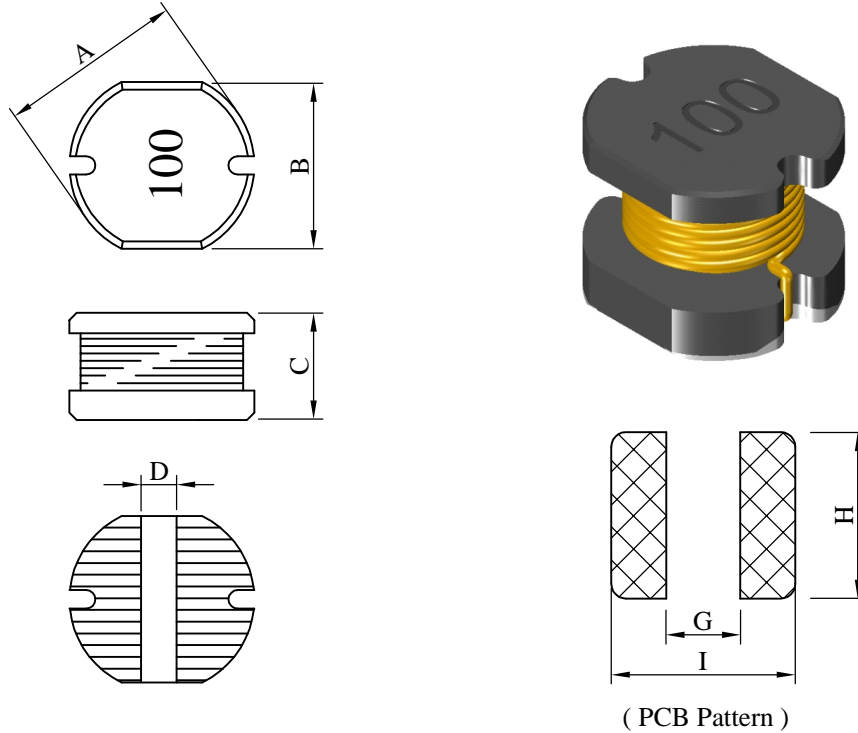


# SPECIFICATION FOR APPROVAL

REF. :

PROD. NAME	SMD Power Inductor	ABC'S DWG NO.	ESR0604□□□□L□-□□□		
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**I . Configuration and dimensions :**



( PCB Pattern )

Unit : m/m

A	B	C	D	G	H	I
5.80 ±0.3	5.20 ±0.3	4.50 ±0.3	2.10 ref.	1.70 ref.	5.50 ref.	6.00 ref.

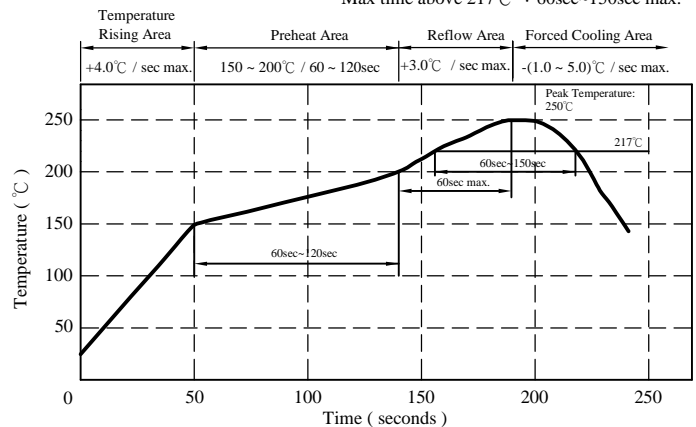
**II . Description :**

- a . Ferrite drum core construction.
- b . Enamelled copper wire : F 、 H class
- c . Product weight : 0.350g ( ref. )
- d . Moisture sensitivity Level 1
- e . Products comply with RoHS' requirements
- f . Halogen free available

**III . General specification :**

- a . Storage temp. : -40°C ----+125°C
- b . Operating temp. : -40°C ----+125°C  
( Temp. rise included. )
- c . Resistance to solder heat : 250±5°C .10 secs.

Peak Temp : 250°C max.  
Max. Peak Temp - 5°C : 30sec max.  
Max time above 217°C : 60sec~150sec max.



