

### Description

- 125°C maximum temperature operation
- Low profile surface mount inductors
- 6.0mm x 6.0mm x 2.0mm shielded drum core
- Ferrite core material
- Inductance range from 4.1uH to 100uH
- Current range from 2.0 Amps to 0.36 Amps
- Frequency range up to 1MHz

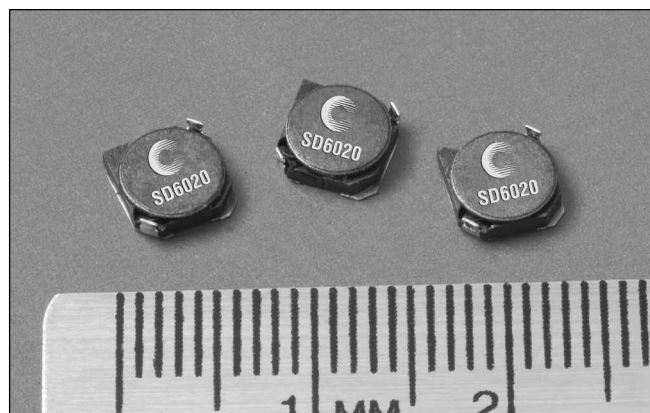


### Applications

- Palmtop Computers
- Digital Cameras
- Digital Cordless Phones, PCS Phones
- Cable/DSL Modems, PC Cards
- Wireless Handsets, Hand-Held Instruments
- Battery Backup/power
- DC-DC converters, Buck/Boost regulators

### 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, 2600 per reel

Part Number	Rated Inductance (μH)	OCL (1) μH ± 30%	I <sub>rms</sub> (2) Amperes	I <sub>sat</sub> (3) Amperes	DCR mΩ@20°C (Typical)	DCR mΩ@20°C (Maximum)	K-factor (4)
SD6020-4R1-R	4.1	3.9	2.22	1.95	47.5	57.0	28.5
SD6020-5R4-R	5.4	5.5	1.80	1.60	63.3	76.0	24.0
SD6020-6R2-R	6.2	6.5	1.63	1.40	80.0	96.0	22.2
SD6020-8R9-R	8.9	8.5	1.47	1.25	96.7	116.0	19.3
SD6020-100-R	10	9.7	1.39	1.20	103.3	124.0	18.1
SD6020-120-R	12	11	1.31	1.10	115.0	138.0	17.1
SD6020-150-R	15	13	1.07	0.97	163.3	196.0	15.4
SD6020-180-R	18	16	1.10	0.85	175.0	210.0	13.9
SD6020-220-R	22	20	0.94	0.80	241.7	290.0	12.7
SD6020-270-R	27	27	0.82	0.75	275.0	330.0	10.9
SD6020-330-R	33	29	0.76	0.65	320.8	385.0	10.5
SD6020-390-R	39	37	0.63	0.57	416.7	500.0	9.2
SD6020-470-R	47	45	0.61	0.54	495.8	595.0	8.2
SD6020-560-R	56	55	0.57	0.50	515.0	618.0	7.8
SD6020-680-R	68	68	0.50	0.43	700.0	840.0	6.7
SD6020-820-R	82	80	0.48	0.41	815.0	978.0	6.3
SD6020-101-R	100	94	0.42	0.36	1000.0	1200.0	5.8

(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 35% rolloff (@25°C)

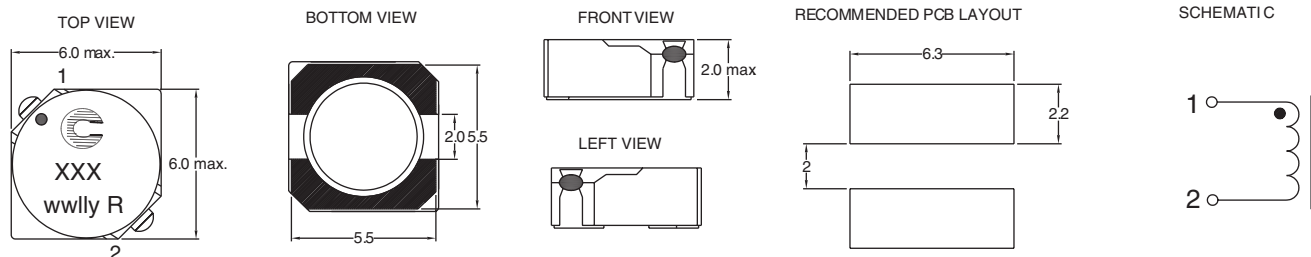
(4) K-factor: Used to determine B p-p for core loss (see graph).

B p-p = K\*L\*ΔI, B p-p(mT), K: (K factor from table), L: (Inductance in uH), ΔI (Peak to peak ripple current in Amps).

