



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!



## Contact us

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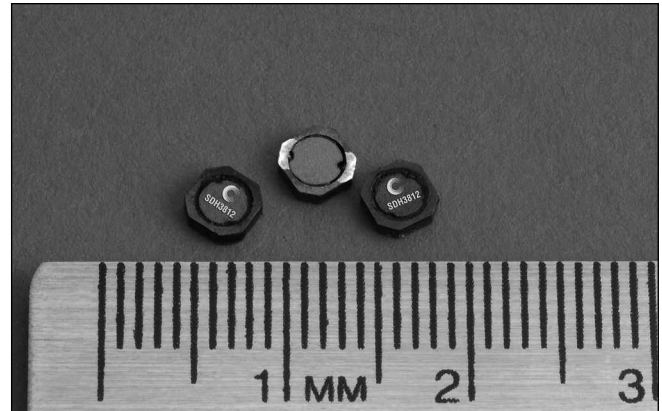
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



### Description

- 125°C maximum total temperature operation
- 3.8mm x 3.8mm x 1.2mm shielded drum core
- High power density, compact footprint
- Inductance range from 0.47uH to 220uH
- Current range from 4.2 Amps to 0.16 Amps
- Ferrite shielded, low EMI
- Ferrite core material



### Applications

- Buck or Boost inductor
- Noise filtering output filter chokes
- LED photo flash
- Handheld devices
- Notebook and battery power
- Cellular phones / PDA's / GPS systems
- Digital cameras / MP3 players / IP phones

### 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: +260°C max. for 10 seconds maximum

### Packaging

- Supplied in tape and reel packaging, 4150 per reel

Part Number	Rated Inductance (µH)	OCL (1) µH ± 20%	Part Marking Designator	I <sub>rms</sub> (2) Amperes	I <sub>sat</sub> (3) Amperes	DCR Ω @20°C (Typical)	DCR Ω @20°C (Maximum)	K-factor (4)
SDH3812-R47-R	0.47	0.43	A	2.69	4.20	0.027	0.032	145.2
SDH3812-1R0-R	1.0	0.89	B	2.07	3.00	0.045	0.054	100.6
SDH3812-1R2-R	1.2	1.17	C	1.77	2.60	0.062	0.074	87.1
SDH3812-1R5-R	1.5	1.49	D	1.67	2.30	0.069	0.083	76.9
SDH3812-2R2-R	2.2	2.23	E	1.37	1.90	0.104	0.124	62.2
SDH3812-3R3-R	3.3	3.17	F	1.14	1.60	0.148	0.177	52.3
SDH3812-4R7-R	4.7	4.96	G	0.94	1.25	0.220	0.264	42.2
SDH3812-6R8-R	6.8	6.70	H	0.85	1.05	0.265	0.317	35.3
SDH3812-8R2-R	8.2	8.01	I	0.73	0.96	0.342	0.410	33.5
SDH3812-100-R	10.0	9.67	J	0.69	0.88	0.398	0.478	30.4
SDH3812-150-R	15.0	14.45	K	0.56	0.72	0.612	0.735	23.8
SDH3812-220-R	22.0	22.00	L	0.50	0.61	0.750	0.900	20.1
SDH3812-330-R	33.0	32.90	M	0.41	0.49	1.132	1.358	16.1
SDH3812-470-R	47.0	46.20	N	0.34	0.41	1.583	1.900	13.8
SDH3812-680-R	68.0	67.40	O	0.31	0.34	2.000	2.400	11.4
SDH3812-820-R	82.0	81.80	P	0.26	0.31	2.750	3.300	10.3
SDH3812-101-R	100.0	97.50	Q	0.25	0.28	3.042	3.650	9.4
SDH3812-151-R	150.0	149.00	R	0.20	0.22	4.542	5.450	7.6
SDH3812-221-R	220.0	218.50	S	0.16	0.19	7.017	8.420	6.3

(1) Open Circuit Inductance Test Parameters: 100kHz, 0.1V, 0.0Adc.

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

(3) I<sub>sat</sub> Amperes peak for 30% maximum rolloff (@25°C)

(4) K-factor: Used to determine B p-p for core loss (see graph).

