SPECIFICATION FOR APPROVAL

REF. :

PROD. NAME	SMD Power Inductor	ABC'S DWG NO.	ESR0302□□□□L□-□□□		
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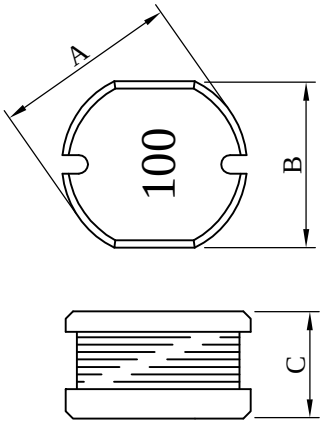
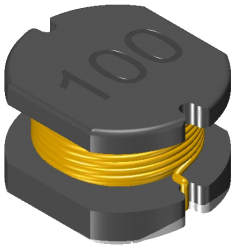
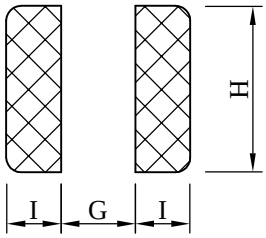
Ⅰ．Configuration and dimensions：







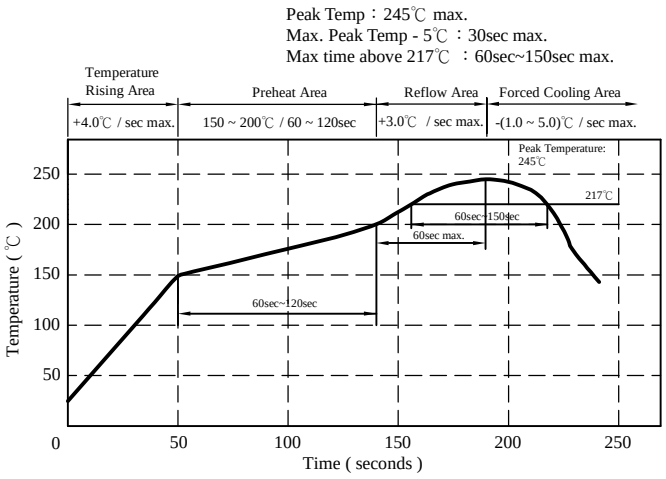
(PCB Pattern)

Unit：m/m

A	B	C	D	G	H	I
3.50 ±0.3	3.00 ±0.3	2.10 ±0.3	0.90 typ.	0.80 ref.	3.00 ref.	1.40 ref.

Ⅱ．Description：

a．Ferrite drum core construction.
b．Enamelled copper wire：H class
c．Product weight： 0.080g（ref.）
d．Moisture sensitivity Level 1
e．Products comply with RoHS' requirements
f．Halogen free available



Ⅲ．General specification：

a．Storage temp.：-40℃ ----+125℃
b．Operating temp.：-40℃----+125℃
(Temp. rise included.)
c．Resistance to solder heat：245℃.10 secs.

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Ⅳ．Electrical characteristics：

DWG No.	Inductance (μH)	RDC (mΩ)		SRF (MHz) ref.	Isat (A) typ.	Irms (A) typ.
		typ.	max.			
ESR03021R0ML□-□□□	1.0±20%	39	50	125	2.70	2.35
ESR03021R2ML□-□□□	1.2±20%	47	60	110	2.60	2.20
ESR03021R5ML□-□□□	1.5±20%	54	70	95	2.45	2.00
ESR03021R8ML□-□□□	1.8±20%	64	80	80	2.30	1.90
ESR03022R2ML□-□□□	2.2±20%	70	90	60	2.10	1.65
ESR03022R7ML□-□□□	2.7±20%	82	100	55	1.95	1.50
ESR03023R3ML□-□□□	3.3±20%	91	120	50	1.85	1.40
ESR03023R9ML□-□□□	3.9±20%	110	140	48	1.70	1.35
ESR03024R7ML□-□□□	4.7±20%	125	160	46	1.60	1.25
ESR03025R6ML□-□□□	5.6±20%	141	180	43	1.45	1.10
ESR03026R8ML□-□□□	6.8±20%	170	210	40	1.35	1.00
ESR03028R2ML□-□□□	8.2±20%	193	240	35	1.25	0.90
ESR0302100ML□-□□□	10.0±20%	237	300	27	1.15	0.80
ESR0302120ML□-□□□	12.0±20%	304	380	25	1.00	0.75
ESR0302150ML□-□□□	15.0±20%	347	430	24	0.90	0.65
ESR0302180ML□-□□□	18.0±20%	447	560	20	0.80	0.60
ESR0302220ML□-□□□	22.0±20%	561	700	18	0.75	0.55
ESR0302270ML□-□□□	27.0±20%	658	820	16	0.65	0.50
ESR0302330KL□ -□□□	33.0±10%	778	970	15	0.60	0.45
ESR0302390KL□ -□□□	39.0±10%	970	1160	13	0.55	0.40
ESR0302470KL□ -□□□	47.0±10%	1110	1330	12	0.50	0.38
ESR0302560KL□ -□□□	56.0±10%	1250	1500	11	0.45	0.35
ESR0302680KL□ -□□□	68.0±10%	1570	1800	10	0.40	0.30
ESR0302820KL□ -□□□	82.0±10%	2040	2400	9	0.35	0.25
ESR0302101KL□ -□□□	100.0±10%	2420	2800	8	0.30	0.20

