



**THE DATASHEET OF  
SM5018-1R0MHF**





# SM5018 Series



## 1. Features:

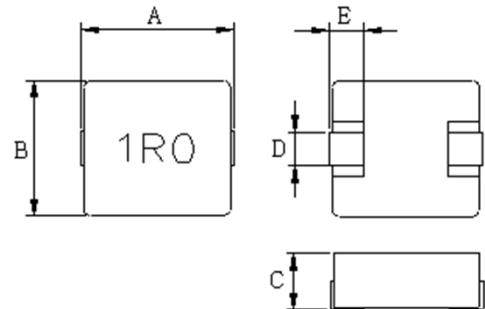
- 12,7x13.9mm foot Print, 5.0mm Max. height SMD Power Inductor for high frequency application.
- Inductance range from 0.10uH to 15uH.
- High saturation current characteristics by distributed gapped metal dust core.
- Ideal for portable device, computers servers, storage device, workstations, VGA card, Telecommunication Equipment, voltage-regulator modules & High Density DC to DC converter Board.
- Working Frequency up to 5Mhz.
- Tape & Reel Quantity: 250 piece per 13 inches reel.
- Operating Temperature Range -55°C to + 150°C.



## 2. Electrical Characteristics:

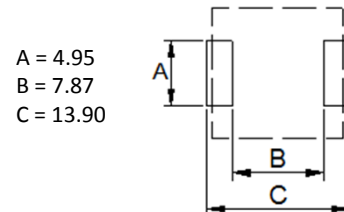
| ITG Part Number | OCL Inductance (uH) $\pm 20\%$ | DCR (m $\Omega$ ) Typ. | DCR (m $\Omega$ ) Max. | I <sub>rms</sub> (AMP) | I <sub>sat</sub> (AMP) |
|-----------------|--------------------------------|------------------------|------------------------|------------------------|------------------------|
| SM5018-R10MHF   | 0.10                           | 0.50                   | 0.60                   | 55.0                   | 118.0                  |
| SM5018-R22MHF   | 0.22                           | 0.70                   | 0.80                   | 51.0                   | 110.0                  |
| SM5018-R33MHF   | 0.33                           | 1.00                   | 1.10                   | 42.0                   | 80.0                   |
| SM5018-R47MHF   | 0.47                           | 1.10                   | 1.30                   | 38.0                   | 65.0                   |
| SM5018-R56MHF   | 0.56                           | 1.27                   | 1.50                   | 36.0                   | 55.0                   |
| SM5018-R68MHF   | 0.68                           | 1.40                   | 1.70                   | 34.0                   | 54.0                   |
| SM5018-R82MHF   | 0.82                           | 1.90                   | 2.30                   | 31.0                   | 53.0                   |
| SM5018-1R0MHF   | 1.00                           | 2.10                   | 2.50                   | 29.0                   | 50.0                   |
| SM5018-1R5MHF   | 1.50                           | 3.40                   | 4.10                   | 23.0                   | 48.0                   |
| SM5018-1R8MHF   | 1.80                           | 4.10                   | 4.90                   | 19.0                   | 40.0                   |
| SM5018-2R2MHF   | 2.20                           | 4.60                   | 5.50                   | 20.0                   | 32.0                   |
| SM5018-3R3MHF   | 3.30                           | 7.69                   | 9.20                   | 15.0                   | 32.0                   |
| SM5018-4R7MHF   | 4.70                           | 12.49                  | 15.00                  | 12.0                   | 27.0                   |
| SM5018-5R6MHF   | 5.60                           | 13.75                  | 16.50                  | 11.50                  | 22.0                   |
| SM5018-6R8MHF   | 6.80                           | 15.40                  | 18.50                  | 11.0                   | 21.0                   |
| SM5018-8R2MHF   | 8.20                           | 18.89                  | 22.50                  | 9.5                    | 18.0                   |
| SM5018-100MHF   | 10.00                          | 21.40                  | 25.50                  | 9.0                    | 16.0                   |
| SM5018-150MHF   | 15.00                          | 27.50                  | 33.00                  | 8.0                    | 14.0                   |

## 3. Mechanical Dimensions (unit: mm):



| A $\pm$ | B $\pm$ | C    | D $\pm$ | E $\pm$ |
|---------|---------|------|---------|---------|
| 0.50    | Max     | Max  | 0.50    | 0.30    |
| 13.20   | 12.90   | 5.00 | 3.50    | 2.30    |

