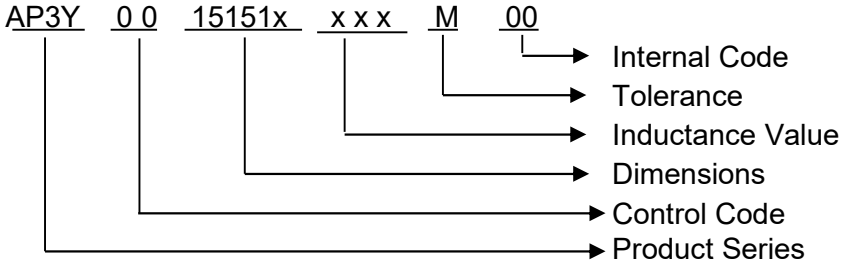
AP3Y001515 Series Specification

AEC-Q200

1 Scope:

This specification applies to large current and low RDC SMD power inductor.

2 Part Numbering:



3 Rating:

Operating temperature range:－40°C～125°C (Including self - temperature rise)

Storage condition:-20°C~40°C；75%RH Max

4 Marking:

Marking color： White

Ex Marking XXX

5 Material List:

NO	Part	Material
1	Copper Wire	EIAIW（200°C）
2	Core	Carbonyl iron powder
3	coating	Paint Gray (127# matte)
4	Solder	Sn96.5-Ag3.0-Cu0.5
5	Ink	PIC-1083B-白
6	EPOXY	M02-039-AU(6461HF)
7	Clip	C1100

6 Standard Testing Condition

	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature(15 to 35°C)	20 to 30°C
Humidity	Ordinary Humidity(25 to 85% RH)	50 to 80 %RH

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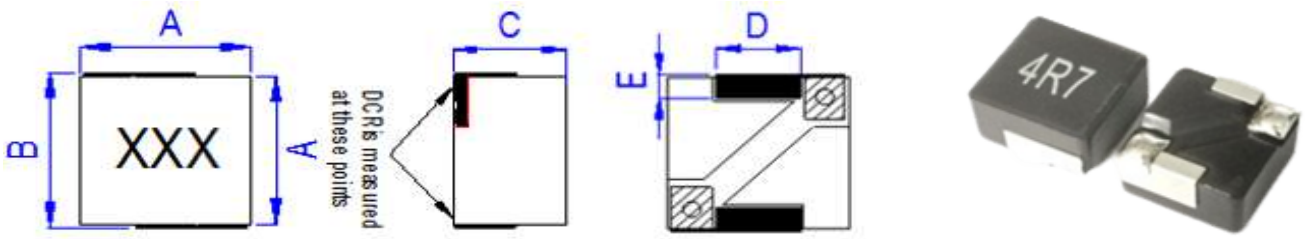
7 Configuration and Dimensions:

Top View | Side View | Bottom View



Part No.	A	B	C	D	E
AP3Y001515101R0M00	15.0 max	15.7 max	10.5Max	5.1±0.5	2.3±0.5
AP3Y001515101R5M00	15.0 max	15.7 max	10.5Max	5.1±0.5	2.3±0.5
AP3Y001515102R2M00	15.0 max	15.7 max	10.5Max	5.1±0.5	2.3±0.5
AP3Y001515103R3M00	15.0 max	15.7 max	10.5Max	5.1±0.5	2.3±0.5
AP3Y001515104R7M00	15.0 max	15.7 max	10.5Max	5.1±0.5	2.3±0.5
AP3Y001515106R8M00	15.0 max	15.7 max	10.5Max	5.1±0.5	2.3±0.5
AP3Y001515108R2M00	15.0 max	15.7 max	10.5Max	5.1±0.5	2.3±0.5
AP3Y00151510100M00	15.0 max	15.7 max	10.5Max	5.1±0.5	2.3±0.5
AP3Y00151510150M00	15.0 max	15.7 max	10.5Max	5.1±0.5	2.3±0.5
AP3Y00151510220M00	15.0 max	15.7 max	10.5Max	5.1±0.5	2.3±0.5
AP3Y00151511270M00	15.0 max	15.7 max	11.5Max	5.1±0.5	2.3±0.5
AP3Y00151511330M00	15.0 max	15.7 max	11.5Max	5.1±0.5	2.3±0.5
AP3Y00151513470M00	15.0 max	15.7 max	13.5Max	5.1±0.5	2.3±0.5
AP3Y00151513680M00	15.0 max	15.7 max	13.5Max	5.1±0.5	2.3±0.5