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## IV . Electrical characteristics :

DWG No.	Inductance ( $\mu$ H)	R.D.C. ( $m\Omega$ )		Rated Current (A)	SRF (MHz) ref.
		typ.	max.		
ESR06041R2ML□-□□□	1.2±20%	16.0	20.0	4.10	155
ESR06041R5ML□-□□□	1.5±20%	18.5	24.0	4.00	123
ESR06042R2ML□-□□□	2.2±20%	22.9	31.0	3.50	80
ESR06042R7ML□-□□□	2.7±20%	27.8	55.0	3.40	60
ESR06043R3ML□-□□□	3.3±20%	29.9	60.0	3.10	50
ESR06043R9ML□-□□□	3.9±20%	34.0	65.0	2.90	44
ESR06044R7ML□-□□□	4.7±20%	38.2	70.0	2.80	47
ESR06045R6ML□-□□□	5.6±20%	41.9	75.0	2.70	41
ESR06046R8ML□-□□□	6.8±20%	46.7	80.0	2.30	36
ESR06048R2ML□-□□□	8.2±20%	53.7	90.0	2.00	31
ESR0604100ML□-□□□	10±20%	62.1	100	1.69	32
ESR0604120ML□-□□□	12±20%	67.5	120	1.53	29
ESR0604150ML□-□□□	15±20%	94.7	140	1.44	26
ESR0604180ML□-□□□	18±20%	114	150	1.42	24
ESR0604220ML□-□□□	22±20%	128	180	1.26	19
ESR0604270ML□-□□□	27±20%	140	200	1.17	18
ESR0604330ML□-□□□	33±20%	184	230	0.99	17
ESR0604390ML□-□□□	39±20%	215	320	0.90	17
ESR0604470ML□-□□□	47±20%	258	370	0.81	14
ESR0604560KL□-□□□	56±10%	298	420	0.77	12
ESR0604680KL□-□□□	68±10%	343	460	0.65	11
ESR0604820KL□-□□□	82±10%	436	600	0.63	8.0
ESR0604101KL□-□□□	100±10%	559	700	0.61	7.5
ESR0604121KL□-□□□	120±10%	599	900	0.59	7.5
ESR0604151KL□-□□□	150±10%	900	1100	0.52	7.0
ESR0604181KL□-□□□	180±10%	986	1380	0.47	6.5
ESR0604221KL□-□□□	220±10%	1222	1570	0.38	6.5

- 1). □ : Packaging information : □ Code
- 2). "-□□□" : Reference code
- 3). Electrical specifications at 25°C
- 4). Inductance test condition :1.2uH~82uH at 1MHz/1V  
100uH~220uH at 1kHz/1V
- 5). Rated current: The DC current at which the inductance decreases to 90% of it's initial value or when  $\Delta t=40^{\circ}\text{C}$ , whichever is lower( $T_a=20^{\circ}\text{C}$ )

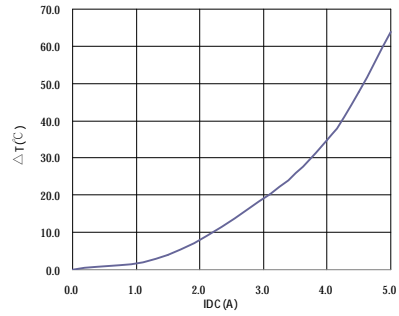
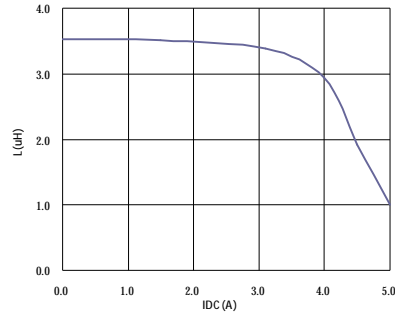
# SPECIFICATION FOR APPROVAL

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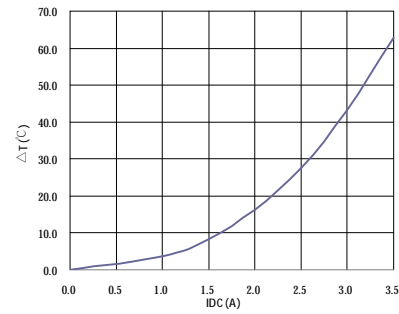
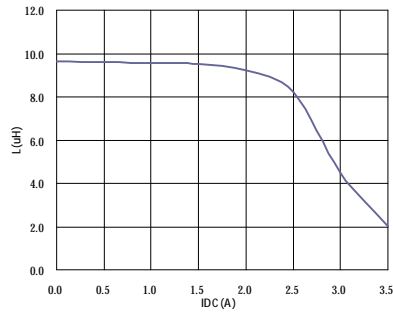
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V . Curve :

