

1. Features of SMF1608B series:

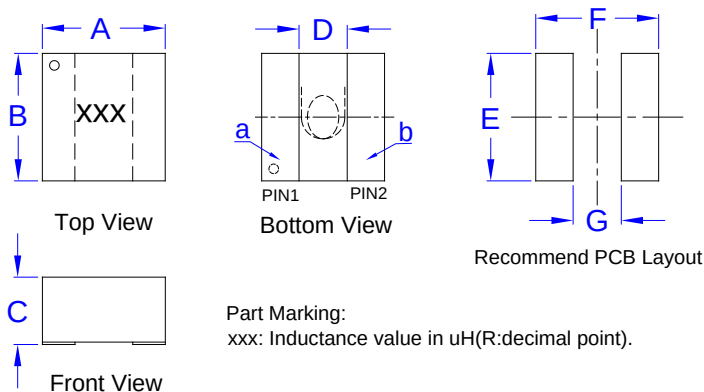
- 4.30 x 4.30 mm foot Print, 2.00mm Max. height SMD Power Inductor for high frequency application, Operating frequency up to 5MHz.
- Inductance range from 0.10uH to 4.70uH. Custom values are welcomed.
- High saturation current characteristics by distributed gapped metal dust core.
- Ideal for portable device, Pad, E-reader and high density DC to DC Converter.
- Operating Temperature Range: -55°C to 125°C (ambient + self-temperature rise) .
- T & R Qty: 3000 pcs , 13" Reel and Plastic tape: 12mm wide, 8mm pocket spacing.
- RoHS and HF compliant.



2. Electrical Characteristics of SMF1608B series:

ITG Part Number	Inductance (uH) ± 20%	DCR(a~b) (mΩ) Typ.	DCR(a~b) (mΩ) Max.	Saturation Current Isat ² (A) Typ.	Heat Rating Current Irms ³ (A) Typ.
SMF1608B-R10MHF	0.10	1.30	1.60	35.00	34.00
SMF1608B-R15MHF	0.15	1.80	2.20	28.00	28.50
SMF1608B-R22MHF	0.22	2.20	2.70	20.00	26.00
SMF1608B-R33MHF	0.33	2.75	3.30	18.00	23.00
SMF1608B-R47MHF	0.47	4.00	4.80	14.50	19.70
SMF1608B-R56MHF	0.56	4.70	5.60	12.70	18.40
SMF1608B-R68MHF	0.68	5.40	6.40	12.00	16.60
SMF1608B-1R0MHF	1.00	7.50	9.00	9.50	14.00
SMF1608B-1R5MHF	1.50	11.50	14.00	8.00	11.20
SMF1608B-2R2MHF	2.20	17.50	21.00	6.40	9.00
SMF1608B-4R7MHF	4.70	33.00	40.00	5.00	6.00