8 Electrical Characteristics:

Part No.	Inductance (uH)	Test Freq.	Tolerance (±%)	Irms (A)Typ.	Isat (A)Typ.	RDC (mΩ)Max	Marking
AP3Y001515101R0M00	1.0	100kHz,1.0V	20	44	100	1.8	1R0
AP3Y001515101R5M00	1.5	100kHz,1.0V	20	38	95	2.1	1R5
AP3Y001515102R2M00	2.2	100kHz,1.0V	20	36	70	2.7	2R2
AP3Y001515103R3M00	3.3	100kHz,1.0V	20	32	50	3.5	3R3
AP3Y001515104R7M00	4.7	100kHz,1.0V	20	28	45	5.2	4R7
AP3Y001515106R8M00	6.8	100kHz,1.0V	20	26	38	6.0	6R8
AP3Y001515108R2M00	8.2	100kHz,1.0V	20	24	34	7.2	8R2
AP3Y00151510100M00	10	100kHz,1.0V	20	21	32	8.5	100
AP3Y00151510150M00	15	100kHz,1.0V	20	18	30	11.5	150
AP3Y00151510220M00	22	100kHz,1.0V	20	14	24	16.8	220
AP3Y00151511270M00	27	100kHz,1.0V	20	11	23	26.5	270
AP3Y00151511330M00	33	100kHz,1.0V	20	10	19	28.0	33
AP3Y00151513470M00	47	100kHz,1.0V	20	9	17	38.0	470
AP3Y00151513680M00	68	100kHz,1.0V	20	7	16	61.0	680

Note:

1.Ambient + temperature rise range －40°C～125°C(Including self - temperature rise)

2.Isat for Inductance drop 30% from its value without current.

3.Irms for a 40℃ temprature rise from 25℃ ambient.

4.The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions. Circuit design125°C under worst case operating conditions. Component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

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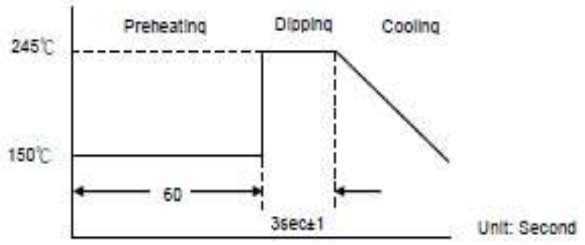
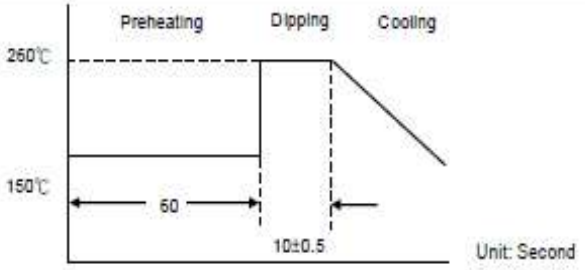
9 Reliability verification conditions

Item	Specification	Conditions
Solderability	More than 90% of the terminal electrode should be covered with solder.	
Solder Heat Resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	
Heat resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 1000 hours in 125±5℃ and 2 hour drying under normal condition.
Cold resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 1000 hours in -40±5℃ and 2 hour drying under normal condition.
Thermal shock	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 100 cycles of following condition. Step / Temperature (℃) / Times (min.) 1 / -40±5℃ / 30 2 / Room Temperature / Within 3 3 / 125±5℃ / 30 4 / Room Temperature / Within 3
Humidity Resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 1000 hours in 40±2℃ and 90 to 95% humidity , and 2 hour drying under normal condition.
Vibration Test	Inductance within ±5% of initial value and appearance shall not break.	After vibration for 1hour, in each of three orientations at sweep vibration (10~55~10Hz) with 1.52mm P-P Amplitudes.

