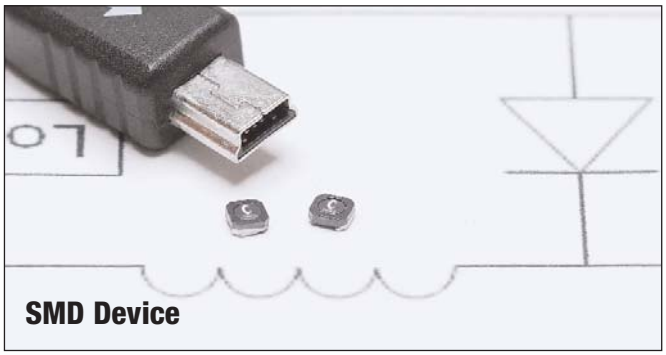
COILTRONICS®

Low Profile, High Power, Shielded Drum Inductors

SDH2812 Series



SMD Device

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%	0	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

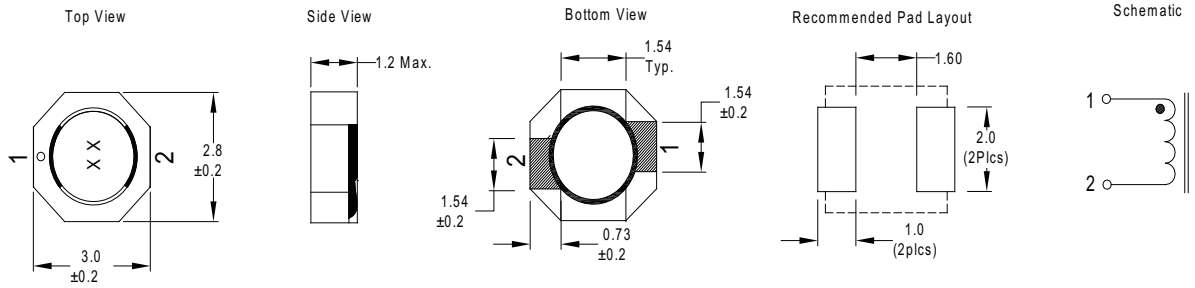
2 I_{rms}: DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB pad layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended the part temperature not 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). $B_{p-p} = K * L * \Delta I$. B_{p-p} (Gauss), K: (K-factor from table), L: (inductance in µH), ΔI (peak-to-peak ripple current in amps).

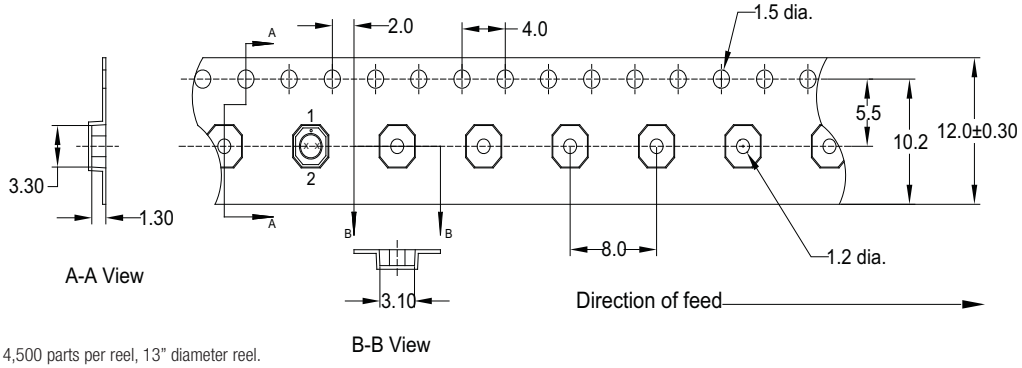
5 Part Number Definition: SDH2812-xxx-R
- SDH2812 = Product code and size
- xxx= Inductance value in µH, R = decimal point, If no R is present then 3rd digit equals number of zeros.
- "-R" suffix = RoHS compliant