3. Mechanical Dimensions of SMF1608B series (unit: mm):



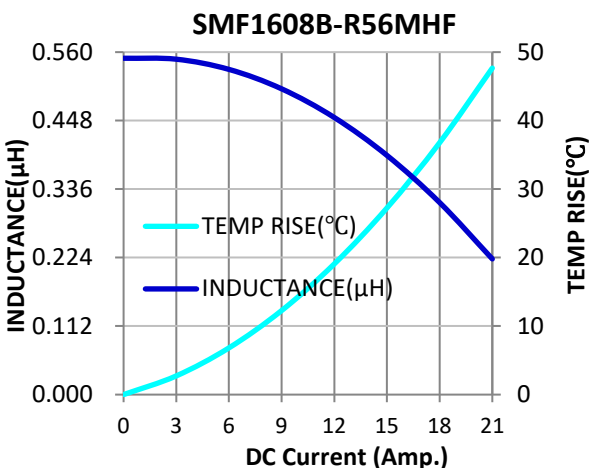
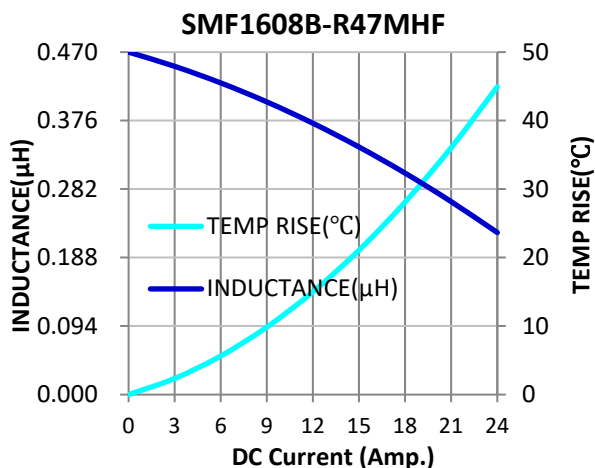
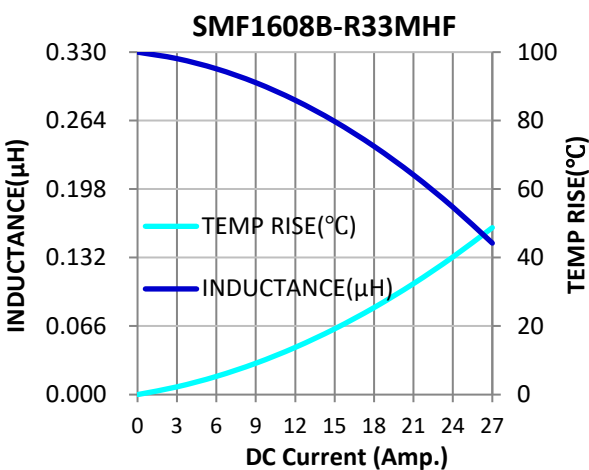
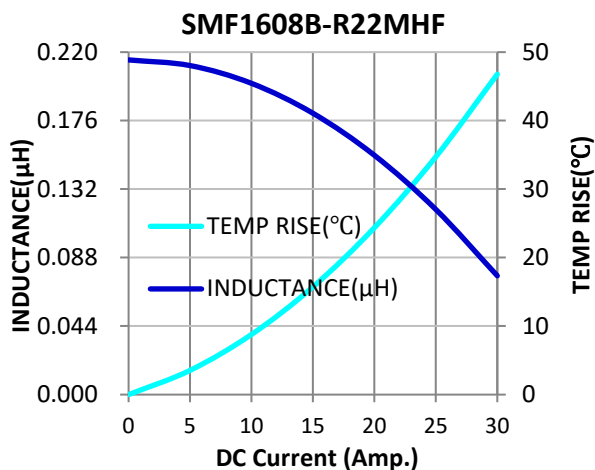
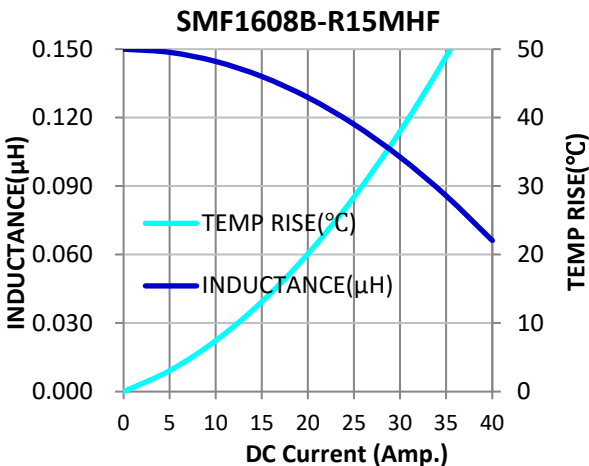
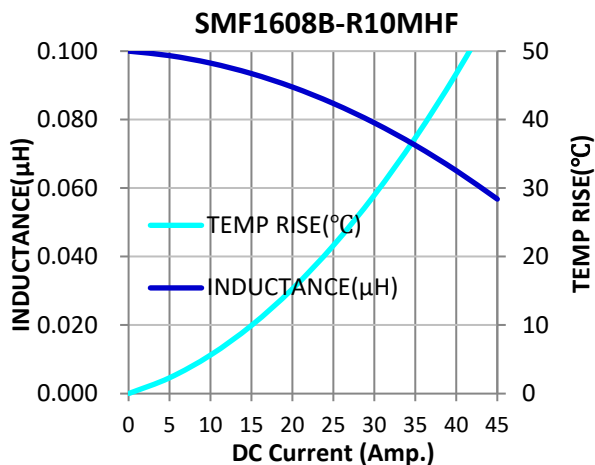
Pad Dimension	SMF1608B
E	4.50 Typ.
F	4.50 Typ.
G	1.20 Typ.

Type	A	B	C	D
SMF1608B	4.10 ± 0.20	4.10 ± 0.20	2.00 Max.	1.40 Typ.