(5) Part Number Definition: SD6020-xxx-R

SD6020 = 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

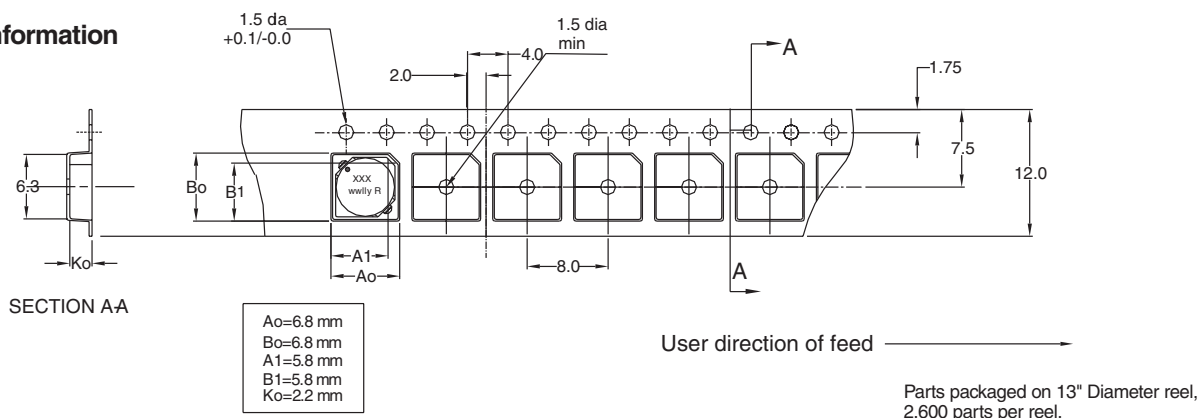
## Mechanical Diagrams



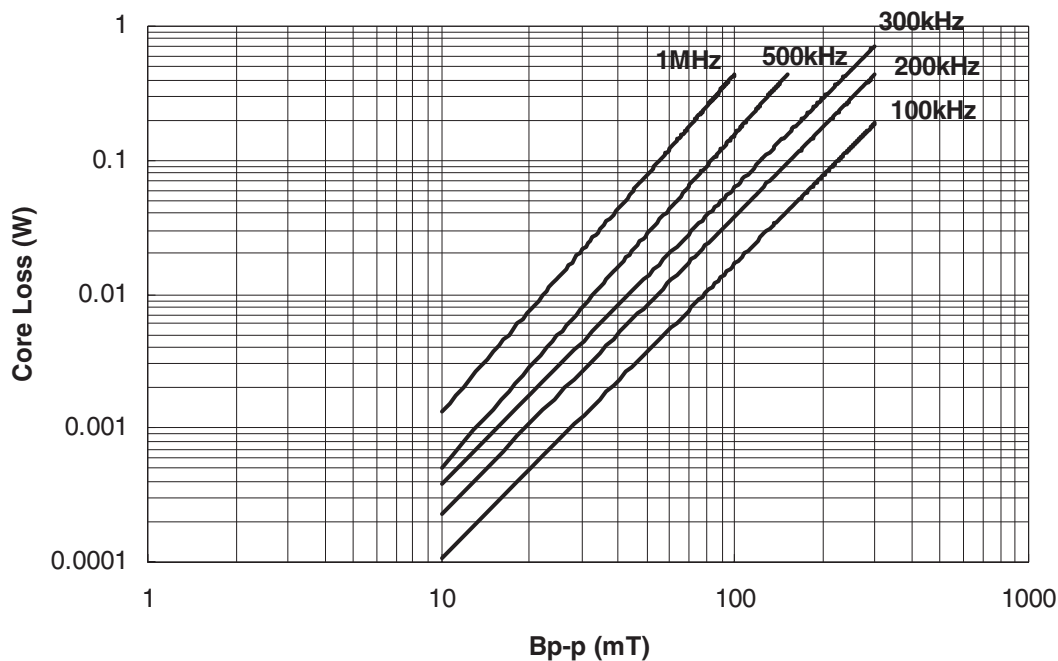
Dimensions are in millimeters.

xxx = Inductance value in  $\mu\text{H}$ . R = decimal point. If no R is present third character = #Of zeros.  
wwlly = Date code, R = Revision level.

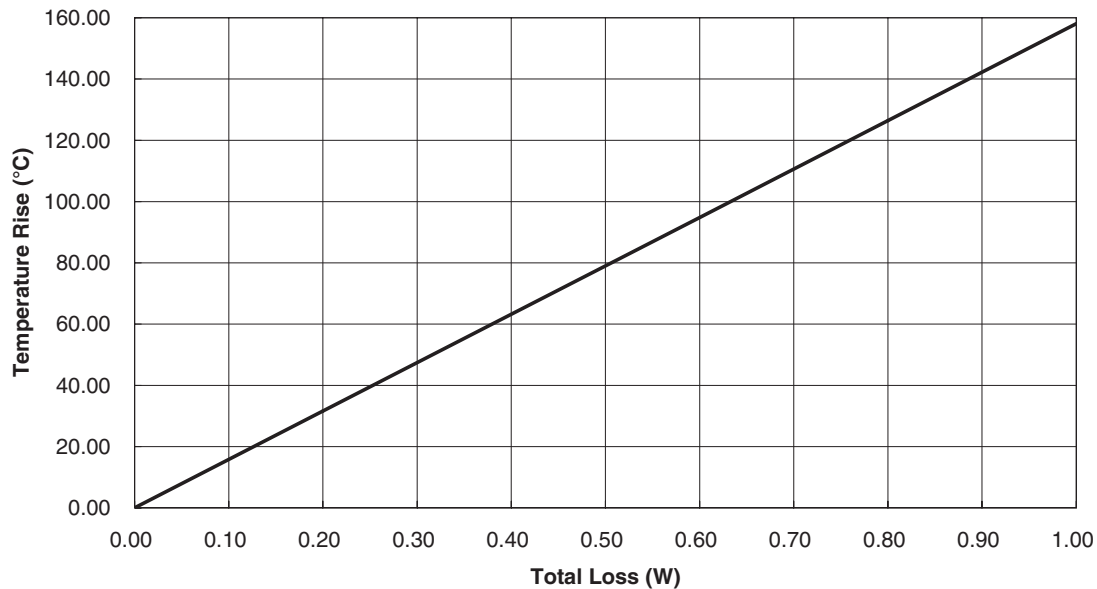
## Packaging Information



## Core Loss



**Temperature Rise vs. Loss**



**Inductance Characteristics**

**OCL Vs. Isat**

