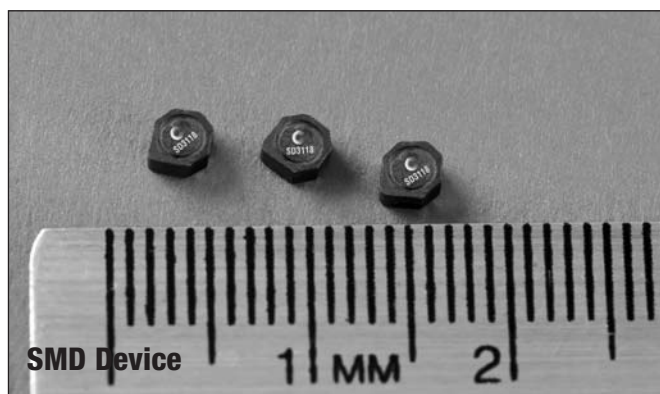


# Low Profile Power Inductors

## SD3118 Series



### Description

- 125°C maximum total temperature operation
- 3.2mm x 3.2mm x 1.8mm maximum shielded drum core
- Ferrite core material
- Inductance range from 1.0μH to 1000μH
- Current range from 2.94 Amps to 0.083 Amps
- Frequency range up to 4MHz
- RoHS compliant

### Applications

- Cellular phones, Digital cameras, CD players, PDAs
- Small LCD displays
- LED driver and LED flash circuits
- Hard disk drives
- Backlighting
- EL panel

### Environmental Data

- Storage temperature range: -40°C to +125°C
- Operating temperature range: -40°C to +125°C (with derated current)
- Solder reflow temperature: +260°C max. for 10 seconds maximum

### Packaging

- Supplied in tape and reel packaging, 4100 per reel, 13" diameter reel

### Product Specifications

| Part Number <sup>5</sup> | Rated Inductance (μH) | OCL <sup>1</sup> (μH) | Part Marking Designator | I <sub>rms</sub> <sup>2</sup> (Amps) | I <sub>sat</sub> <sup>3</sup> (Amps) | DCR (Ω) @ 20°C (Typical) | K-factor <sup>4</sup> |
|--------------------------|-----------------------|-----------------------|-------------------------|--------------------------------------|--------------------------------------|--------------------------|-----------------------|
| SD3118-1R0-R             | 1.0                   | 1.04±30%              | A                       | 2.01                                 | 3.07                                 | 0.041                    | 84                    |
| SD3118-1R5-R             | 1.5                   | 1.44±30%              | B                       | 1.81                                 | 2.42                                 | 0.051                    | 68                    |
| SD3118-2R2-R             | 2.2                   | 2.12±30%              | C                       | 1.50                                 | 2.00                                 | 0.074                    | 57                    |
| SD3118-3R3-R             | 3.3                   | 3.36±30%              | D                       | 1.22                                 | 1.59                                 | 0.113                    | 56                    |
| SD3118-4R7-R             | 4.7                   | 4.90±30%              | E                       | 1.02                                 | 1.31                                 | 0.162                    | 39                    |
| SD3118-6R8-R             | 6.8                   | 6.72±30%              | F                       | 0.85                                 | 1.12                                 | 0.232                    | 32                    |
| SD3118-8R2-R             | 8.2                   | 8.10±30%              | G                       | 0.81                                 | 1.02                                 | 0.257                    | 29                    |
| SD3118-100-R             | 10.0                  | 10.4±30%              | H                       | 0.75                                 | 0.90                                 | 0.295                    | 26                    |
| SD3118-150-R             | 15.0                  | 14.9±20%              | I                       | 0.62                                 | 0.75                                 | 0.440                    | 21                    |
| SD3118-220-R             | 22.0                  | 22.5±20%              | J                       | 0.50                                 | 0.61                                 | 0.676                    | 18                    |
| SD3118-330-R             | 33.0                  | 33.1±20%              | K                       | 0.41                                 | 0.51                                 | 0.986                    | 14                    |
| SD3118-470-R             | 47.0                  | 47.5±20%              | L                       | 0.370                                | 0.42                                 | 1.21                     | 12                    |
| SD3118-221-R             | 220.0                 | 221.9±20%             | M                       | 0.182                                | 0.177                                | 4.77                     | 6                     |
| SD3118-331-R             | 330.0                 | 329.9±20%             | N                       | 0.146                                | 0.145                                | 7.40                     | 5                     |
| SD3118-471-R             | 470.0                 | 470.1±20%             | O                       | 0.131                                | 0.122                                | 9.20                     | 4                     |
| SD3118-681-R             | 680.0                 | 680.3±20%             | P                       | 0.107                                | 0.101                                | 13.70                    | 3                     |
| SD3118-102-R             | 1000.0                | 999.4±20%             | Q                       | 0.087                                | 0.083                                | 20.90                    | 3                     |

