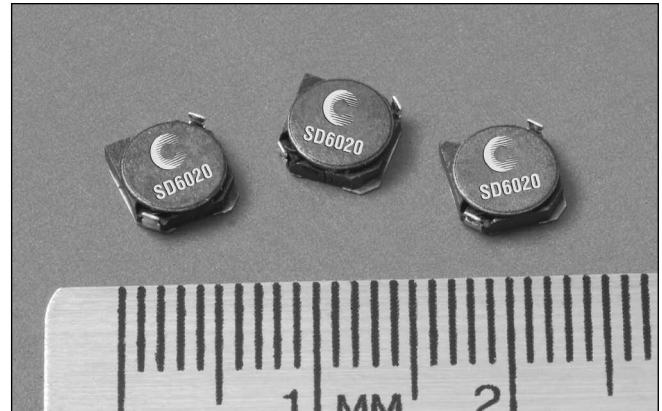


### Description

- 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).

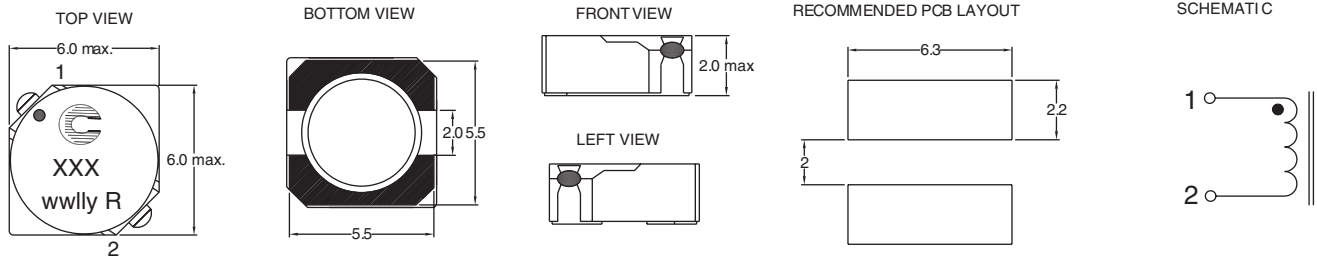
(5) Part Number Definition: SD6020-xxx-R

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

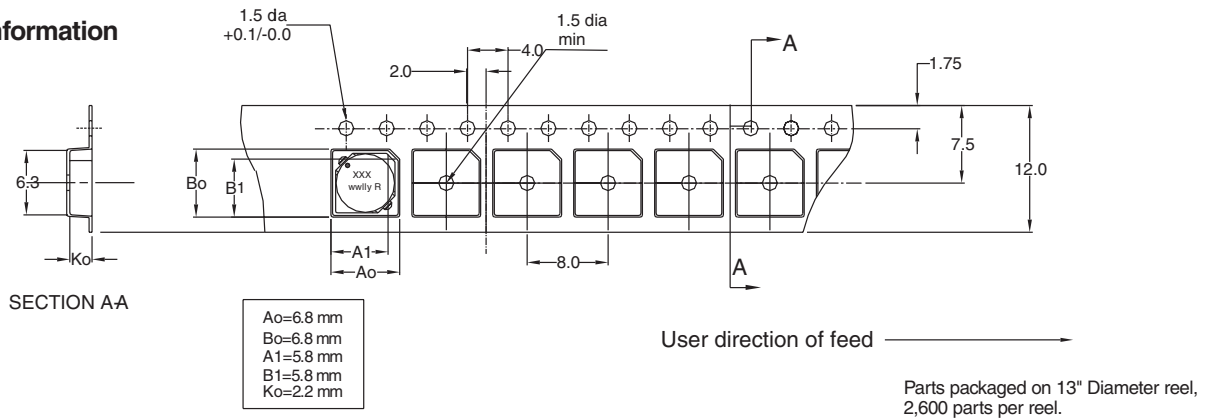
### Mechanical Diagrams



Dimensions are in millimeters.

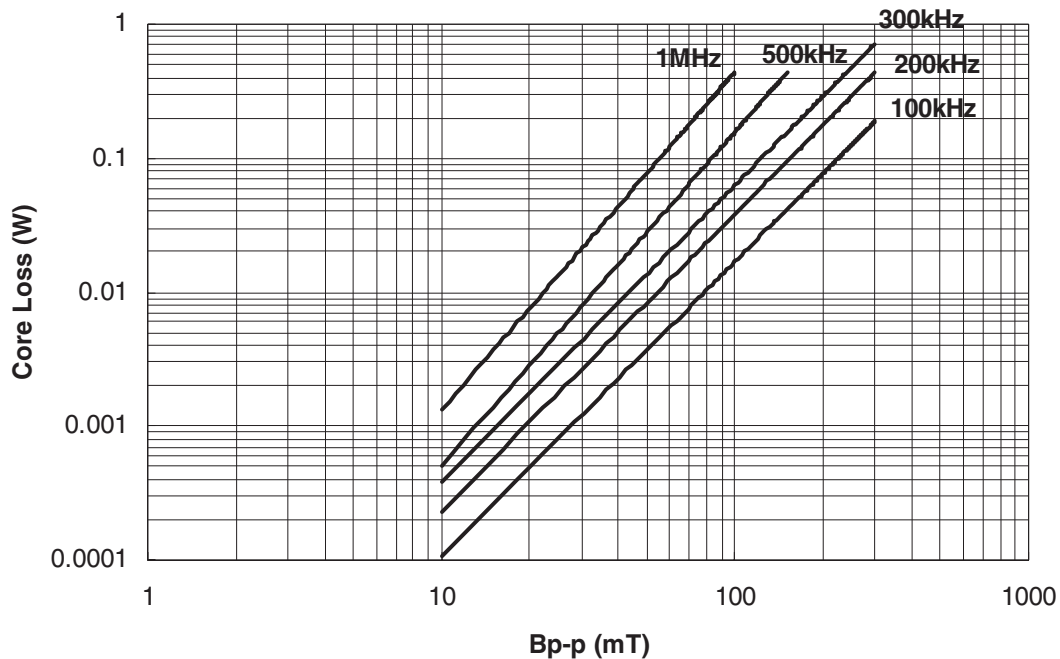
xxx = Inductance value in uH. R = decimal point. If no R is present third character = #Of zeros.  
wwlly = Date code, R = Revision level.

### Packaging Information



Parts packaged on 13" Diameter reel,  
2,600 parts per reel.

### Core Loss



**Temperature Rise vs. Loss**



**Inductance Characteristics**

**OCL Vs. Isat**