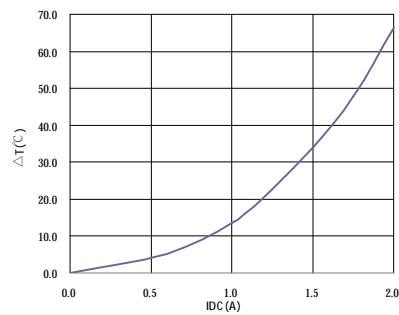
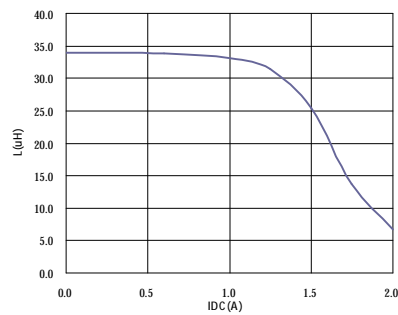
ESR06043R3ML□



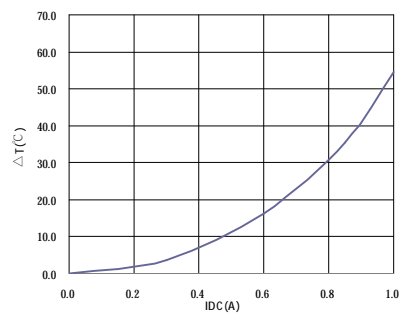
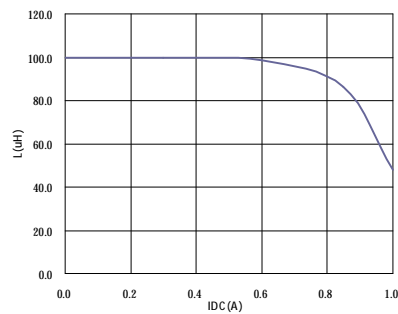
ESR0604100ML□



ESR0604330ML□



ESR0604101KL□



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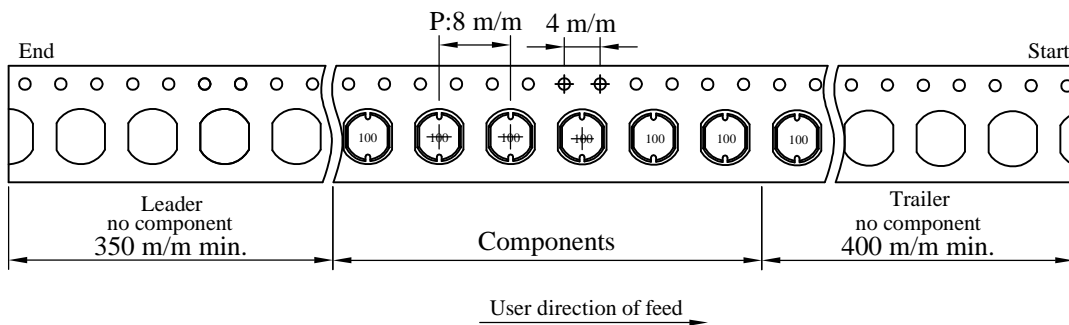
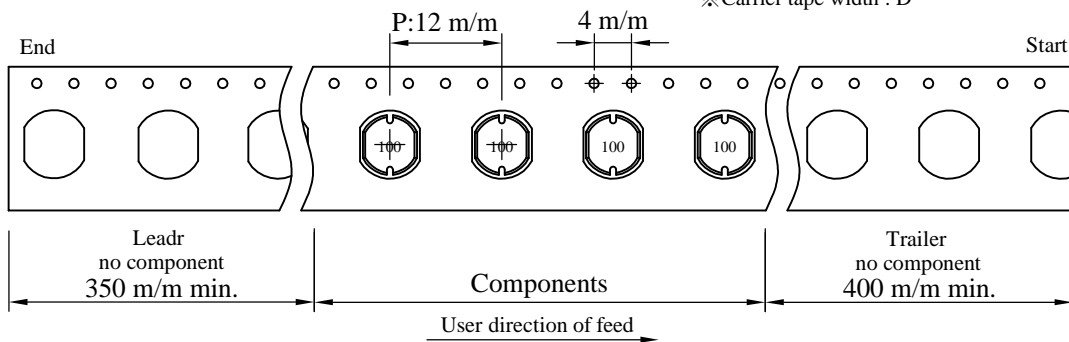
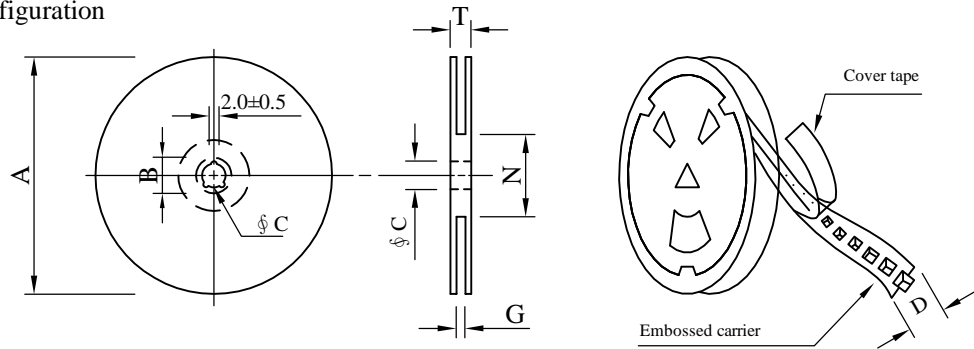
# SPECIFICATION FOR APPROVAL

