

Data Sheet

Customer: _____

Product: SMD Mini Spring Air Coil – MSA series _____

Size : 1512/2712 _____

Issued Date: 27-Jul.-2015 _____

Edition: Ver. 1 _____

Record of change

Date	Ver.	Description	Page
27-Jul.-2015	1		

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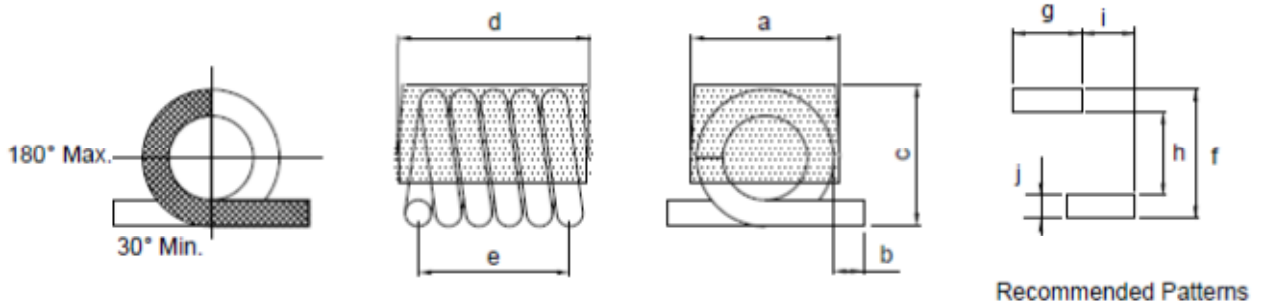
Prepared by	Checked by	Approved by	Accepted by (customer)
27-Jul.-2015	27-Jul.-2015	27-Jul.-2015	
<i>Andy Hsu</i>	<i>Hwa Wu</i>	<i>Hwa Wu</i>	

Feature:

- Small air core inductors feature high Q and tight tolerances
- Solder coated leads ensure reliable soldering.
- 10 inductance values from 2.5 to 43 nH
- Flat top and bottom for reliable pick and place and mechanical stability
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※Graphic is only for dimensionally application.

1. MECHANICAL DIMENSION:



UNIT :mm

Size	a	b	c	d	e
1512	3.05 (Max.)	0.58±0.38	3.18 (Max.)	3.68 (Max.)	2.92±0.25
2712	3.05 (Max.)	0.58±0.38	3.18 (Max.)	6.86 (Max.)	5.84±0.25

Land Pattern: mm

Size	f	g	h	i	j
1512	4.19	3.30	1.65	2.79	1.27
2712	7.24	3.30	4.70	2.79	1.27

2. ELECTRICAL:

PART NO.	Turns	Tolerance	Inductance (nH)	Q (MIN)	Test Freq (MHz)	DCR MAX (mΩ)	SRF (GHz) MIN	Rated current(A) MAX
MSA1512T-01□□	1	K	2.5	145	150	1.1	12.5	4.0
MSA1512T-02□□	2	G, J	5.0	140	150	1.8	6.5	4.0
MSA1512T-03□□	3	G, J	8.0	140	150	2.6	5.0	4.0
MSA1512T-04□□	4	G, J	12.5	137	150	3.4	3.3	4.0
MSA1512T-05□□	5	G, J	18.5	137	150	3.9	2.5	4.0

PART NO.	Turns	Tolerance	Inductance (nH)	Q (MIN)	Test Freq (MHz)	DCR MAX (mΩ)	SRF (GHz) MIN	Rated current(A) MAX
MSA2712T-06□□	6	G, J	17.5	112	150	4.5	2.2	4.0
MSA2712T-07□□	7	G, J	22.0	112	150	5.2	2.1	4.0
MSA2712T-08□□	8	G, J	28.0	112	150	6.0	1.8	4.0
MSA2712T-09□□	9	G, J	35.5	112	150	6.8	1.5	4.0
MSA2712T-10□□	10	G, J	43.0	112	150	7.9	1.2	4.0

NOTE :

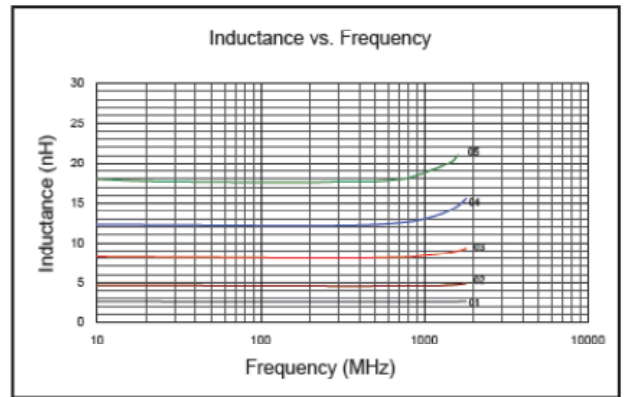
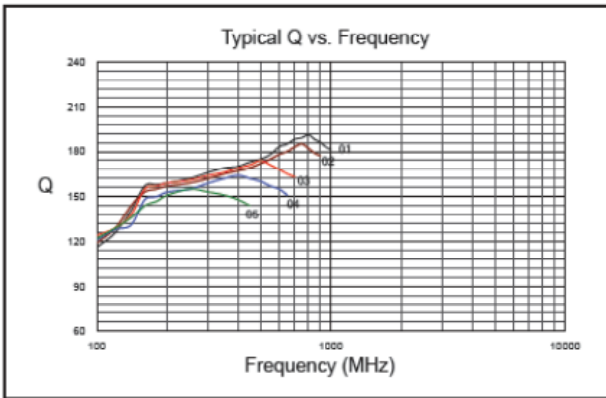
1. Tolerance : G:±2%,J:±5%, K:±10%
2. Inductance & Q measured on the HP4291B. With HP16193A test fixture.
3. SRF measured on HP8753E/HP8720D or equivalent.
4. RDC measured on Chroma 16502 or equivalent.
5. Operating temperature range: -40°C to +125°C.
6. Storage temperature :-40°C to +85°C
7. For temperature rise : 15°C.
8. MSL : LEVEL 1