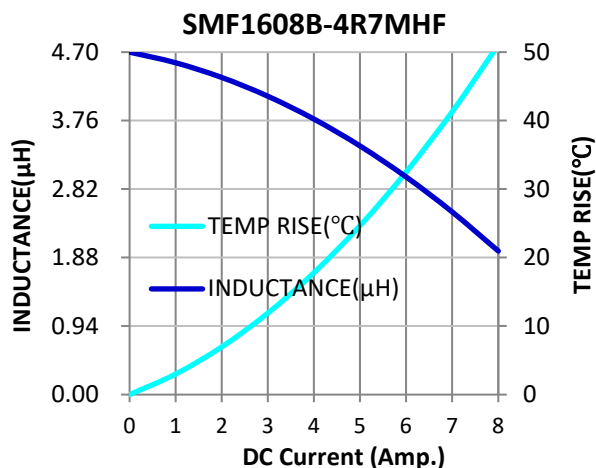
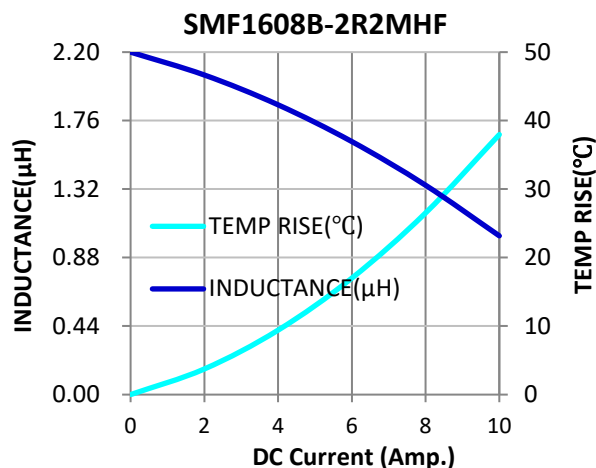
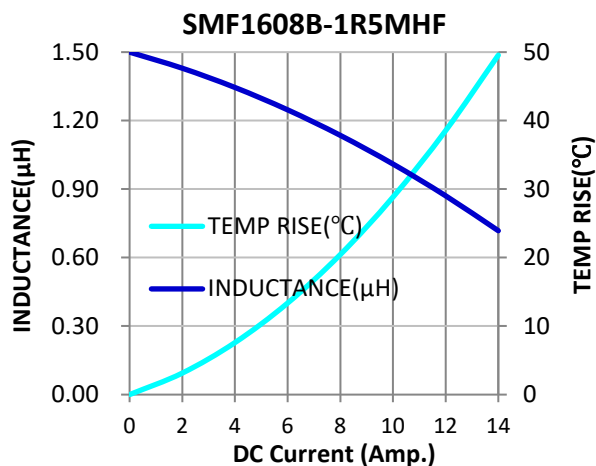
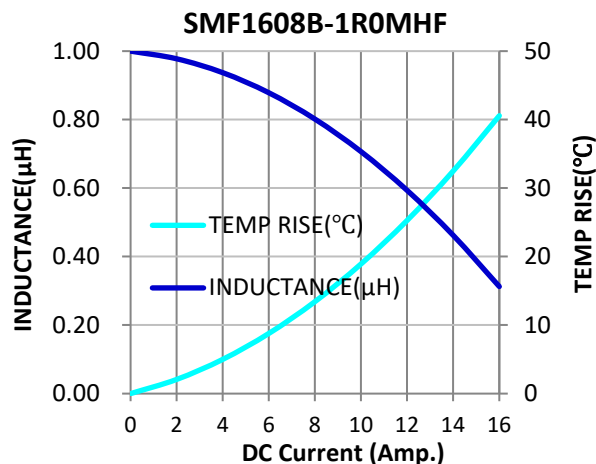
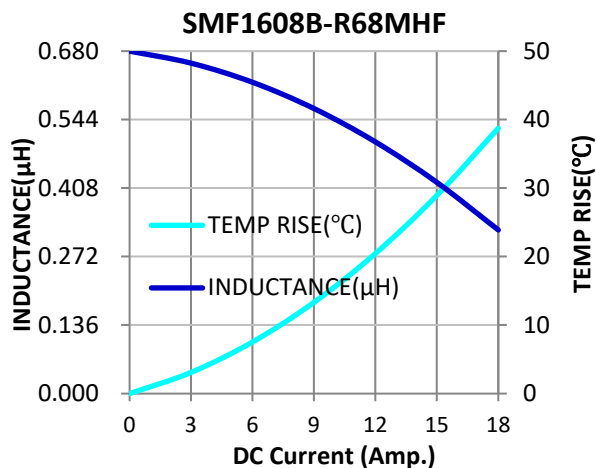
Notes:

1. Test conditions: 1MHz, 1.0V, 25°C ambient temperature .
2. Isat: DC current that causes inductance to drop 30% (Typ.) from OCL (Ta=25°C).
3. Irms: 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 as verified in the end application.