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## VI . Packaging information :

### ( 1 ) Configuration



### ( 2 ) Dimensions

Unit:m/m

Style	A	B	C	D	G	N	T
13 - 16	330	21±0.8	13±0.5	16	18 <sup>+0</sup>	50 <sup>-0</sup>	22.4

### ( 3 ) Q'TY & G.W. Per package

Code	Inner : Reel			Outer : Carton		
	Q'TY (pcs)	G.W. (gw)	Style	Q'TY (pcs)	G.W. (Kg)	Size (cm)
B	1,000	870	13 - 16	6,000	6.5	38 x 37 x 22
C	1,500	1080	13 - 16	9,000	7.8	38 x 37 x 22

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# SPECIFICATION FOR APPROVAL

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## VII . Reliability test :

Item	Reference documents	Test Condition	Test Specification
1.High Temperature Exposure	MIL-STD-202 Method 108	1.Temperature: 125±2℃ 2.Time:96±2 hours.	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
2.Temperature Cycling	JESD22-A 104	1.Temperature: -40℃ ~ +125℃ 2.Number of cycle:100 cycle 3.Dwell time:30 minutes	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
3.Biased Humidity Test	MIL-STD-202 Method 103	1.Temperature : 85±2 ℃ 2.Humidity: 85% RH. 3.Time:96±2 Hours	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
4.Operational Life	JESD22-A 108	1.Temperature: 125℃ (Temp. rise included) 2.Time:96±2 hours. 3.Rated current	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
5.External Visual	JESD22-B 101 & MIL-STD-883 Method 2009	Inspect product constructions, marking and workmanship.	1.No pollution on the surface of products. 2.Clear marking. 3.No crack.
6.Physical Dimensions	JESD22-B 100	Verify physical dimensions to the applicable product detail specification.	Per product specification standard
7.Resistance to solvents	MIL-STD-202 Method 215	Immerse into solvent for 3±0.5 minutes & brush 10 times for 3 cycles.	1.No body change in apperance. 2.No marking blurred. 3.Inductance shall not change more than ±10%.
8.Vibration Test	MIL-STD-202 Method 204	1.Frequency and Amplitud : 10-2000-10 Hz, 1.5 mm. 2.Direction:X, Y, Z 3.Test duration:2 hours for each direction, 6 hours in total.	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
9.Resistance To Soldering Heat Test	MIL-STD-202 Method 210 & J-STD020D.1	1.Highest temperature : 250±5℃. 2.Time ( temp. ≥ 217℃ ) : 60~150 Second. 3.IR reflow times : 3 times.	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
10.Saturation Current	JIS C 6436 & User SPEC.	1.Applied rated current for 5 second. 2.Saturation current	Inductance shall not drop more than 10% typ.
11.Over load	JIS C 6436 & User SPEC.	1.Applied one and half rated current for a period of 5 minutes. 2.Rated current	No electrical or mechanical damage
12.Temperature Rise Current	JIS C 6436 & User SPEC.	1.Applied rated current for 10 minutes. 2.Temperature measure by digital surface thermometer. 3.Irms current	Surface temperature rise is less than 40 ℃ typ.
13.Solderability Test	J-STD-002 & JESD22-B 102	1.Baking in pre-testing : 150±5℃ / 16Hours±30 min. 2.Peak temperature : 240±5℃ 3.Time ( temp. ≥ 217℃ ) : 60~150 second. 4.IR reflow times : 1 times.	More than 95% soldering coverage min on terminations.
14.Electrical Characteriazation	MIL-STD-202 Method 304 & User SPEC.	1.Operating temperature : -40℃~125℃ 2.Room temperature : 25℃.	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
15.Drop	CNS-C6354 & GB/T 2423.8	1.Products shall be mounted on SPEC. pcb and dropped down from a heigh of 1m 2.Drop total time : 6 time (Every side ofsample drop 2 time)	1. Adhesion on PCB shall be enough. 2. Product appearance shall not break. 3. No electrical damage.
16.Terminal Strength Test	IEC 60068-2-21	1.Apply push force to samples mounted on PCB. 2.Force of 1.8 kg for 60±1 seconds.	After test, inductors shall be no mechanical damage.

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