



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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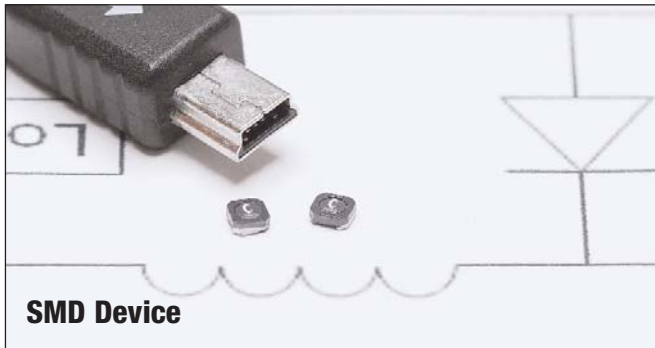
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Low Profile, High Power, Shielded Drum Inductors

SDH2812 Series



Description

- Halogen Free
- 125°C maximum total temperature operation
- 3.2 x 3.0 x 1.2mm maximum shielded drum core
- Ferrite core material
- High power density, ultra-compact footprint
- Inductance range from 1.02μH to 97.7μH
- Current range from 0.217 to 1.95 Amps
- Magnetically shielded, low EMI
- RoHS compliant

Applications

- Buck or boost inductor
- Cellular phones/ PDAs
- LED Photo flash
- LCD Displays
- Handheld/Mobile devices
- GPS Systems
- Digital cameras
- MP3 Players

Environmental Data

- Storage temperature range: -40°C to +125°C
- Operating temperature range: -40°C to +125°C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020D compliant

Packaging

- Supplied in tape and reel packaging, 4,500 parts per reel 13" diameter reel

Product Specifications

Part Number ⁵	OCL ¹ (μH)	Part Marking Designator	I _{rms} ² (Amps)	I _{sat} ³ @ 25°C (Amps)	DCR (Ω) @ 20°C (Typical)	DCR (Ω) @ 20°C (Maximum)	K-factor ⁴
SDH2812-1R0-R	1.02±30%	O	1.45	1.95	0.062	0.083	1212
SDH2812-1R5-R	1.50±30%	A	1.33	1.71	0.082	0.102	1070
SDH2812-2R2-R	2.20±20%	B	1.26	1.53	0.095	0.114	866
SDH2812-3R3-R	3.20±20%	C	1.08	1.16	0.138	0.154	673
SDH2812-4R7-R	4.20±20%	D	0.900	1.000	0.200	0.224	587
SDH2812-6R8-R	6.60±20%	E	0.730	0.830	0.270	0.336	466
SDH2812-8R2-R	8.17±20%	F	0.660	0.780	0.380	0.417	404
SDH2812-100-R	9.67±20%	G	0.620	0.710	0.389	0.467	387
SDH2812-150-R	14.7±20%	H	0.500	0.570	0.620	0.721	308
SDH2812-220-R	21.6±20%	I	0.440	0.460	0.870	0.922	264
SDH2812-330-R	33.2±20%	J	0.350	0.380	1.37	1.43	209
SDH2812-470-R	46.7±20%	K	0.300	0.320	1.72	1.99	173
SDH2812-680-R	68.0±20%	L	0.270	0.270	2.46	2.70	148
SDH2812-820-R	82.2±20%	M	0.230	0.240	3.15	3.47	135
SDH2812-101-R	97.7±20%	N	0.217	0.218	3.61	3.97	122

1 Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.10V_{rms}, 0.0Adc

2 I_{rms}: DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB pad layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended the part temperature not exceed 125°C under worst case operating conditions verified in the end application.

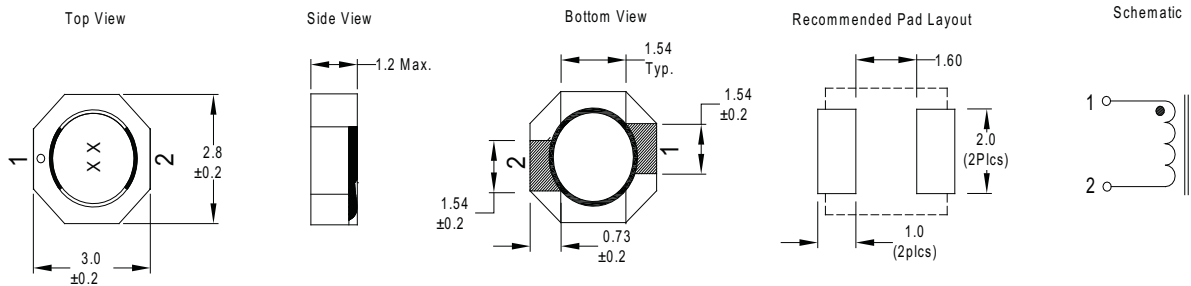
3 I_{sat}: Peak current for approximately 30% rolloff at +25°C.