1 Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.10V<sub>rms</sub>, 0.0Adc

2 I<sub>rms</sub>: 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.

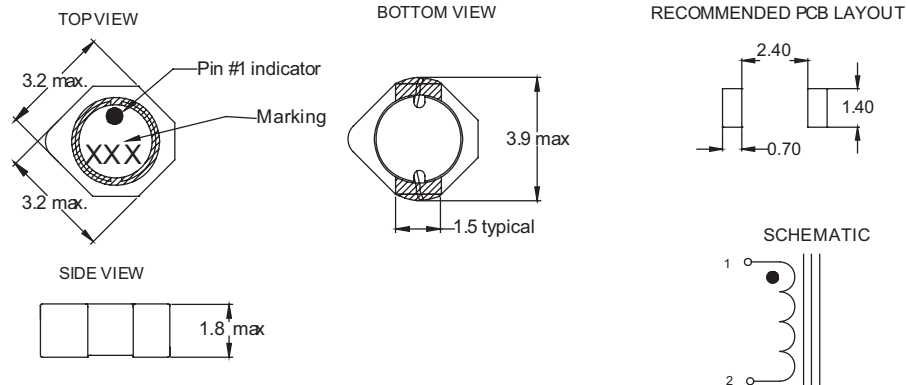
3 I<sub>sat</sub>: Peak current for approximately 30% rolloff at +20°C.

4 K-factor: Used to determine B<sub>p-p</sub> for core loss (see graph). B<sub>p-p</sub> = K \* L \* ΔI. B<sub>p-p</sub> (mT), K: (K-factor from table), L: (inductance in μH), ΔI (peak-to-peak ripple current in amps).

5 Part Number Definition: HCF1007-xxx-R

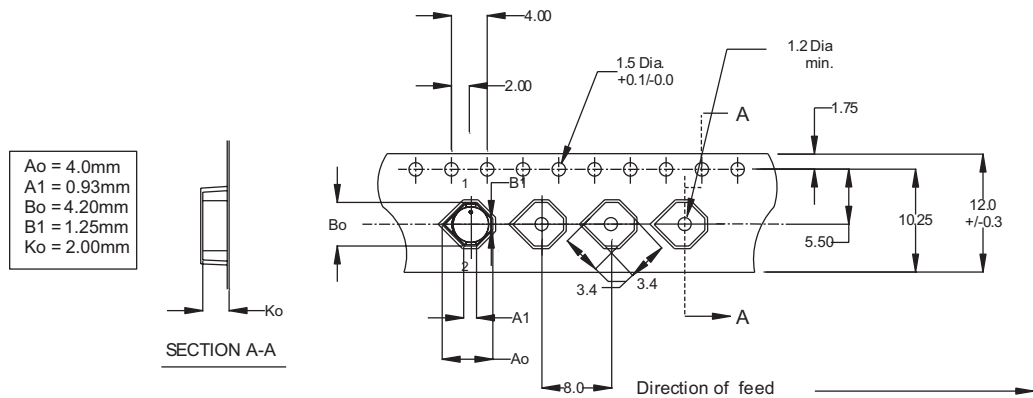
- SD3118 = Product code and size
- xxx= Inductance value in μH, R = decimal point.
- If no "R" is present then third character =# of zeros
- -R suffix = RoHS compliant