Recommended PCB Layout  
(unit in mm)



A = 4.95  
B = 7.87  
C = 13.90

### Notes:

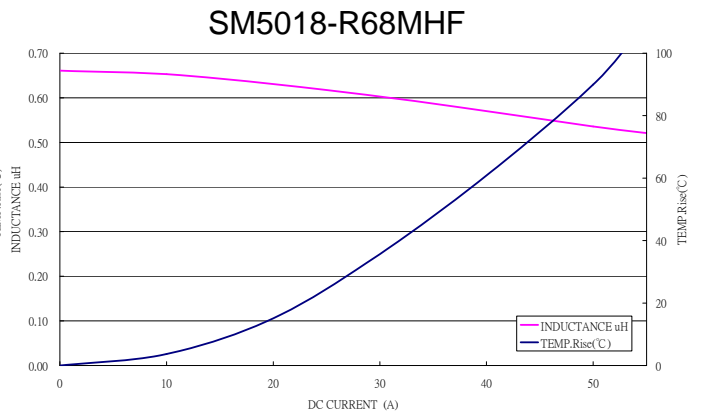
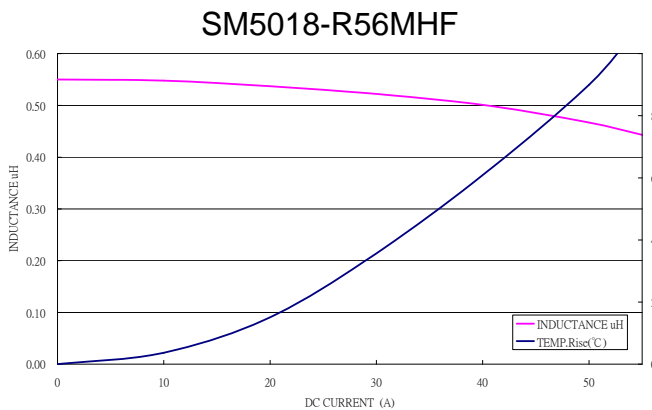
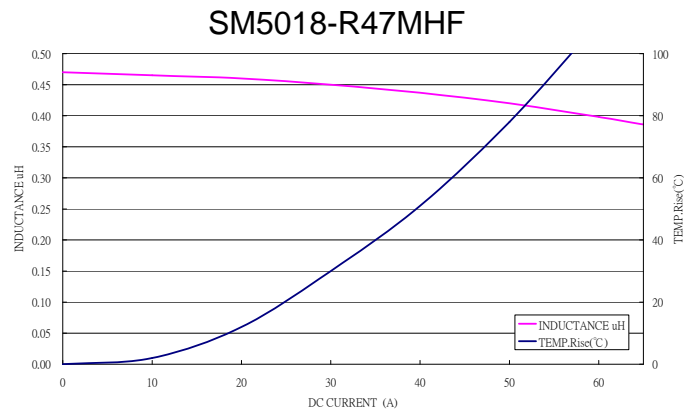
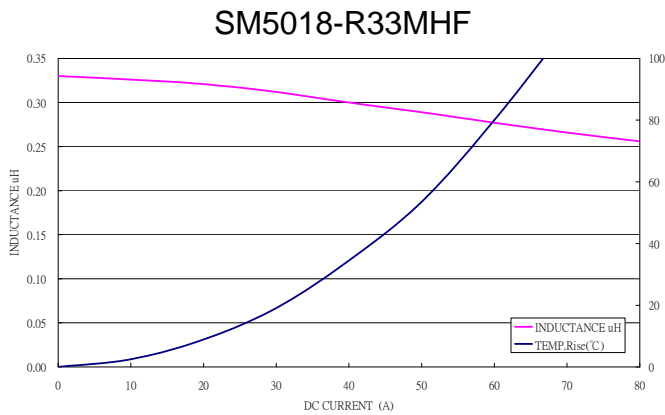
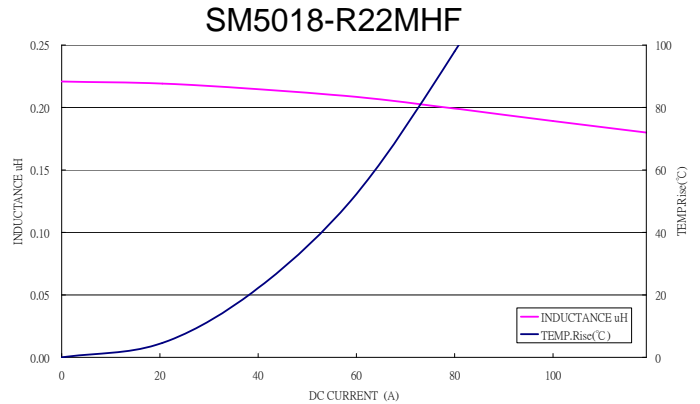
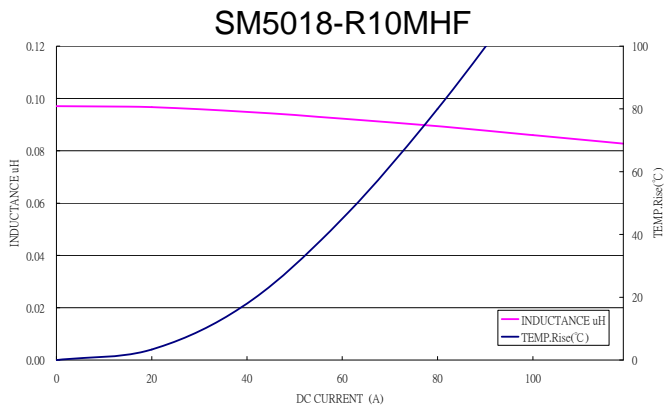
- 1) Open Circuit Inductance(OCL) and L@ I<sub>rms</sub> and L @I<sub>sat</sub> are measured at: 100KHz, 1.0V ;(Ta=25°C).
- 2) I<sub>sat</sub>: DC current that causes inductance to drop approximately by 20% from OCL ;(Ta=25°C).
- 3) I<sub>rms</sub>: DC current for an approximate temperature rise of 40°C 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.
- 4) Inductance vs. DC Current vs. Temperature Curve, please see the next pages for more detail information.