4 K-factor: Used to determine B_{p-p} for core loss (see graph). B_{p-p} = K * L * ΔI. B_{p-p} (Gauss), K: (K-factor from table), L: (inductance in μH), ΔI (peak-to-peak ripple current in amps).

5 Part Number Definition: SDH2812-xxx-R

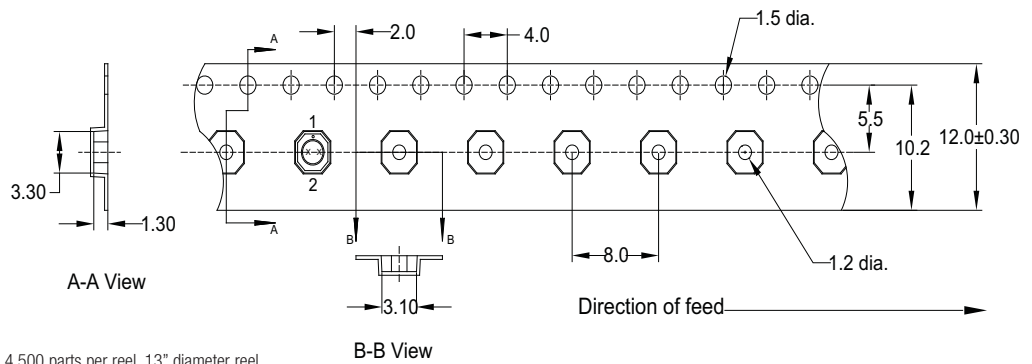
- SDH2812 = Product code and size
- xxx= Inductance value in μH, R = decimal point, If no R is present then 3rd digit equals number of zeros.
- "-R" suffix = RoHS compliant

Dimensions - mm



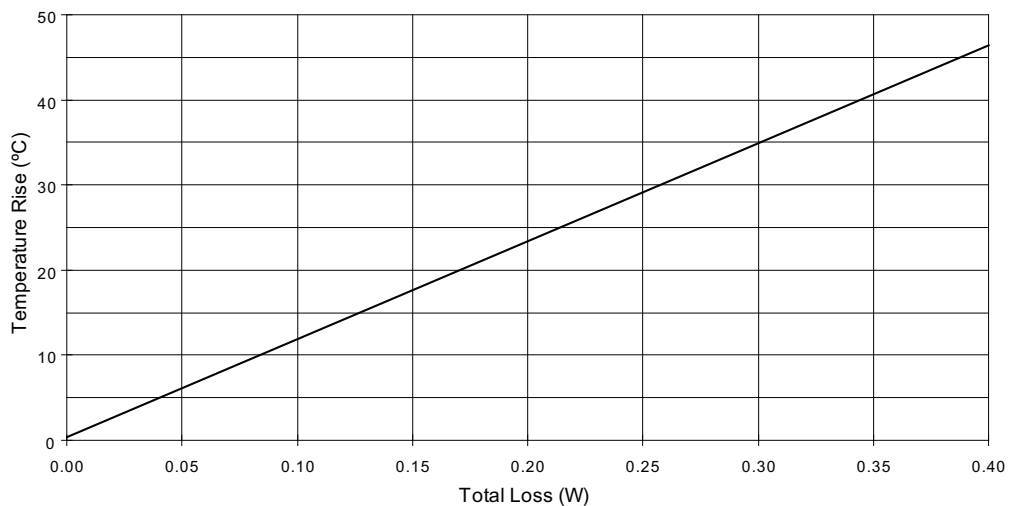
Two-digit (2) Part Marking:
 1st Digit indicates inductance value per "Part Marking Designator" column in Product Specifications table
 2nd Digit indicates bi-weekly production date code