10 Reflow Profile:

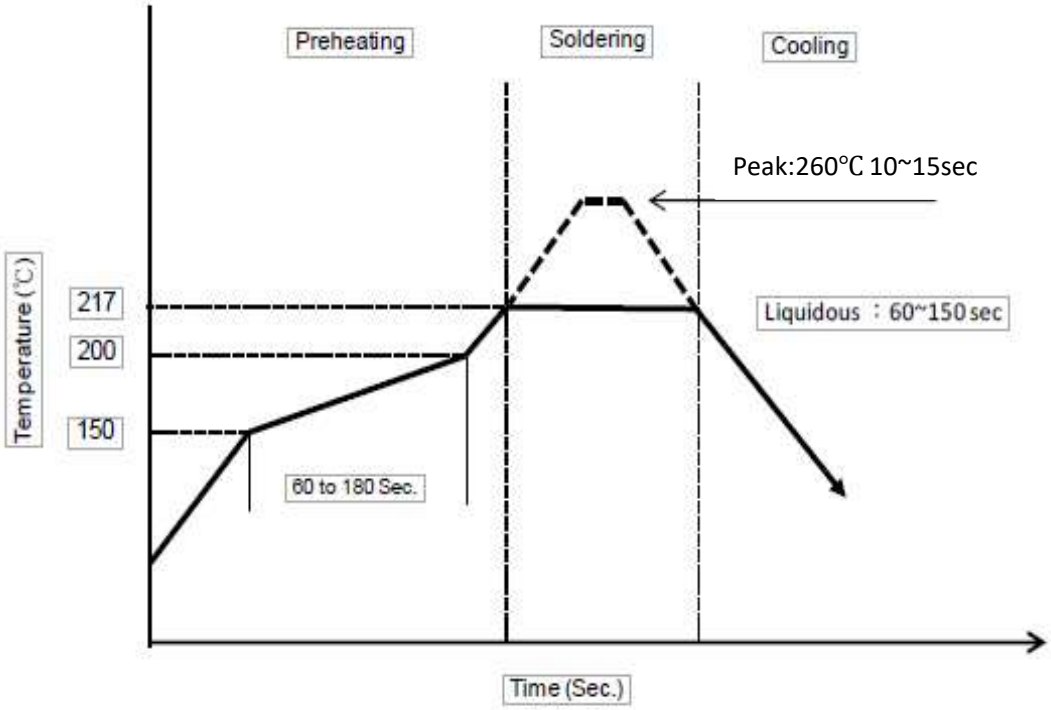
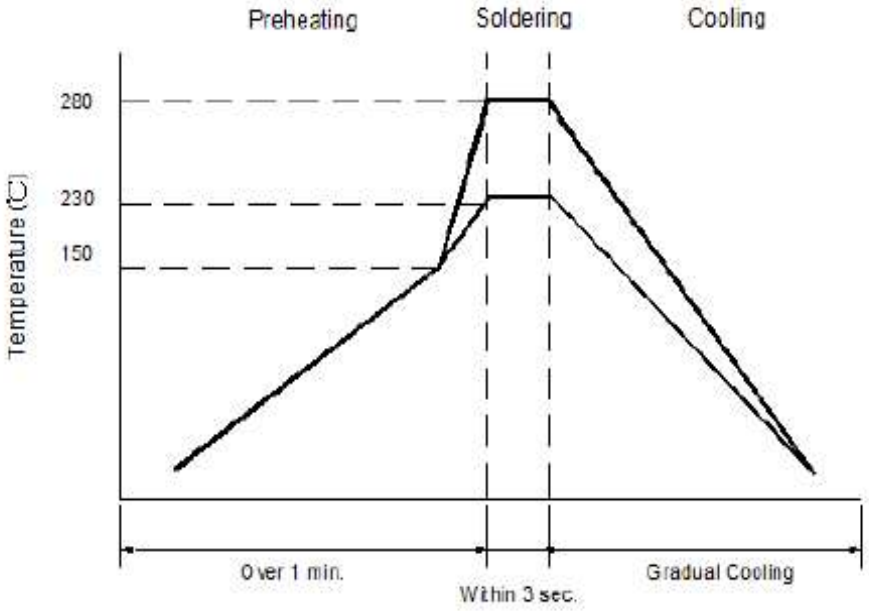