# SM5018 Series



## 4. Inductance vs. Current vs. Temperature



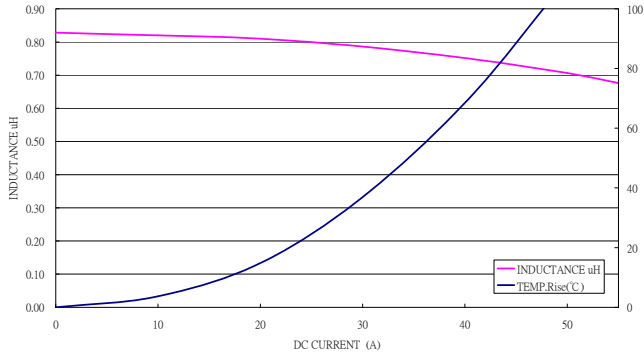


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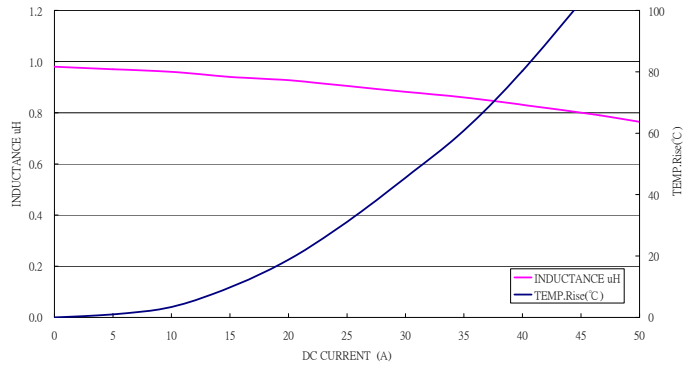


