



SM5015A Series



1. Features of SM5015A series:

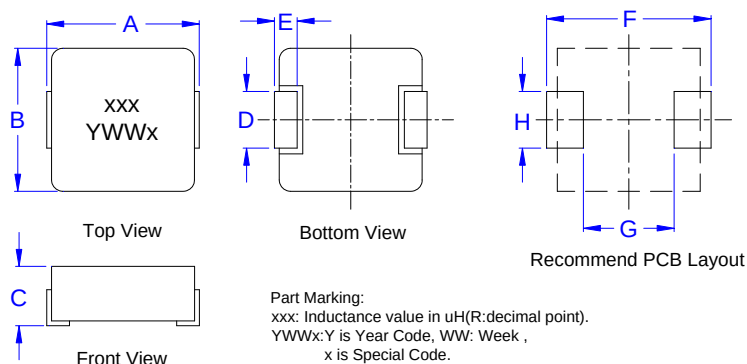
- 13.80 x 12.90mm Foot Print , 4.00mm Max. height SMD Power Inductor for high frequency application. Operating frequency up to 5MHz.
- Inductance range from 0.68uH to 22.00 uH. Custom values are welcomed.
- High saturation current characteristics by distributed gapped metal dust core.
- Ideal for portable device, Pad, E-reader and high density DC to DC Converter
- Operating Temperature Range: -55°C to 125°C .
- Tape & Reel Quantity: 500 piece per 13 inches reel. RoHS and HF compliant.



2. Electrical Characteristics of SM5015A series:

ITG Part Number	Inductance ¹ (uH) ± 20%	DCR (mΩ)Typ. @25°C	DCR (mΩ)Max. @25°C	Saturation Current ² Isat (A) Typ @25°C	Heat Rating Current ³ Irms (A) Typ. @25°C	Dim. D (mm) ± 0.50
SM5015A-R68MHF	0.68	1.45	1.70	47.00	28.00	3.85
SM5015A-R82MHF	0.82	3.73	4.30	40.00	28.00	5.00
SM5015A-1R5MHF	1.50	4.96	5.70	35.00	20.00	5.00
SM5015A-2R2MHF	2.20	6.22	7.15	26.00	18.00	5.00
SM5015A-3R3MHF	3.30	8.55	10.00	22.00	15.00	5.00
SM5015A-4R7MHF	4.70	11.32	13.00	18.00	13.00	5.00
SM5015A-6R8MHF	6.80	16.73	18.50	14.00	9.00	5.00
SM5015A-100MHF	10.00	19.15	21.00	10.00	8.00	5.00
SM5015A-220MHF	22.00	41.69	46.00	6.50	4.50	5.00

3. Mechanical Dimensions of SM5015A series (unit: mm):



Series Name	F	G	H
SM5015A-R68MHF	14.50	8.00	5.00
SM5015A-R82~220MHF	14.50	8.00	5.50

Type	A	B	C	D	E
SM5015A	13.45 ± 0.35	12.60 ± 0.30	3.80 ± 0.20	See table above	2.00 ± 0.50