Figure 2. Hand Soldering



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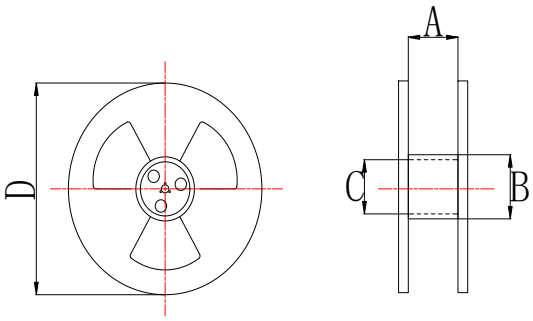
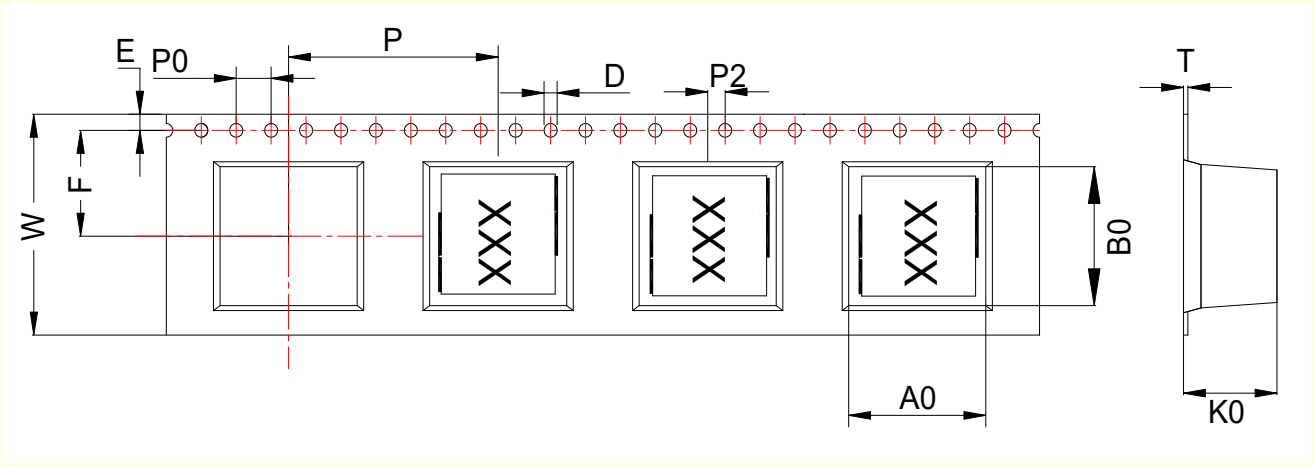
11 Packaging:

11.1 Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
13" x 24mm	24.5 ± 0.5	100 ± 2	13.5 ± 0.5	330

11.2 Tape Dimension



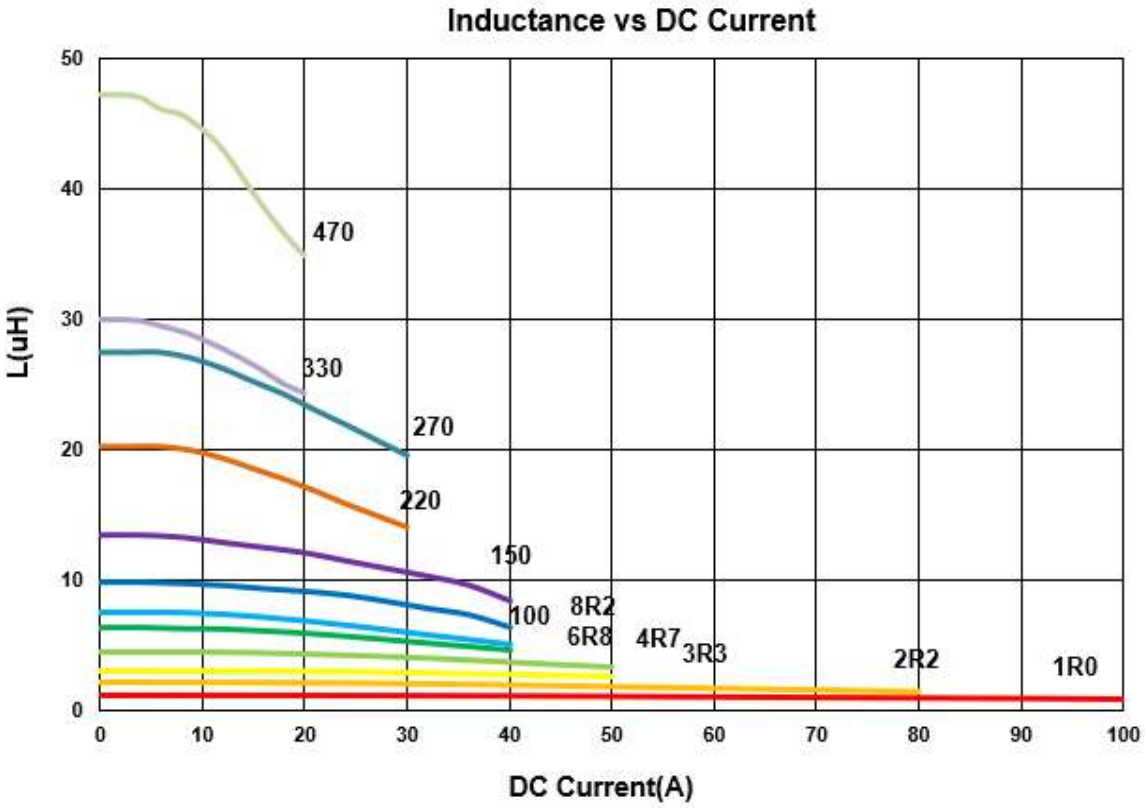
Type	W	A_0	B_0	K_0	P	F	E	D	P_O	P_2	T
151510	24.0	15.7	15.1	10.7	24.0	11.5	1.8	1.5	4.0	2.0	0.5