1). □：Packaging information：□ Code

2). "-□□□"：Reference code

3). Electrical specifications at 25℃

4). Inductance test condition :1MHz/1V

5). Rated current: The DC current at which the inductance decreases to 90% of it's initial value or when Δt=40℃,whichever is lower(Ta=20℃)

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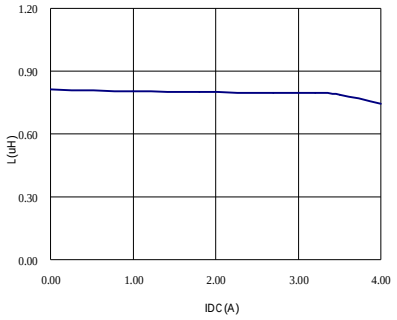
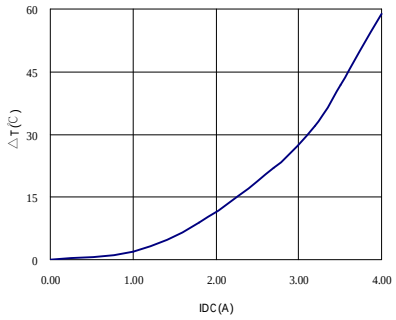
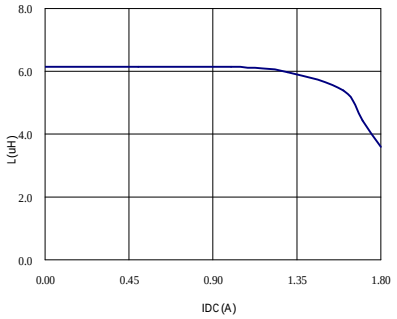
V . Curve ：