Dimensions - mm



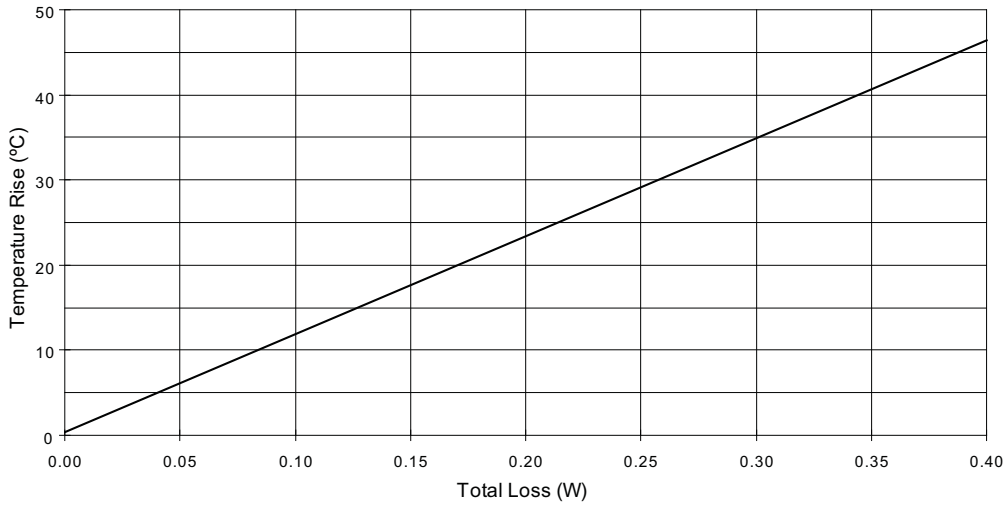
Two-digit (2) Part Marking:
1st Digit indicates inductance value per "Part Marking Designator" column in Product Specifications table
2nd Digit indicates bi-weekly production date code

Packaging Information - mm

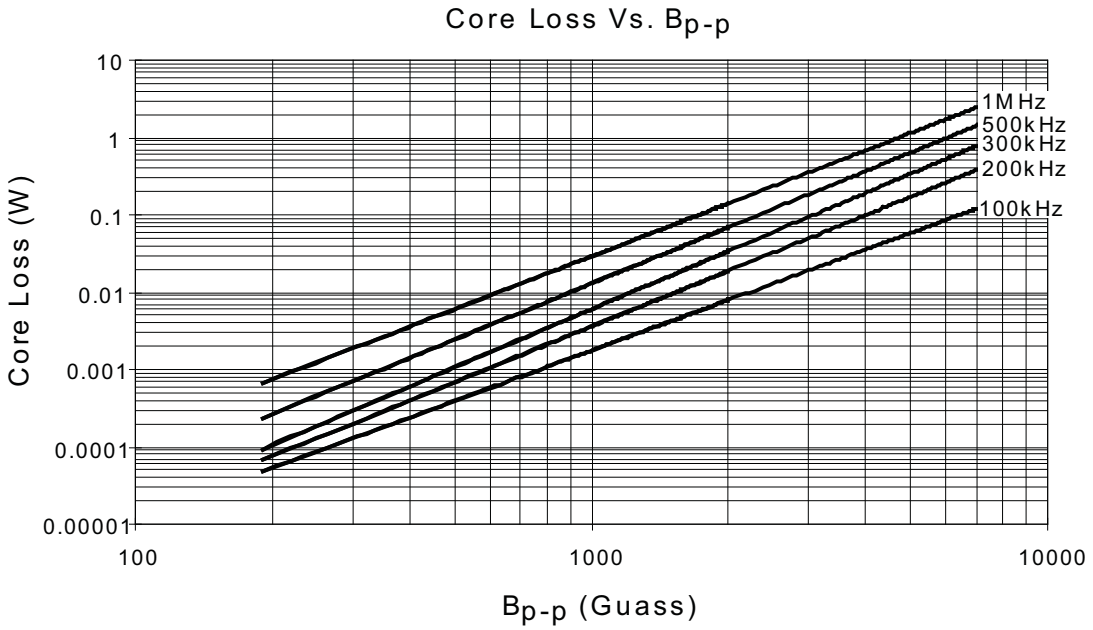


Supplied in tape-and-reel packaging, 4,500 parts per reel, 13" diameter reel.

