SPECIFICATION FOR APPROVAL

REF. :

PROD. NAME	Semi-shielded SMD Power Inductor	ABC'S DWG NO.	ESN5040□□□□S□-□□□		
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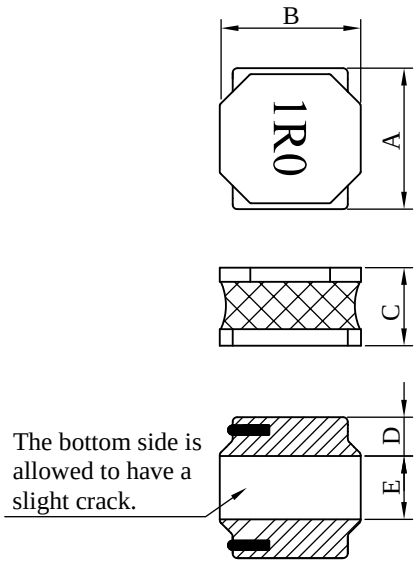
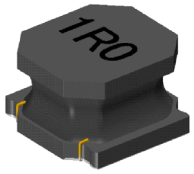
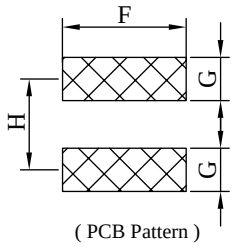
Ⅰ．Configuration and dimensions：







(PCB Pattern)

Unit：m/m

A	B	C	D	E	F	G	H
5.00 ±0.2	5.00 ±0.2	4.10 max.	1.50 ±0.3	2.00 ±0.3	4.30 ref.	1.80 ref.	3.50 ref.

Ⅱ．Description：

a．Ferrite drum core construction.

b．Enamelled copper wire：H class

c．Product weight：0.29g（ref.）

d．Moisture sensitivity Level 1

e．Products comply with RoHS' requirements

f．Halogen free

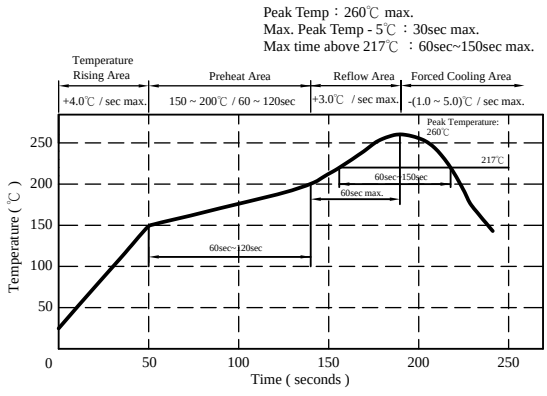
Ⅲ．General specification：

a．Storage temp.：-40℃ ----+125℃

b．Operating temp.：-40℃----+125℃

（Temp. rise included）

c．Resistance to solder heat：260℃.10 secs.



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Ⅳ． Electrical characteristics：

DWG. No.	Inductance (uH)	Test Freq. (Hz)	RDC (mΩ) max.	Isat (A) max.	Irms (A) max.
ESN50401R0YS□-□□□	1.00 ±30%	100k/0.25V	18.0	7.35	4.90
ESN50401R5MS□-□□□	1.50 ±20%	100k/0.25V	28.0	5.00	4.30
ESN50402R2MS□-□□□	2.20 ±20%	100k/0.25V	26.0	4.90	3.80
ESN50403R3MS□-□□□	3.30 ±20%	100k/0.25V	33.8	3.95	3.40
ESN50404R7MS□-□□□	4.70 ±20%	100k/0.25V	41.6	3.50	3.00
ESN50406R8MS□-□□□	6.80 ±20%	100k/0.25V	58.5	2.90	2.50
ESN5040100MS□-□□□	10.00 ±20%	100k/0.25V	78.0	2.30	2.10
ESN5040150MS□-□□□	15.00 ±20%	100k/0.25V	104.0	2.00	2.00
ESN5040220MS□-□□□	22.00 ±20%	100k/0.25V	169.0	1.60	1.50
ESN5040330MS□-□□□	33.00 ±20%	100k/0.25V	234.0	1.30	1.20
ESN5040470MS□-□□□	47.00 ±20%	100k/0.25V	403.0	1.02	1.00
ESN5040680MS□-□□□	68.00 ±20%	100k/0.25V	650.0	0.85	0.80
ESN5040101MS□-□□□	100.00 ±20%	100k/0.25V	728.0	0.66	0.70

1). Electrical specifications at 25℃

2). Isat base on △L/L0A=35% max. (Approximately transient current)

3). Irms base on temp. rise 40℃ max.

