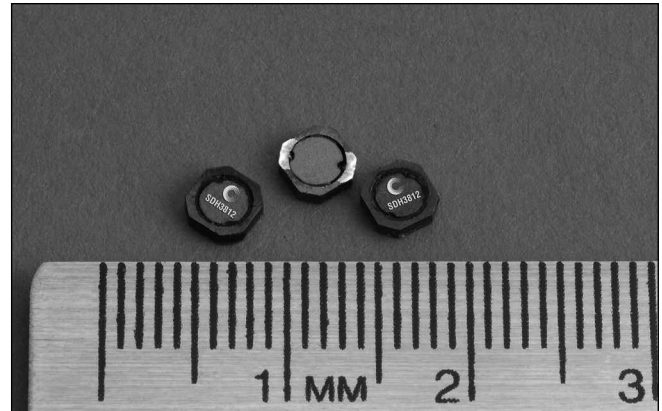


#### Description

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

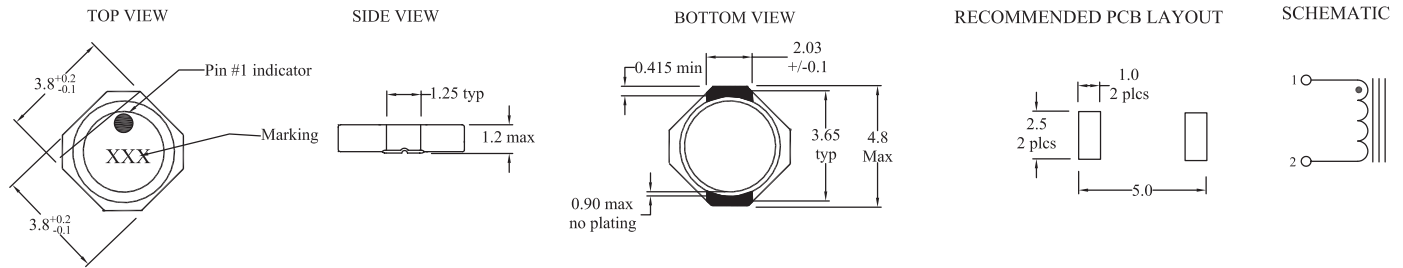
(5) Part Number Definition: SDH3812-xxx-R

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

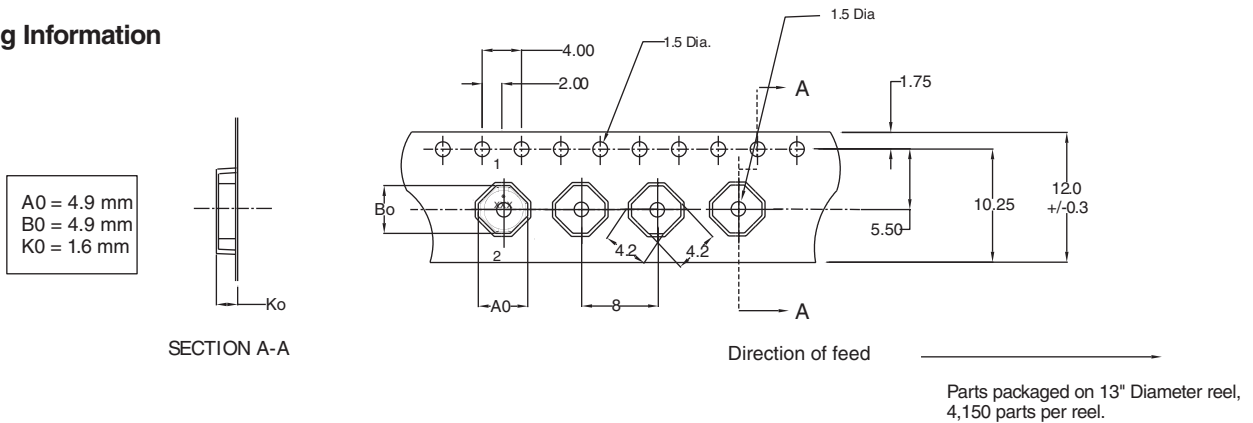


Dimensions are in millimeters.