B p-p = K<sup>2</sup>·L·ΔI, B p-p(mT), K: (K factor from table), L: (Inductance in uH), ΔI (Peak to peak ripple current in Amps).

(5) Part Number Definition: SDH3812-xxx-R

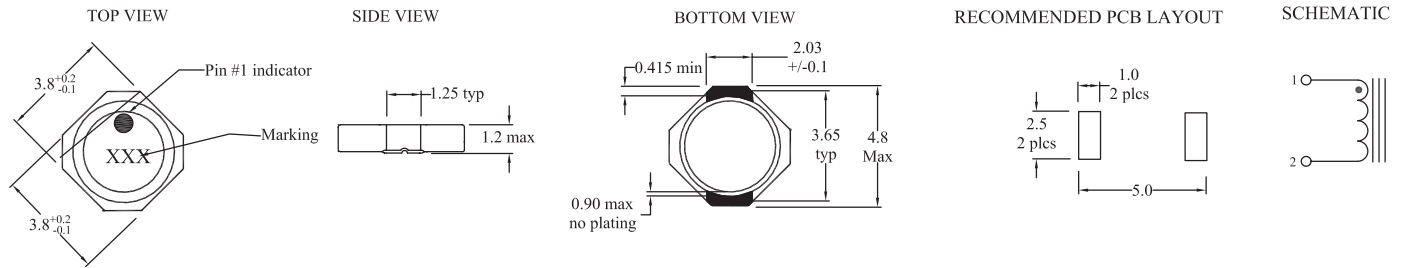
SDH3812 = Product code and size; -xxx = Inductance value in uH;

R = decimal point; If no R is present, third character = # of zeros.

-R suffix = RoHS compliant



### Mechanical Diagrams

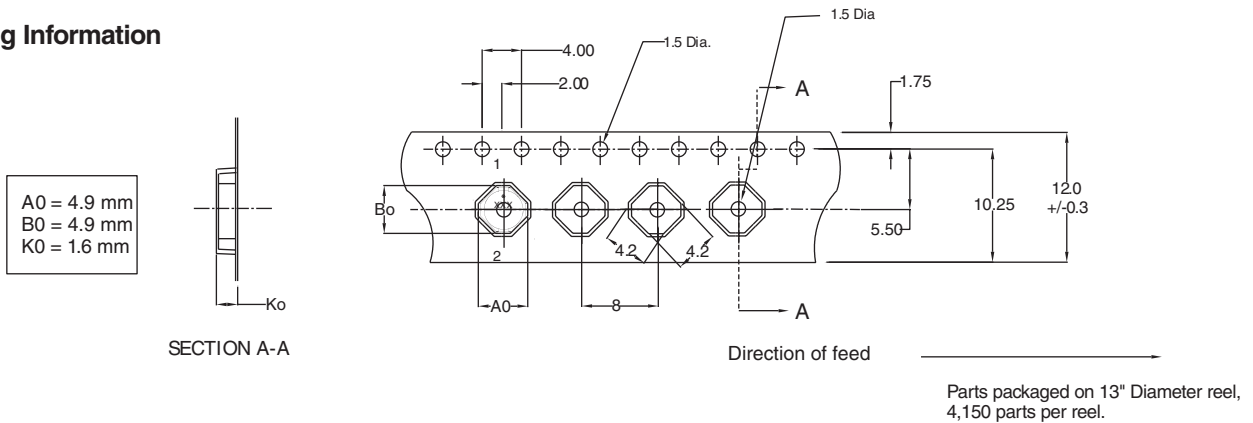


Dimensions are in millimeters.