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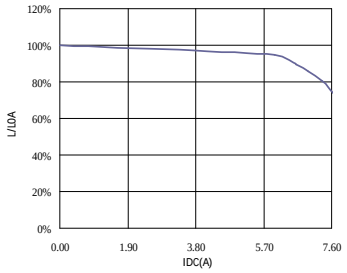
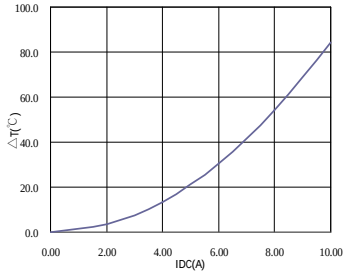
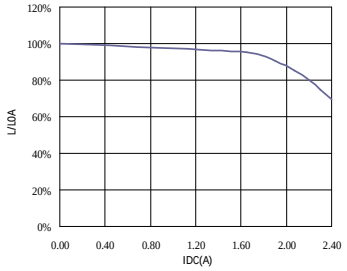
V ．Curve：

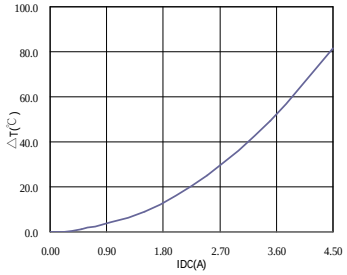
ESN50401R0N□□



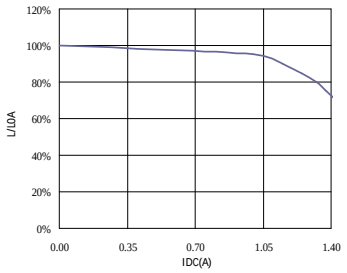


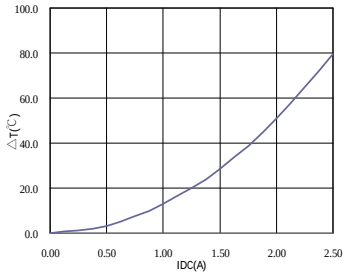
ESN5040100M□□



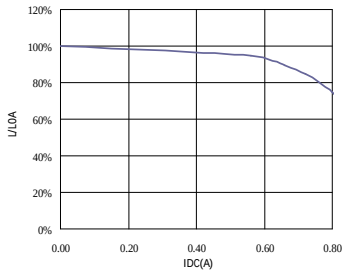


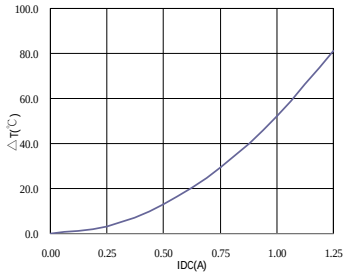
ESN5040330M□□





ESN5040101M□□





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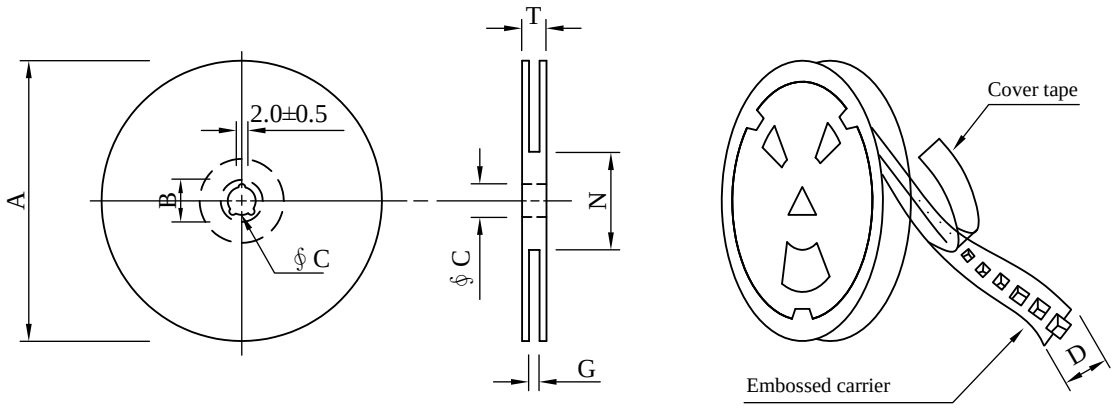
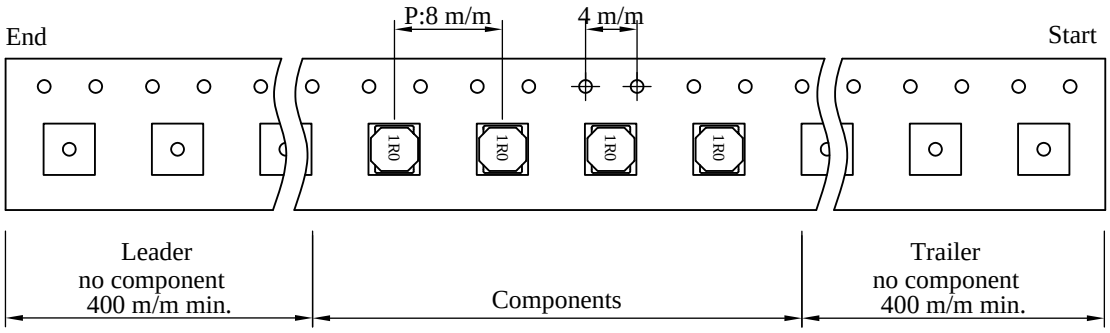
Ⅵ．Packaging information：