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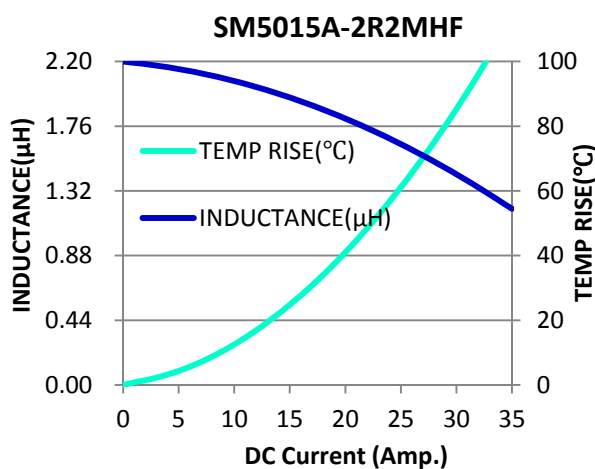
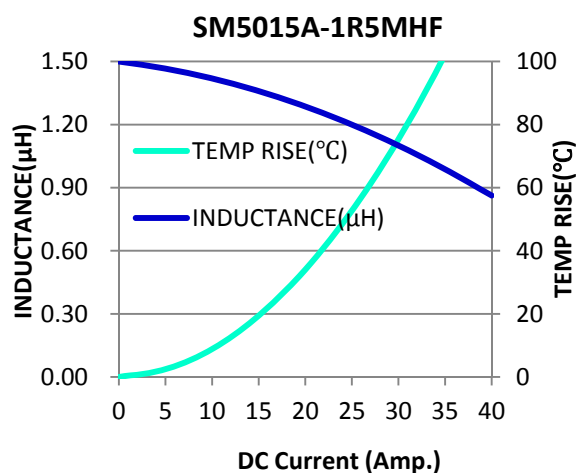
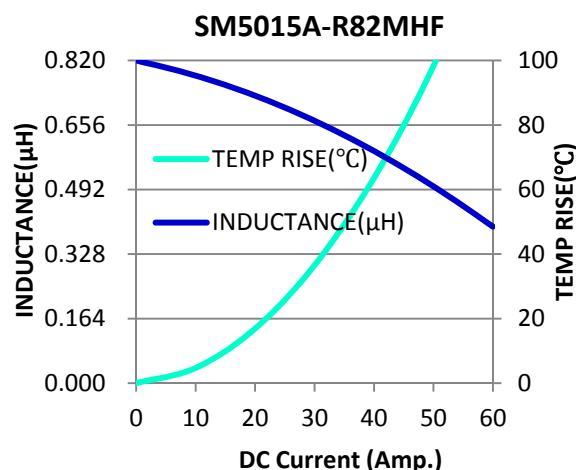
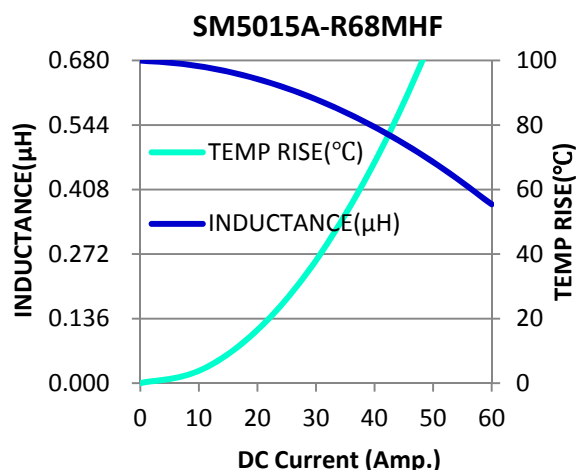
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Notes:

1. Test conditions: 100KHz, 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 SM5015A Series :

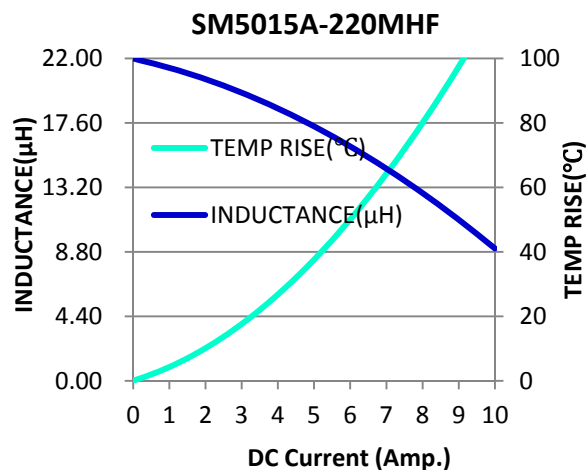
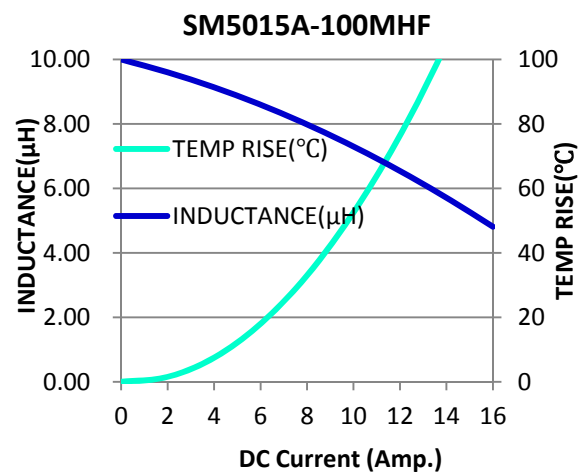
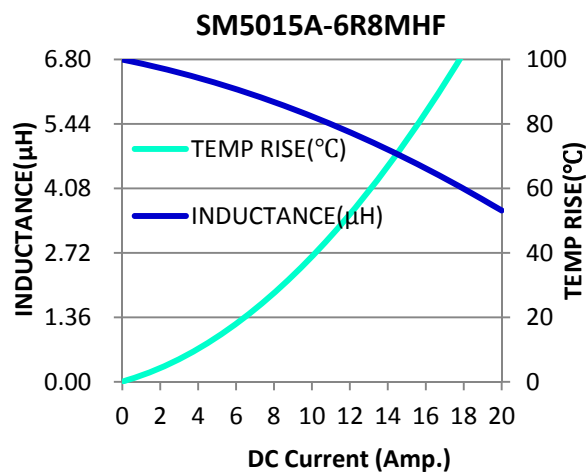
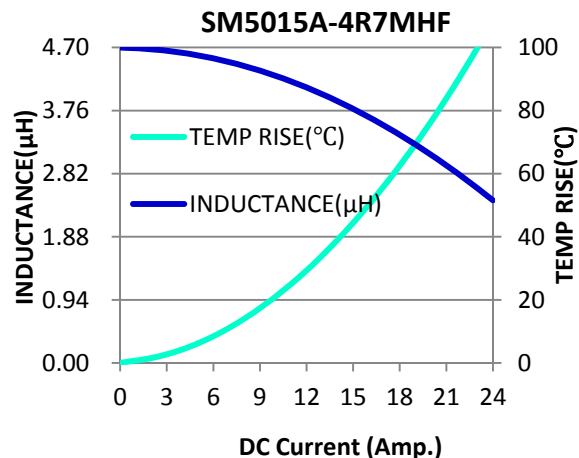
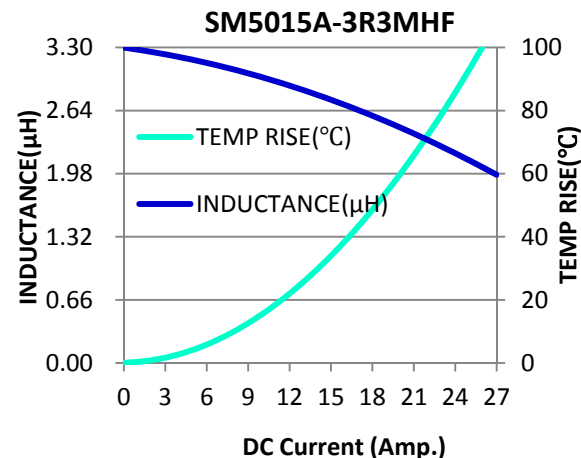




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4. Inductance vs. Current vs. Temperature Rise Characteristics of SM5015A Series :



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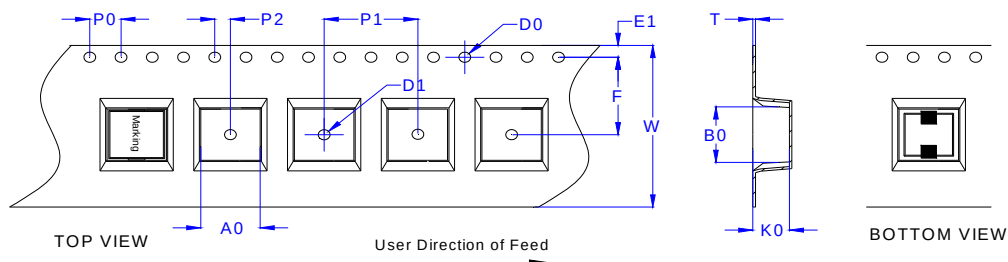


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5. PACKAGE SPECIFICATION.(UNIT:mm):