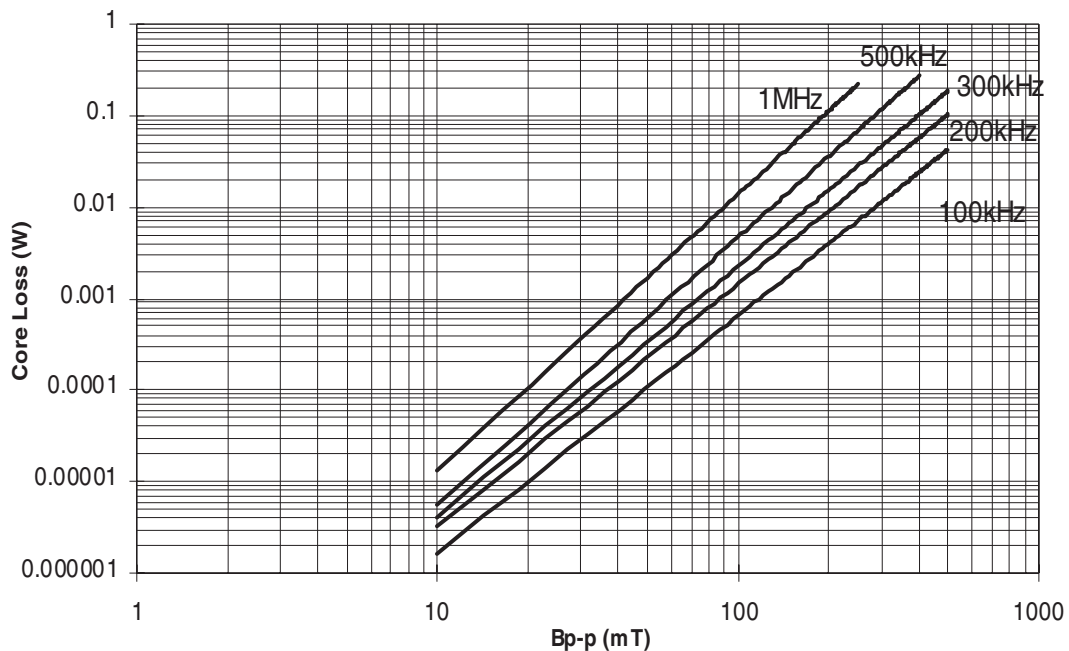
Part Marking:

3 Digit Marking: (1st digit: Indicates inductance value per Part Marking Designator in chart above); (2nd digit: Bi-weekly production date code); (3rd digit: Last digit of the year produced).

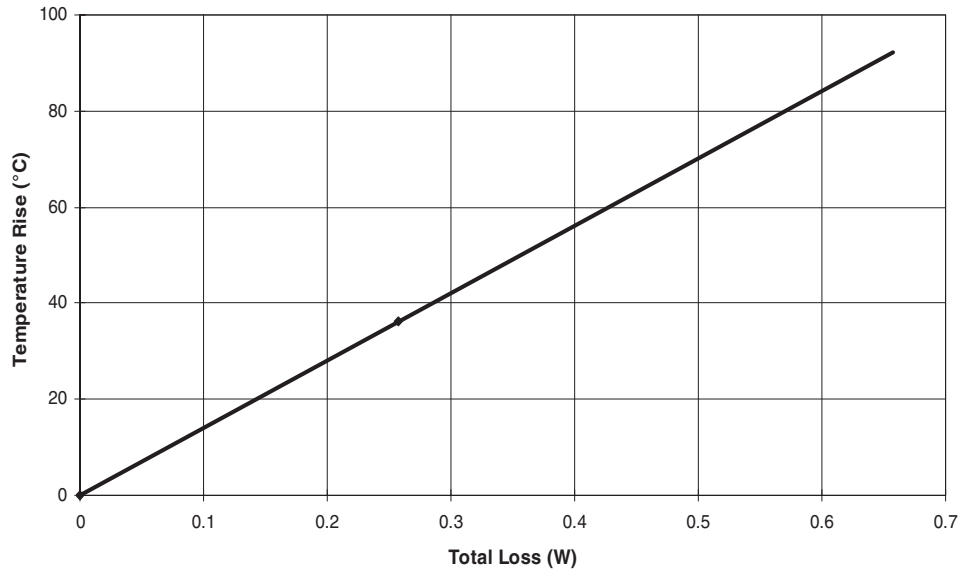
### Packaging Information



### Core Loss



### Temperature Rise vs. Loss



### Inductance Characteristics

OCL Vs. Isat