## 4. Inductance vs. Current vs. Temperature

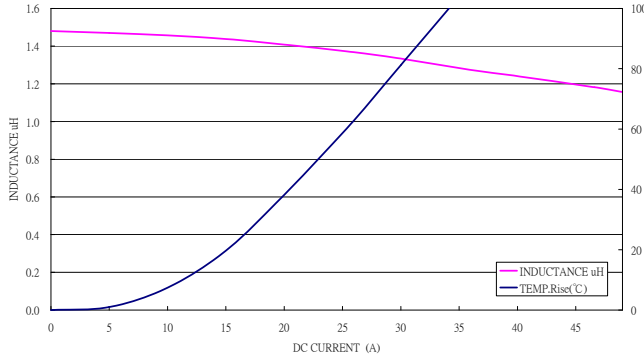
SM5018-R82MHF



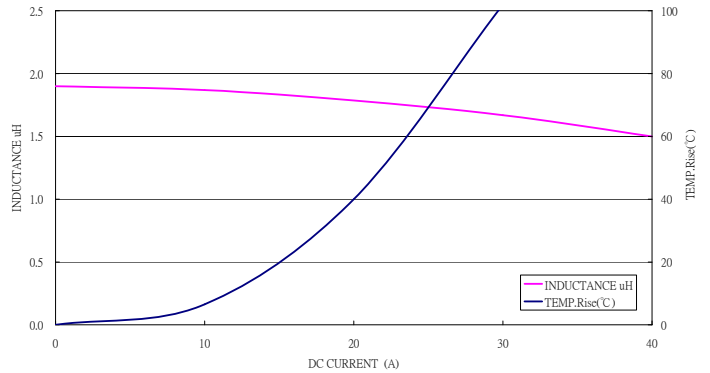
SM5018-1R0MHF



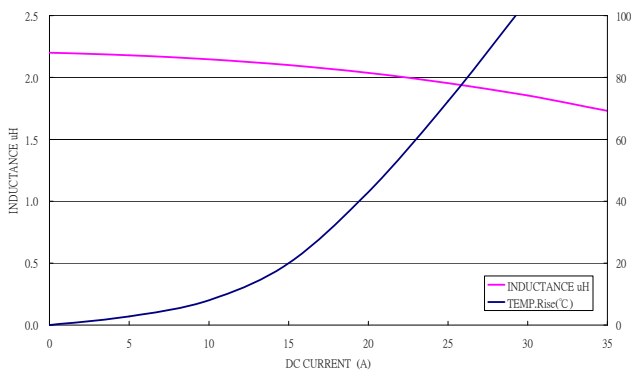
SM5018-1R5MHF



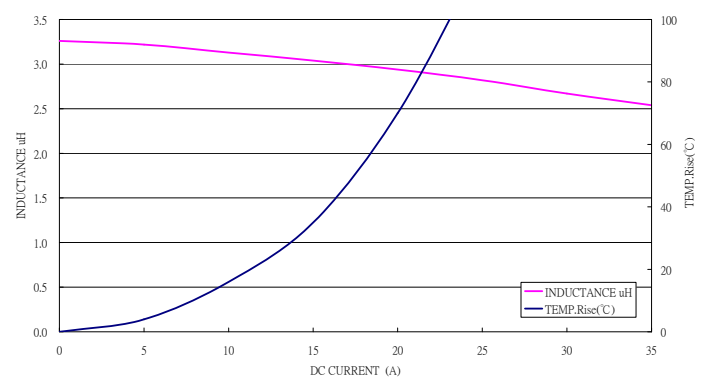
SM5018-1R8MHF



SM5018-2R2MHF



SM5018-3R3MHF



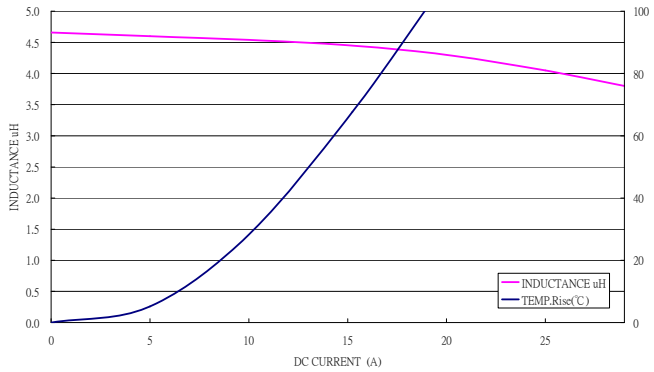


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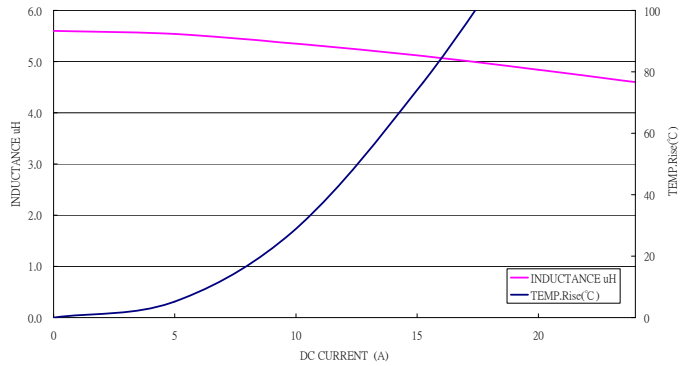