4. Inductance vs. Current vs. Temperature Rise Characteristics of SMF1608B Series:

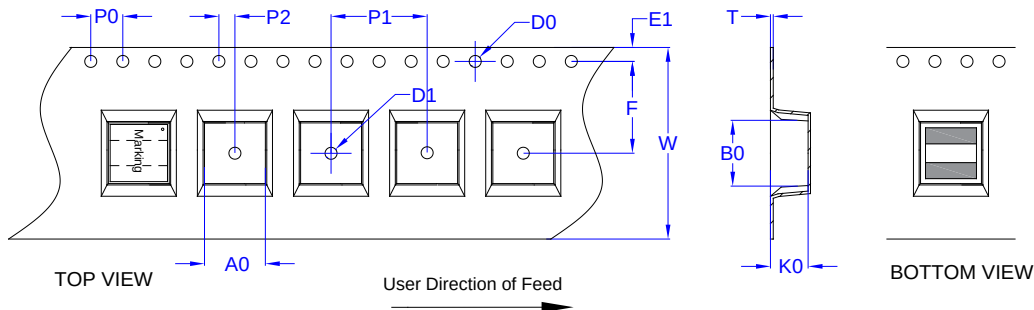


4. Inductance vs. Current vs. Temperature Rise Characteristics of SMF1608B Series:



5. PACKAGE SPECIFICATION.(UNIT:mm):

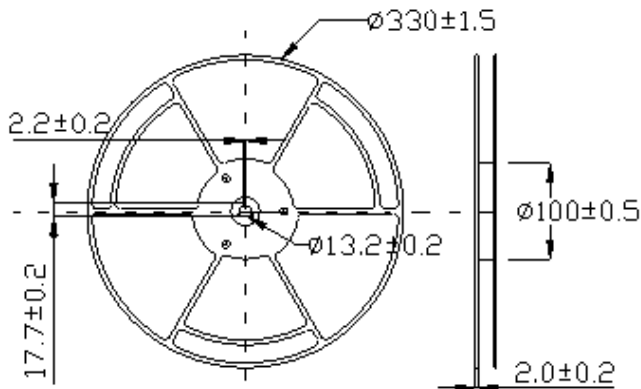
(1).ENCAPSOLATION MODE:



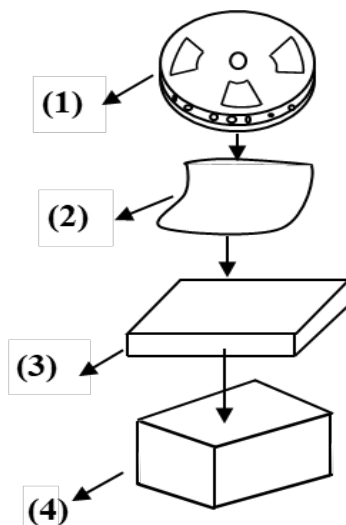
(2).DIMENSION(mm):

W	A0	B0	K0	P1	P0	P2	D0	D1	F	E1	T
12.0±0.30	4.5±0.10	4.5±0.10	2.50±0.15	8.0±0.10	4.0±0.10	2.0±0.10	1.5+0.10/-0	1.5±0.10	5.5±0.10	1.75±0.10	0.35±0.10

(3).REEL SIZE:



(4).PACKAGE MODE:



(5).PACKAGING LIST:

No.	Packing Part	Dimension (mm)	Material	Quantity
1	Reel	330	Plastic	3000PCS / Reel
2	Bag	450 X 360 X 0.075	Plastic	1Reel / Bag
3	Pizza Box	340 X 335 X 45	Paper	2Bag / Pizza Box
4	Outer Box	356 X 350 X 226	Paper	4Pizza Box / Outer Box