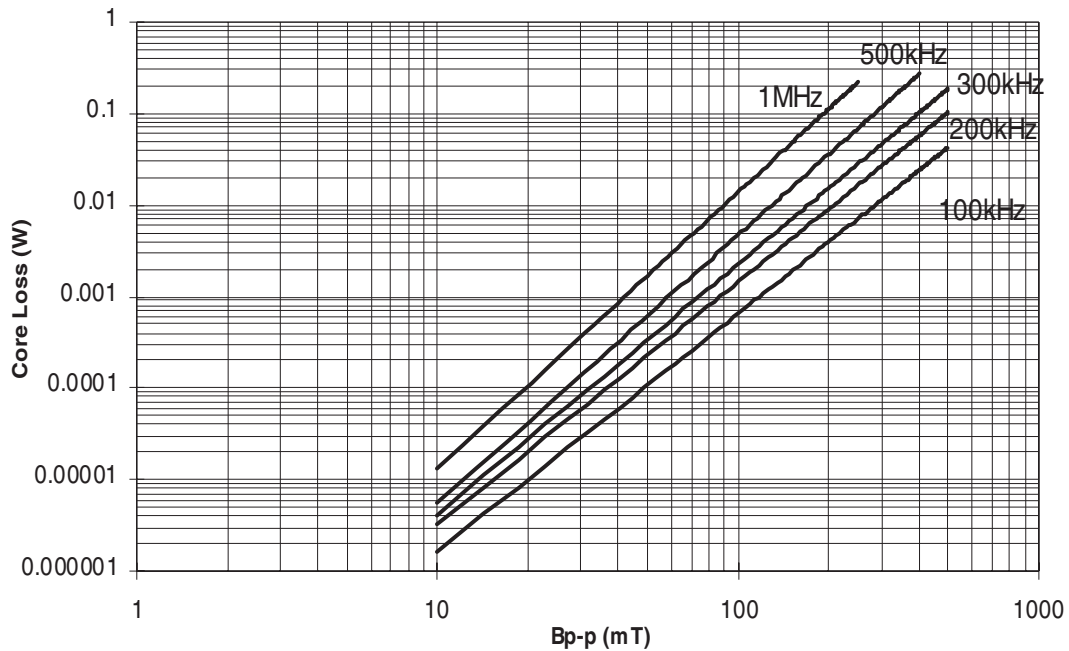
Part Marking:

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).

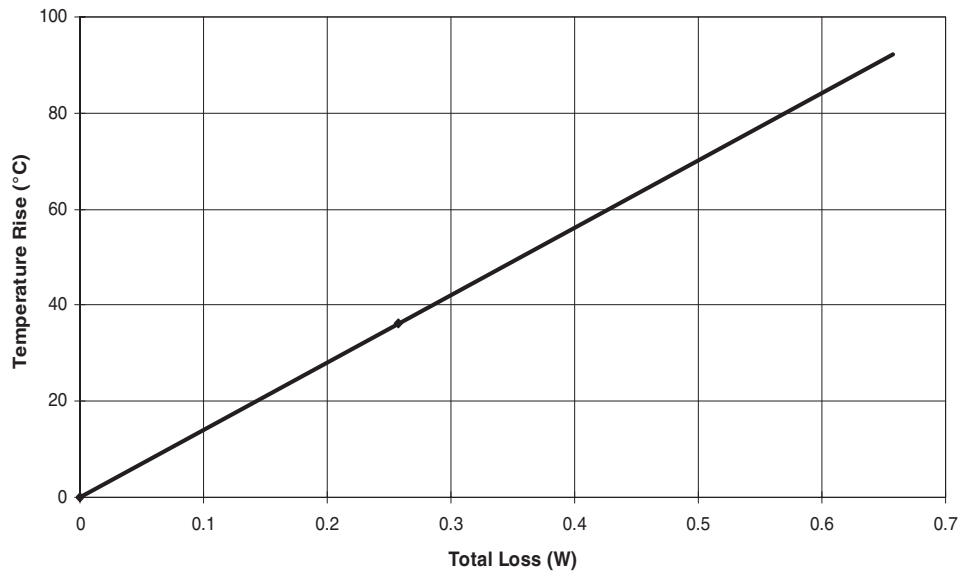
### Packaging Information



### Core Loss



**Temperature Rise vs. Loss**



**Inductance Characteristics**

OCL Vs. Isat

