



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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SMT POWER INDUCTORS

Toroid - Military/Aerospace HCCI-80 Series



-  **Height:** 12.7mm Max
-  **Footprint:** 31.0mm x 25.4mm Max
-  **Current Rating:** up to 38A
-  **Inductance Range:** 1.1µH to 18.1µH

Electrical Specifications @ 25°C — Operating Temperature -55°C to +130°C

Pulse ⁴ Part Number	Inductance @ Irated (µH)	Irated (A)	DCR (mΩ)		Inductance @ 0Apc (µH)	Reference ET (Volt-µsec)	Flux Density Factor (K1)	Core Loss Factor (K2)	Temp. Rise Factor (K3)	Connection
			TYP	MAX						
PL8304	1.1	38	1.1	1.3	2.1	4.20	0.62	1.50E-09	33.8	Parallel
PL8303	1.6	34	1.4	1.6	3.5	4.20	0.48	1.50E-09	33.8	Parallel
PL8302	2.45	27	2.2	2.5	5.1	6.00	0.39	1.50E-09	33.8	Parallel
PL8301	3.2	24	3.0	3.5	7.2	4.20	0.33	1.50E-09	33.8	Parallel
PL8304	4.3	19	4.4	5.1	8.4	8.40	0.31	1.50E-09	33.8	Series
PL8300	4.52	19	4.2	4.8	9.5	9.00	0.29	1.50E-09	33.8	Parallel
PL8303	6.4	17	5.6	6.4	13.8	8.40	0.24	1.50E-09	33.8	Series
PL8302	9.8	13.5	8.8	10.1	20.4	12.00	0.20	1.50E-09	33.8	Series
PL8301	12.8	12	12.0	13.8	28.7	8.40	0.17	1.50E-09	33.8	Series
PL8300	18.1	9.5	16.8	19.3	38.0	18.00	0.14	1.50E-09	33.8	Series

NOTES:

- Temperature rise is 55°C in typical buck or boost circuits operating at 300kHz with rated Idc current and reference ET applied to inductor.
- Total inductor loss is 1.8W for 55°C temperature rise above ambient.
- In high volt-time applications, additional heating in the component can occur due to core losses in the inductor which may necessitate derating the current in order to limit the temperature rise of the component. In order to determine the approximate total losses (or temperature rise) for a given application, both copper and core losses should be taken into account.

Estimated Temperature Rise:

$$\text{Trise} = K3 * (\text{Coreloss(W)} + \text{Copperloss(W)})^{.833} \text{ (C)}$$

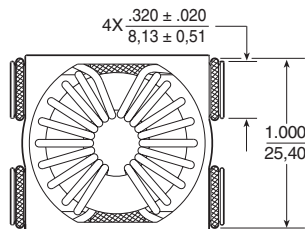
$$\text{CopperLoss} = \text{Irms}^2 * \text{DCR_Typical (m}\Omega\text{)} / 1000$$

$$\text{CoreLoss} = K2 * (\text{Freq_kHz})^{1.26} * (\Delta B)^{2.11}$$

$$\Delta B = K1 * \text{Volt-}\mu\text{sec} * 100$$

- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PL8304 becomes PL8304T). Pulse complies to industry standard tape and reel specification EIA481.

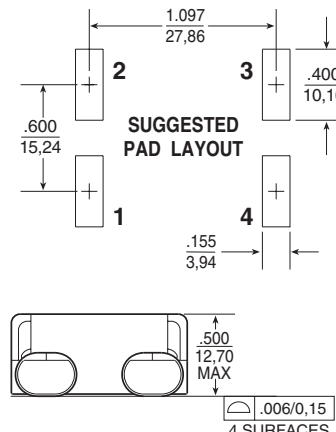
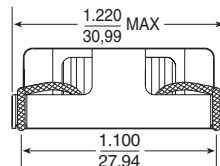
Mechanical



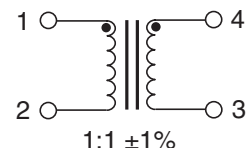
Weight 18.7 grams
Tape & Reel 75/reel
Tube 20/tube

Dimensions: Inches
mm

Unless otherwise specified,
all tolerances are ± .010
0,25



Schematic



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