## Dimensions - mm



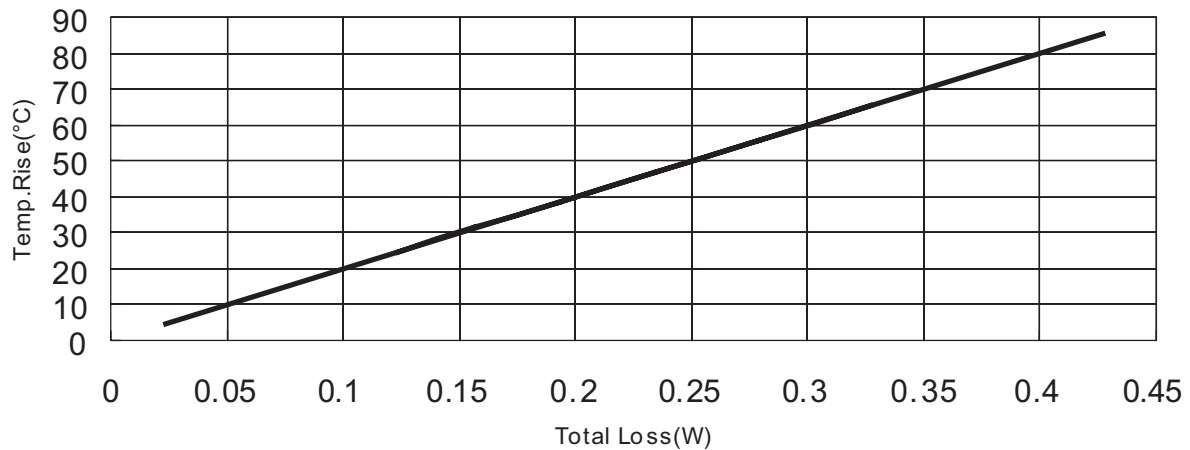
3 Digit Part Marking: (1st digit: Indicates inductance value per letter in Part Marking Designator); (2nd digit: Bi-weekly production date code); (3rd digit: Last digit of the year produced).

## Packaging Information - mm

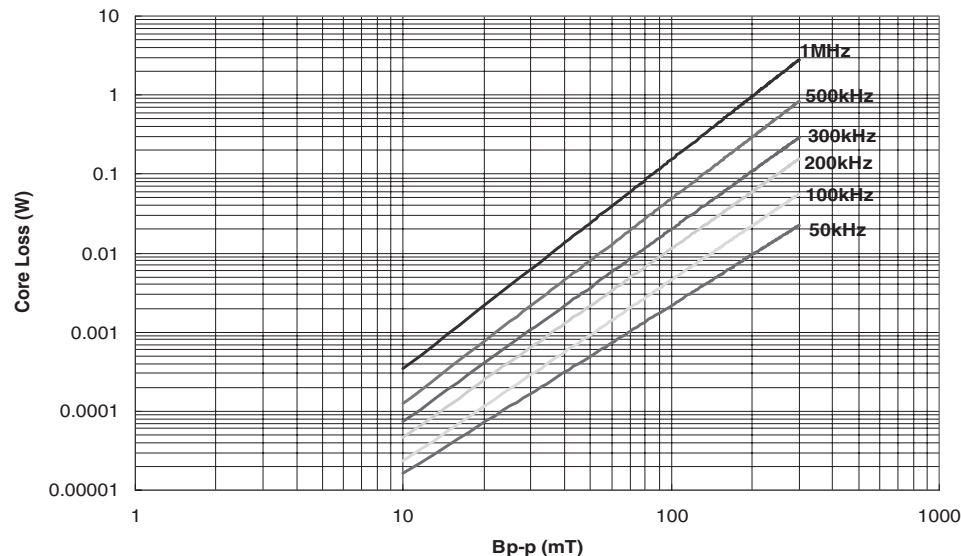


Supplied in tape-and-reel packaging, 4100 parts per reel, 13" diameter reel.