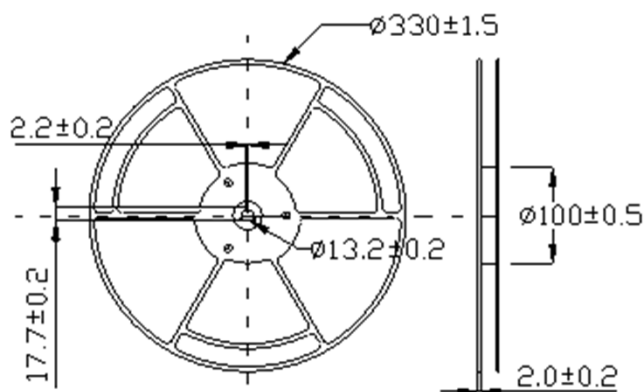
(1).ENCAPSULATION MODE:



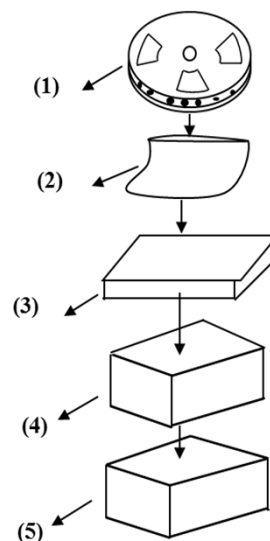
(2).DIMENSION(mm):

W	A0	B0	K0	P1	P0	P2	D0	D1	F	E1	T
24.0±0.30	13.4±0.10	14.4±0.10	4.30±0.10	16.0±0.10	4.0±0.10	2.0±0.10	1.5±0.10	1.5+0.10/-0	11.5±0.10	1.75±0.10	0.50±0.05

(3).REEL SIZE:



(4).PACKAGE MODE:



(5).PACKAGING LIST:

No.	Packing Part	Dimension (mm)	Material	Quantity
1	Reel	330	Plastic	500Pcs / Reel
2	Bag	450 X 360 X 0.075	Plastic	1Reel / Bag
3	Small Box	340 X 335 X 45	Paper	1Bag / Small Box
4	Middle Box	356 X 350 X 226	Paper	4Small Boxes / Middle Box
5	Outer Box	378 X 362 X 252	Paper	1Middle Box / Outer Box

(6).WEIGHT: N.W: 3.75 g/pcs (APPROX), TOTAL 7.50 Kg(APPROX),G.W:TOTAL 13.10Kg (APPROX).

(7).Storage conditions: -40°C~85°C ,75%RH (Max.).

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6.RELIABILITY TEST:

6.1 Mechanical Reliability		
Item	Specification and Requirement	Test Method
Solderability	The surface of terminal immersed shall be minimum of 95% covered with a new coating of solder	Solder heat proof: 1. Preheating: 160 ± 10 °C 2. Retention time: 245 ± 5 °C for 2 ± 0.5 seconds
Vibration	Inductance change: Within $\pm 10\%$ Without mechanical damage such as break	1. Vibration frequency: (10 Hz to 55 Hz to 10Hz) in 60 seconds as a period 2. Vibration time: Period cycled for 2 hours in each of 3 mutual perpendicular directions. 3. Amplitude: 1.5 mm max.
Shock	Inductance change: Within $\pm 10\%$ Without mechanical damage such as break	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	1. Repeat 100 cycles as follow: (-55 ± 2 °C; 30 ± 3 min) → (Room temp., 5 min) → ($+155 \pm 2$ °C, 30 ± 3 min) → (Room temp., 5 min) 2. Recovery: 48 ± 4 / -0 hours of recovery under the standard condition after the test.
High Temperature Resistance	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Environment condition: 85 ± 2 °C Applied Current: Rated current 2. Duration: 1000 ± 4 / -0 hours
Humidity Resistance	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Environment condition: 60 ± 2 °C Humidity: 90–95% Applied Current: Rated current 2. Duration: 1000 ± 4 / -0 hours
Low Temperature Store	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	Store temperature: -55 ± 2 °C, 1000 ± 4 / -0 hours
High Temperature Store	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	Store temperature: $+125 \pm 2$ °C, 1000 ± 4 / -0 hours

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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"	Temperature °C 260 250 220 125 25 10S (MAX) 60s to 90s Natural cooling 150s to 210s 240s to 480s

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