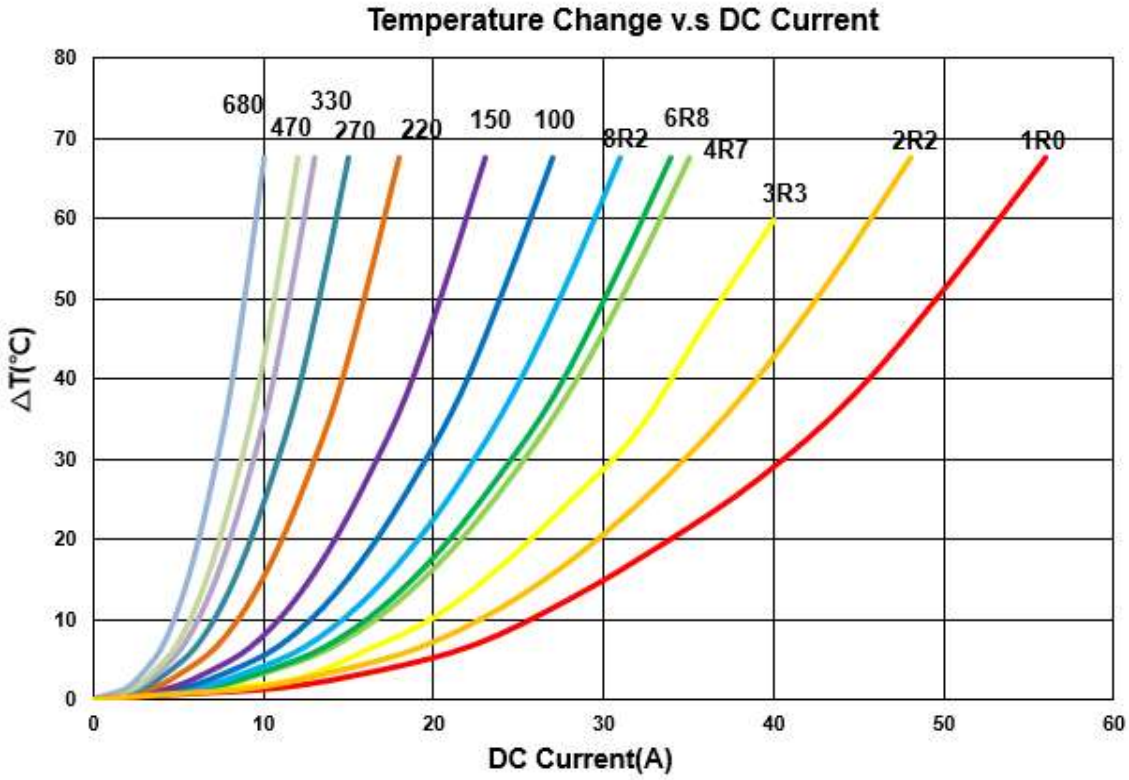
P/N	A0(mm)	B0(mm)	K0(mm)	P(mm)	T(mm)	W(mm)	PCS/Reel
AP3Y00151510 Series	15.7±0.1	15.1±0.1	10.7±0.1	24±0.1	0.5±0.05	24±0.3	150
AP3Y00151511 Series	15.7±0.1	15.1±0.1	11.7±0.1	24±0.1	0.5±0.05	24±0.3	100
AP3Y00151513 Series	15.7±0.1	15.1±0.1	13.7±0.1	24±0.1	0.5±0.05	24±0.3	100

Reference weight

Products piece weight:	12.6g
Products net weight:	15.120kg
Products gross weight:	16.120kg

12 Graph :


Inductance vs DC Current
L(uH)
DC Current(A)
470
330
270
220
150
100
8R2
6R8
4R7
3R3
2R2
1R0


Temperature Change v.s DC Current
ΔT(°C)
DC Current(A)
680
470
330
270
220
150
100
8R2
6R8
4R7
3R3
2R2
1R0