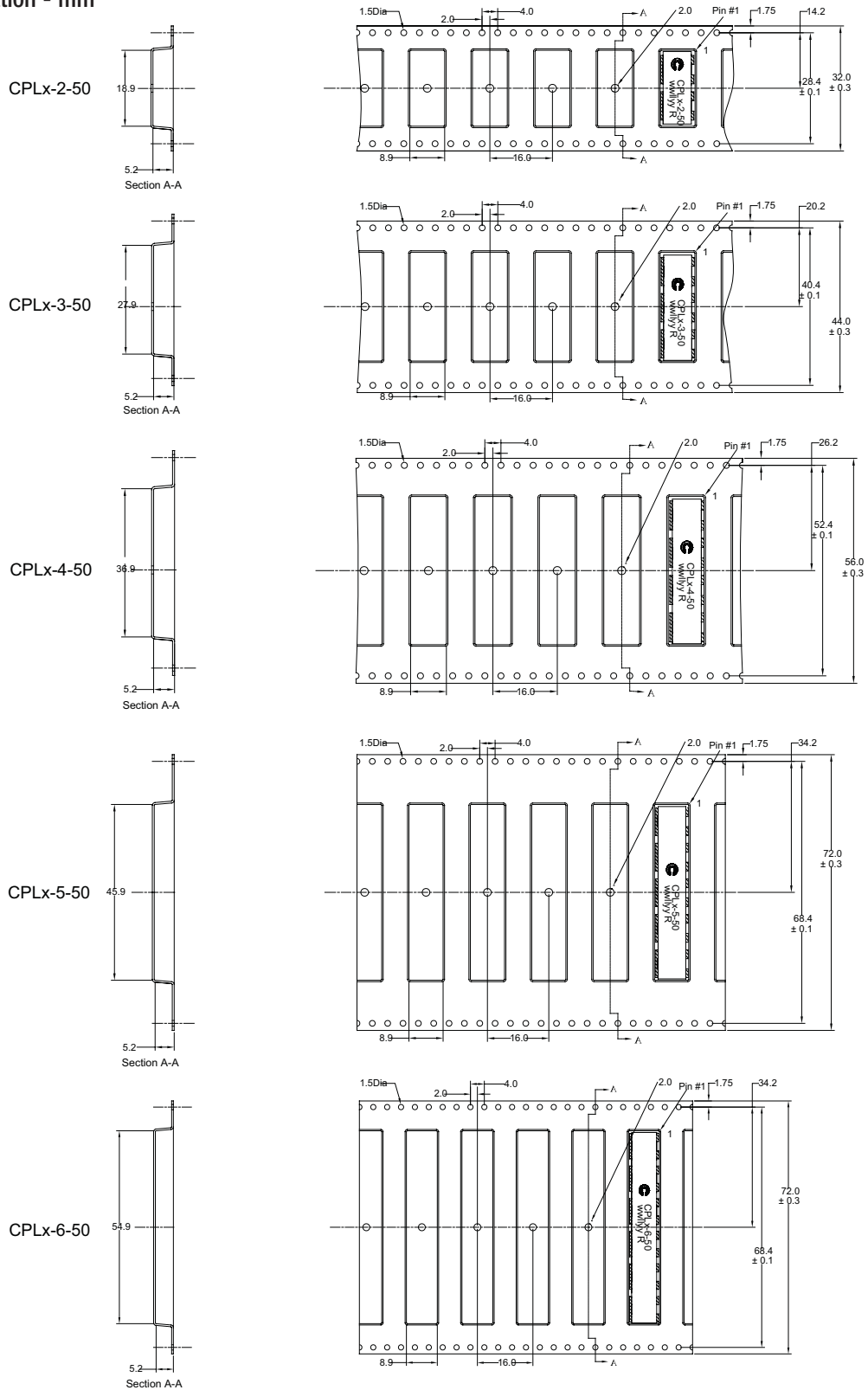
Part Marking: Coiltronics logo CPL/CPLA = Product Code and Size -y (-2, -3, -4 & -5, -6) = Number of Phases -50 = Inductance value per phase wwlly = Date code R = Revision level

Pad Layouts & Schematics - mm



All dimensions ± 0.2 mm unless otherwise specified.

Packaging Information - mm



Supplied in tape-and-reel packaging, 750 parts per reel, 13" diameter reel.

User direction of feed →

Solder Reflow Profile

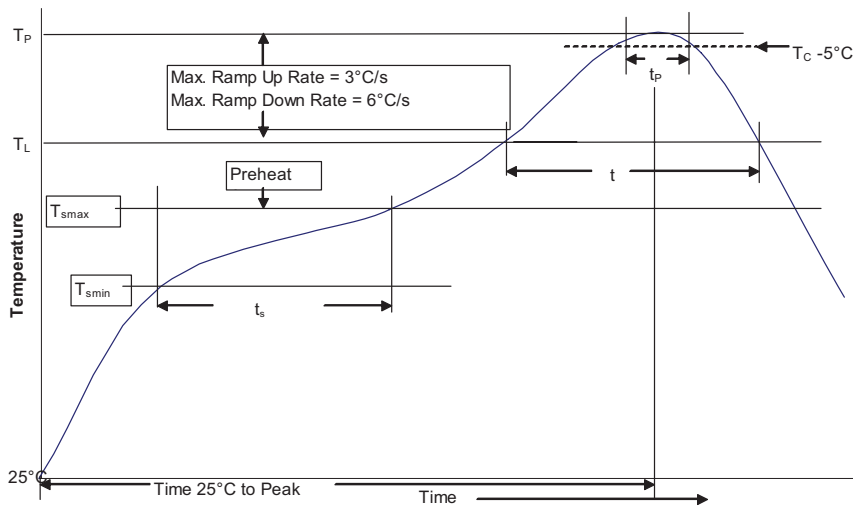


Table 1 - Standard SnPb Solder (T_c)

Package Thickness	Volume mm^3 <350	Volume mm^3 ≥ 350
<2.5mm	235°C	220°C
$\geq 2.5mm$	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-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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