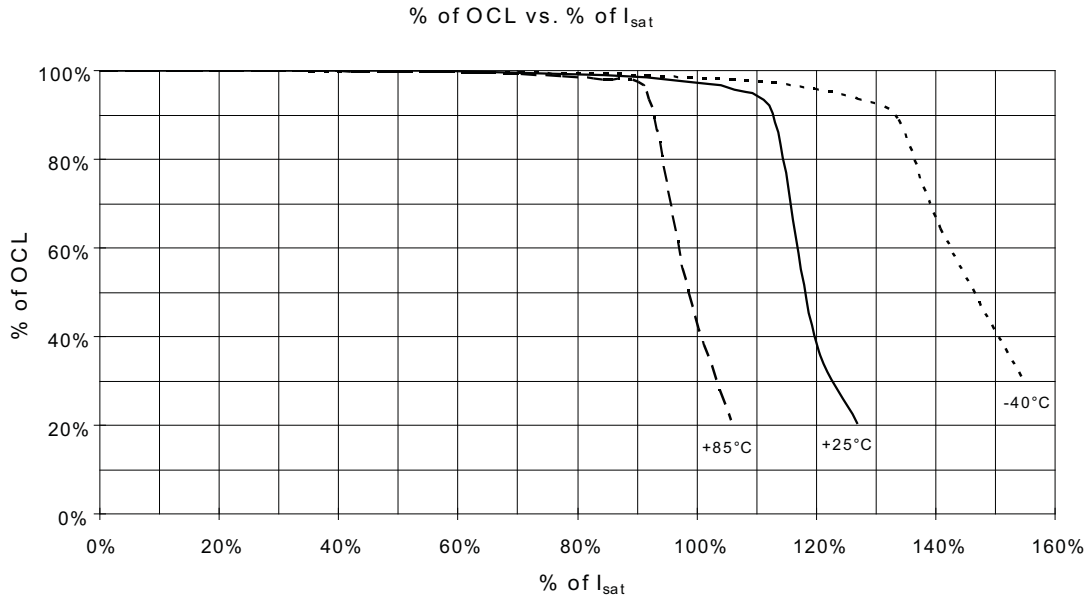
Temperature Rise vs. Total Loss



Core Loss



Inductance Characteristics



Solder Reflow Profile

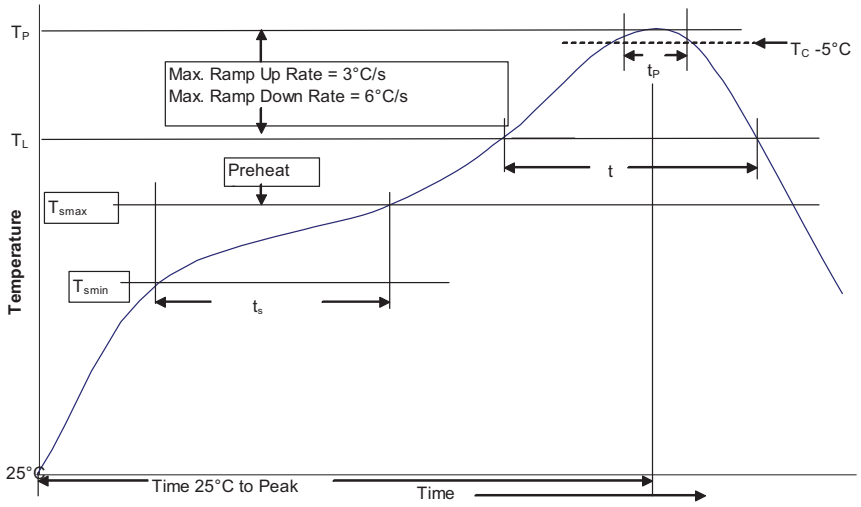


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume 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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http://moschip.ru/get-element

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