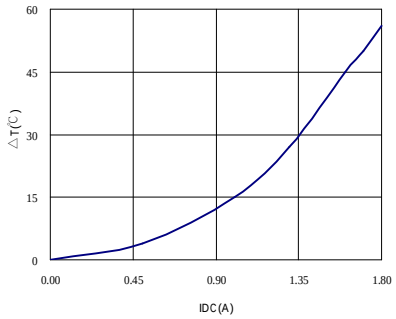
ESR03021R0ML□



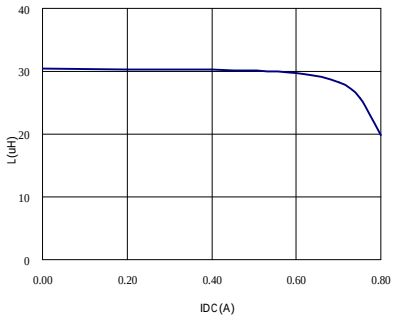


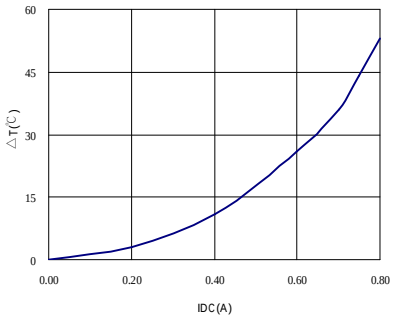
ESR03026R8ML□



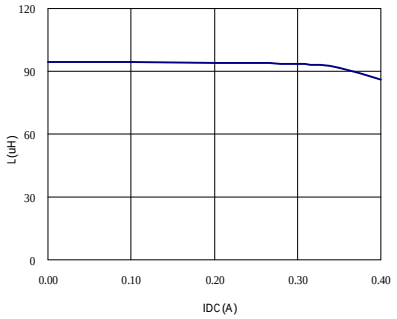


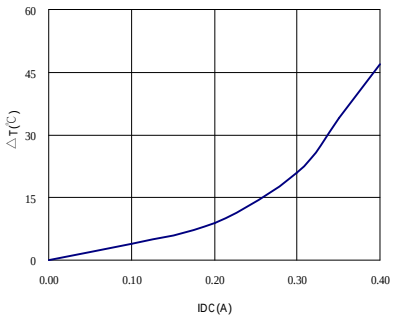
ESR0302330KL□





ESR0302101KL□





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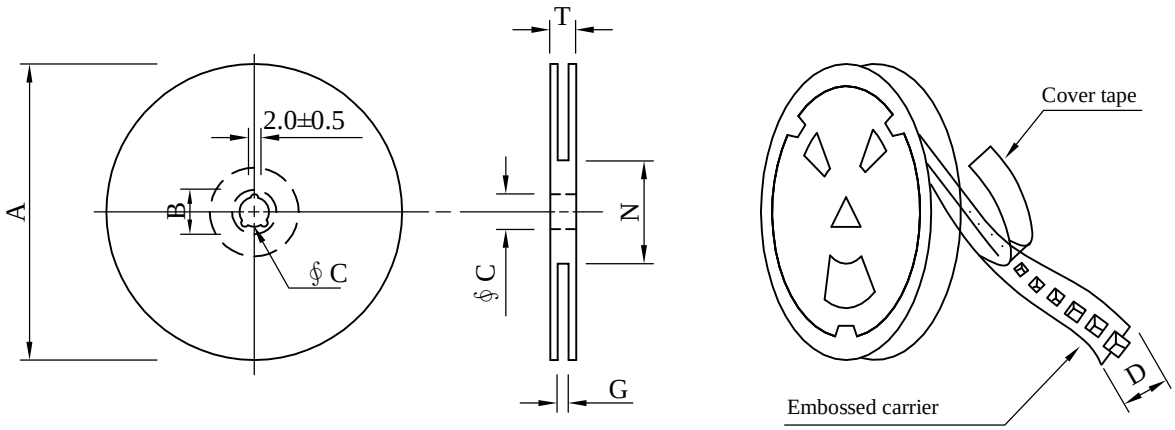
Ⅵ．Packaging information：

(1) Configuration



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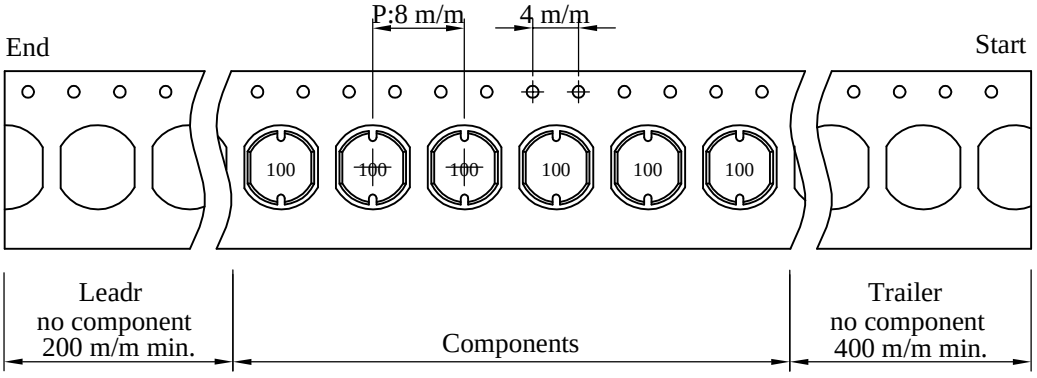

(2) Dimensions

Unit:m/m

Style	A	B	C	D	G	N	T
13 - 12	330	21±0.8	13±0.5	12	14^{+0}	50^{-0}	18.4

(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	3,000	590	13 - 12	24,000	6.1	38 x 37 x 22

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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 apperarance. 2.No marking blurred. 3.Inductance shall not change more than ±10%.
8.Vibration Test	MIL-STD-202 Method 204	1.Frequency and Amplitued : 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：245±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.