(1) Configuration



※Carrier tape width : D



(2) Dimensions

Unit:m/m

Style	A	B	C	D	G	N	T
13 - 12	330	21±0.8	13	12	14^{+0}	50^{-0}	16.5

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

Code	Inner : Reel			Outer : Carton		
	Q'TY (pcs)	G.W. (g)	Style	Q'TY (pcs)	G.W. (Kg)	Size (cm)
B	1,500	550	13 - 12	13,500	6.50	36 x 36 x 25

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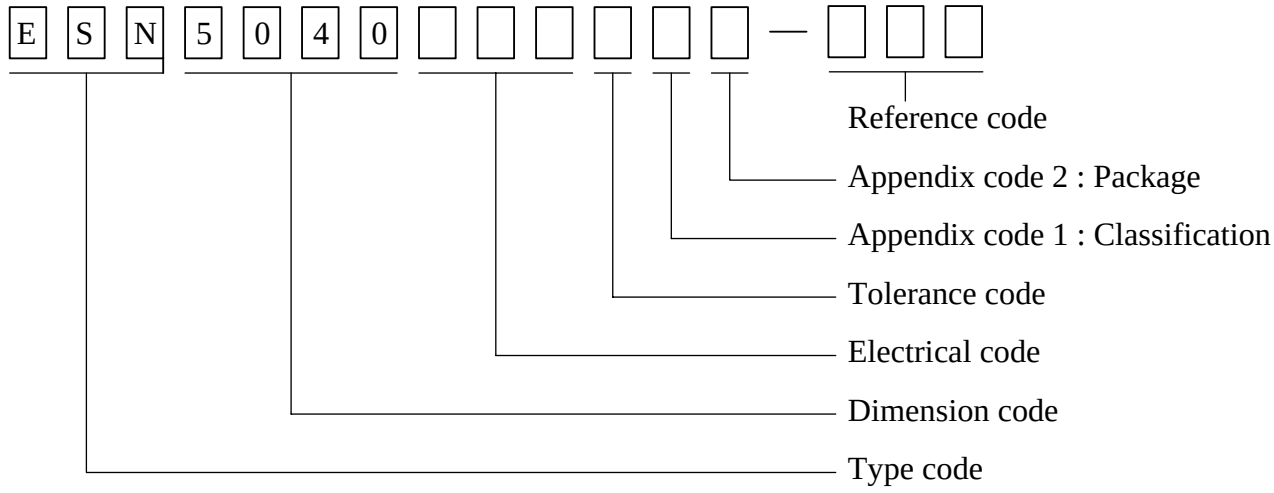
Ⅶ．Drawing number expression：



Appendix code 1：Product Classification

Appendix code 2：Package Information

Code	Inner package	Cover tape	Carrier tape	Bag	Package Q'TY	Remark
B	T /R	Adhesive	Antistatic	Antistatic	1,500 pcs	

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Ⅷ．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 ±20%.
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 ±20%.
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 ±20%.
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 ±20%.
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 ±20%.
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 ±20%.
9.Resistance To Soldering Heat Test	MIL-STD-202 Method 210 & J-STD020D.1	1.Highest temperature：260±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 ±20%.
10.Saturation Current	JIS C 6436 & User SPEC.	1.Applied rated current for 5 second. 2.Saturation current：	Inductance shall not drop more than 35% max.
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℃ max.
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 ±20%.
15.Drop	CNS-C6354 & GB/T 2423.8	1.Products shall be mounted on SPEC. PCB and dropped down from a height of 1m 2.Drop total time：6 time (Every side of sample 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.

SPECIFICATION FOR APPROVAL

REF. :

Ⅸ．Change history：

DATE/REV.	DISCRIPTION	DRAWN	CHECKED	APPROVED
20171219-A	Released	Lijuan Y	Alan	Roger