## 4. Inductance vs. Current vs. Temperature

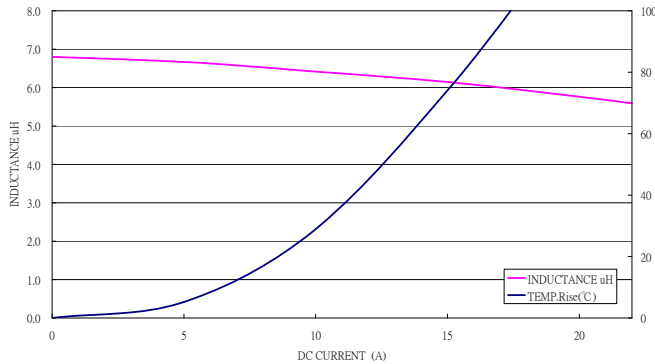
SM5018-4R7MHF



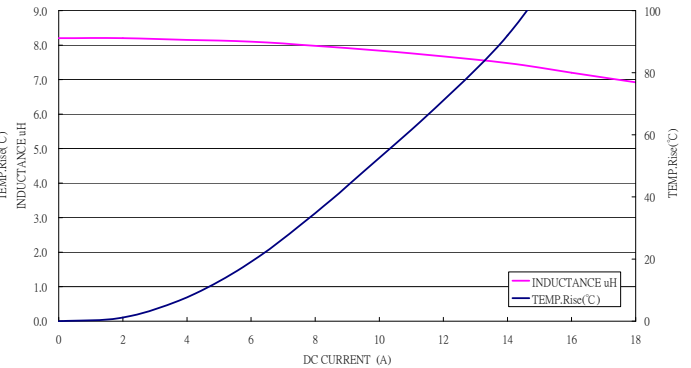
SM5018-5R6MHF



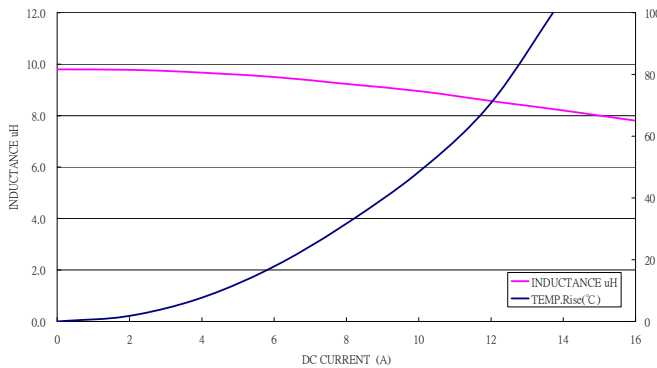
SM5018-6R8MHF



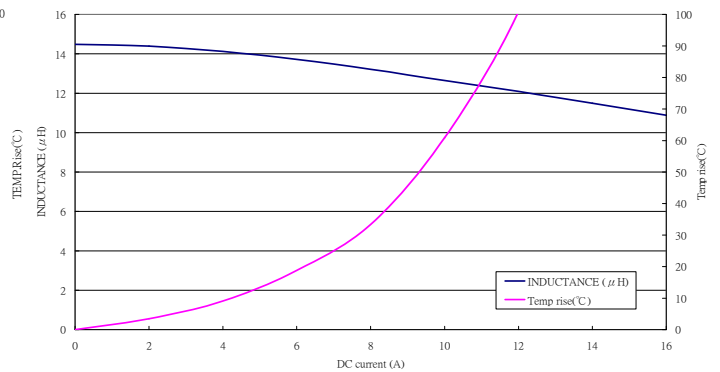
SM5018-8R2MHF



SM5018-100MHF



SM5018-150MHF



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