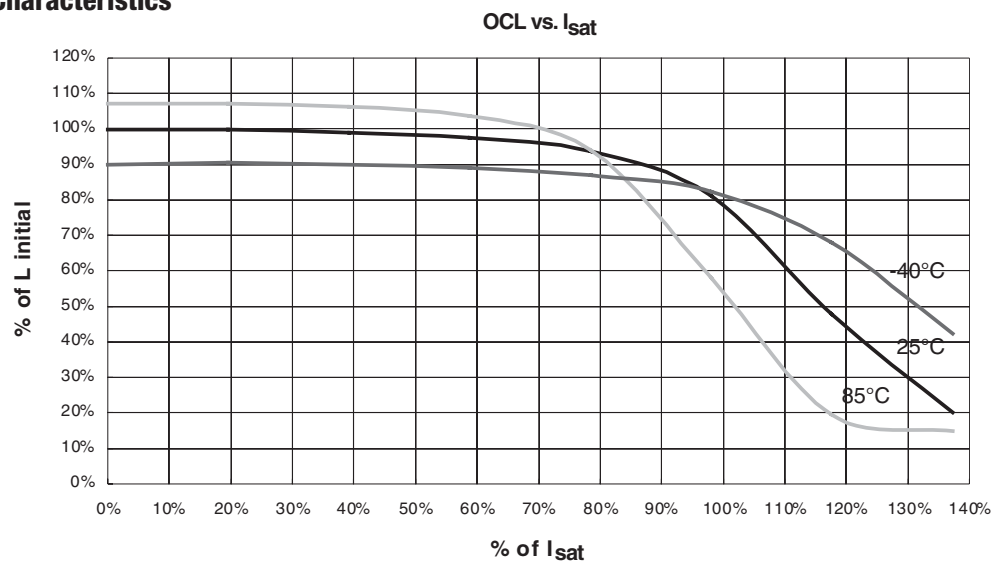
## Temperature Rise vs. Total Loss



## Core Loss



## Inductance Characteristics



### North America

Cooper Electronic Technologies  
1225 Broken Sound Parkway NW  
Suite F  
Boca Raton, FL 33487-3533  
Tel: 1-561-998-4100  
Fax: 1-561-241-6640  
Toll Free: 1-888-414-2645

Cooper Bussmann  
P.O. Box 14460  
St. Louis, MO 63178-4460  
Tel: 1-636-394-2877  
Fax: 1-636-527-1607

### Europe

Cooper Electronic Technologies  
Cooper (UK) Limited  
Burton-on-the-Wolds  
Leicestershire • LE12 5TH UK  
Tel: +44 (0) 1509 882 737  
Fax: +44 (0) 1509 882 786

Cooper Electronic Technologies  
Avda. Santa Eulalia, 290  
08223  
Terrassa, (Barcelona), Spain  
Tel: +34 937 362 812  
+34 937 362 813  
Fax: +34 937 362 719

### Asia Pacific

Cooper Electronic Technologies  
1 Jalan Kilang Timor  
#06-01 Pacific Tech Centre  
Singapore 159303  
Tel: +65 278 6151  
Fax: +65 270 4160

The only controlled copy of this Data Sheet is the electronic read-only version located on the Cooper Bussmann Network Drive. All other copies of this document are by definition uncontrolled. This bulletin is intended to clearly present comprehensive product data and provide technical information that will help the end user with design applications. Cooper Bussmann reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Cooper Bussmann also reserves the right to change or update, without notice, any technical information contained in this bulletin. Once a product has been selected, it should be tested by the user in all possible applications.

Life Support Policy: Cooper Bussmann does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Eaton:](#)

[SD3118-1R0-R](#) [SD3118-1R5-R](#) [SD3118-100-R](#) [SD3118-102-R](#) [SD3118-150-R](#) [SD3118-2R2-R](#) [SD3118-220-R](#)  
[SD3118-221-R](#) [SD3118-3R3-R](#) [SD3118-330-R](#) [SD3118-331-R](#) [SD3118-470-R](#) [SD3118-471-R](#) [SD3118-6R8-R](#)  
[SD3118-681-R](#) [SD3118-8R2-R](#)