Packaging Information - mm

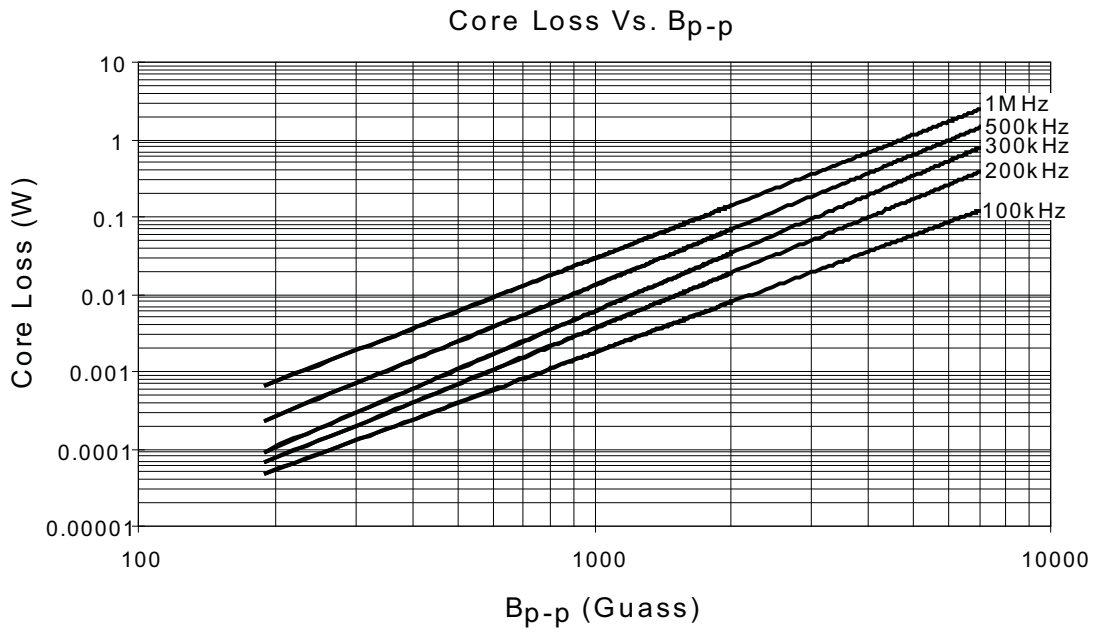


Supplied in tape-and-reel packaging, 4,500 parts per reel, 13" diameter reel.

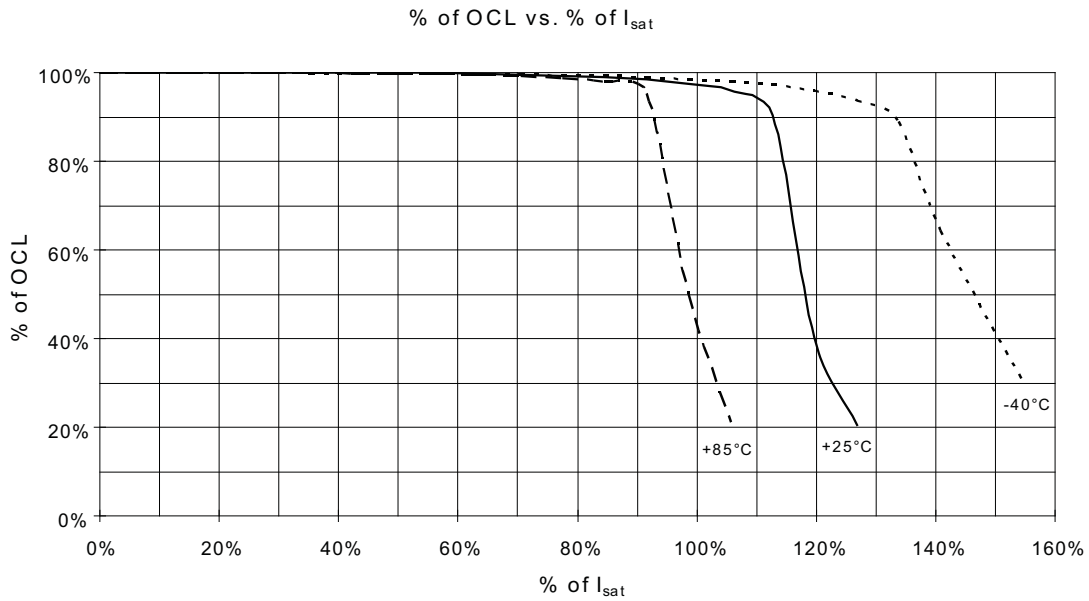
Temperature Rise vs. Total Loss



Core Loss



Inductance Characteristics



Solder Reflow Profile

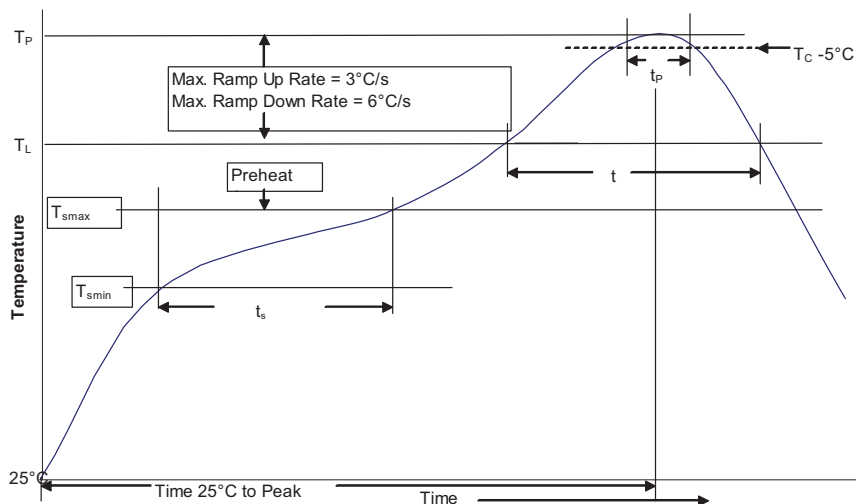


Table 1 - Standard SnPb Solder (T_c)

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-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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