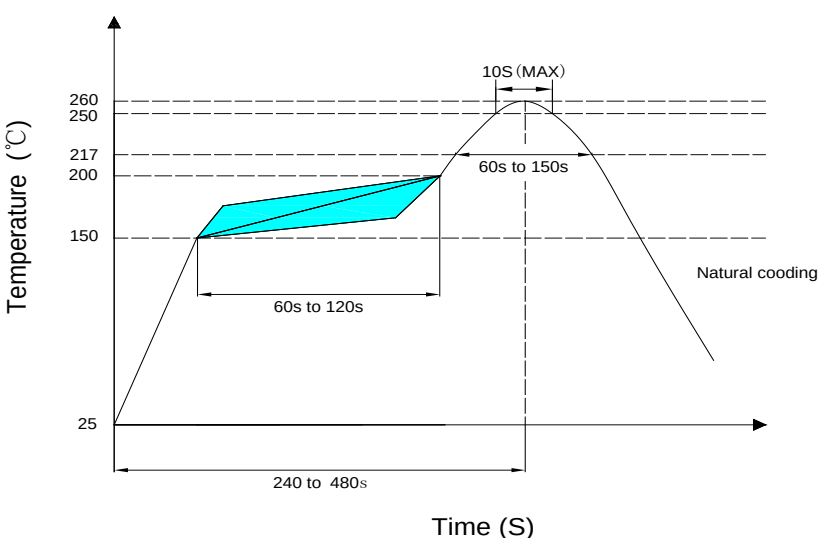
(6).WEIGHT: N.W: 0.22 g/pc (APPROX), TOTAL 5.28 Kg(APPROX), G.W:TOTAL 10.28Kg (APPROX).

(7).Storage conditions: 20°C~35°C ,75%RH (Max.).

6.RELIABILITY TEST:

6.1 Mechanical Reliability		
Item	Specification and Requirement	Test Method and Remarks
Solderability	The surface of terminal immersed shall be minimum of 95% covered with a new coating of solder	According to J-STD-002 Method D category 3 1. Preheating: 160 ± 10 °C 2.Solder: 99.3%Sn/0.7%Cu , Flux: Rosin 3. Retention time: 255 ± 5 °C for 5 ± 0.5 seconds
Resistance to Soldering Heat	Inductance change: Within $\pm 10\%$ Without mechanical damage such as break	According to MIL-STD-202 Method 210 condition J 1.Solder: 99.3%Sn/0.7%Cu 2.Reflow Peak 235 ± 5 °C(30 ± 5 s)/Time above 183 °C($90 \sim 120$ s)
Vibration	Inductance change: Within $\pm 10\%$ Without mechanical damage such as break	According to MIL-STD-202 Method 204 5g's for 20 minutes, 12 cycles each of 3 orientations. Note: Use 8"X5" PCB, .031" thick, 7 secure points on one long side and 2 secure points at corners of opposite sides. Parts mounted within 2" from any secure point. Test from 10-2000 Hz.
Shock	Inductance change: Within $\pm 10\%$ Without mechanical damage such as break	According to MIL-STD-202 Method 213 1. Peak value: 100 G 2. Duration of pulse: 11ms 3. 3 times in each positive and negative direction of 3 mutual perpendicular directions.
6.2 Endurance Reliability		
Thermal Shock	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	According to IEC68-2-14 Method N(Nb) 1. Repeat 100 cycles as follow: (-55 ± 2 °C; 30 ± 3 min) → (Room temp., 5 min) → ($+125 \pm 2$ °C, 30 ± 3 min) → (Room temp., 1 min) 2. Recovery: $48 + 4 / -0$ hours of recovery under the standard condition after the test.
High Temperature & Humidity	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	According to MIL-STD-202 Method 103 240 hours 85 °C/ 85% RH. Unpowered. Measurement at 24 ± 4 hours after test conclusion.
Low Temperature Store	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	According to IEC68-2-1 Method A(Ad) Store temperature: -55 ± 2 °C, $1000 + 4 / -0$ hours
High Temperature Store	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	According to MIL-STD-202 Method 108 Store temperature: $+125 \pm 2$ °C, $1000 + 4 / -0$ hours

Soldering Reflow Chart

Stage	Precaution	Recommended temperature profile
Reflow soldering	Temperature profile can be referenced after confirming of adhesion , temperature of resistance to soldering heat , component size , soldering etc. sufficient . Note: Please refer to the latest IPC/JEDEC J-STD-020: "Moisture/Reflow Sensitivity Classification for Nonhermetic Solid State Surface Mount Devices"	 The graph illustrates the recommended temperature profile for reflow soldering. The y-axis represents Temperature in degrees Celsius (°C), ranging from 25 to 260. The x-axis represents Time in seconds (S), ranging from 0 to 480. The profile starts at 25°C, ramps up to 150°C (60s to 120s), then to 200°C (60s to 150s), peaks at 260°C (10s MAX), and finally cools down (Natural cooling). A shaded blue area indicates the recommended temperature range between 150°C and 200°C.