Last two digits of the part no. :

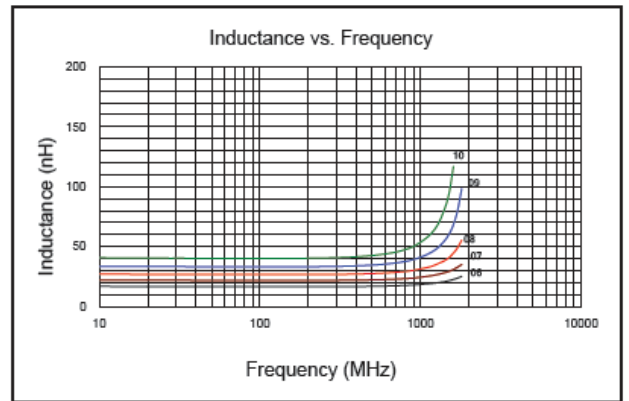
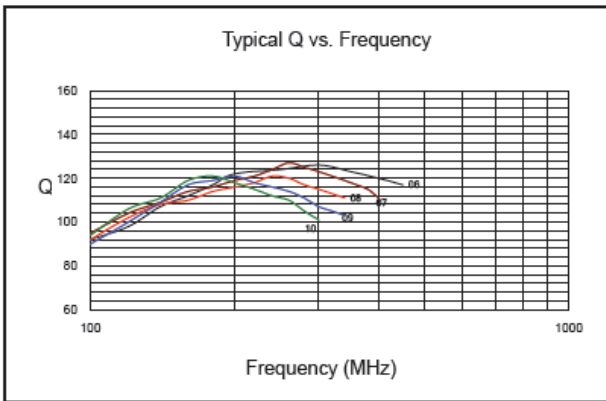
□: Tolerance □: Internal Code

3. CHARACTERISTIC CURVES

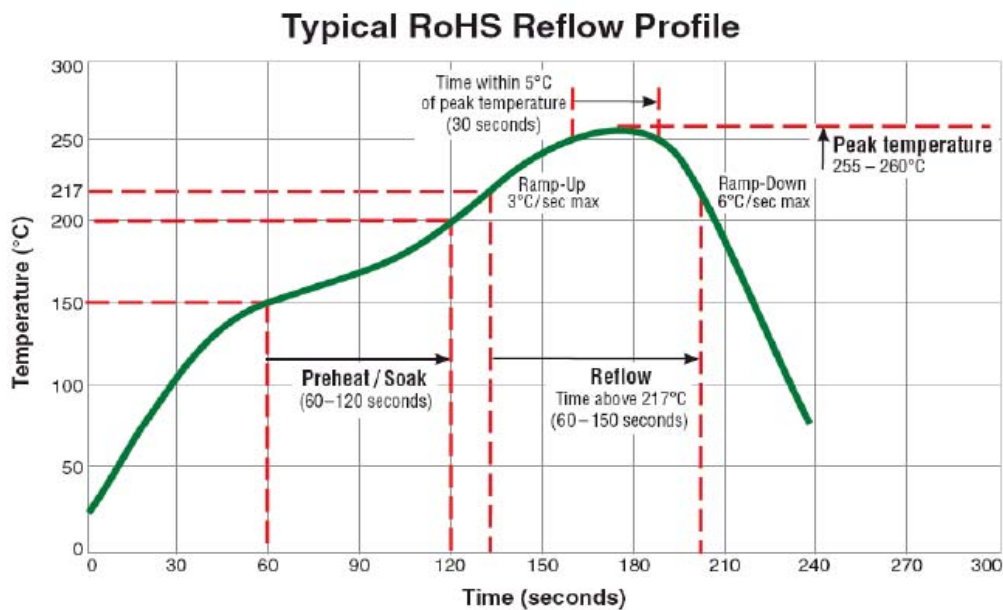
MSA1512



MSA2712



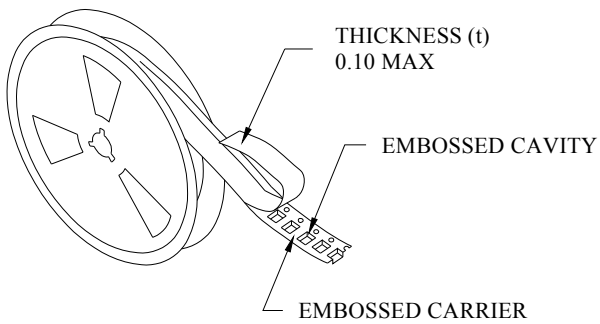
4. Typical RoHS Reflow Profile



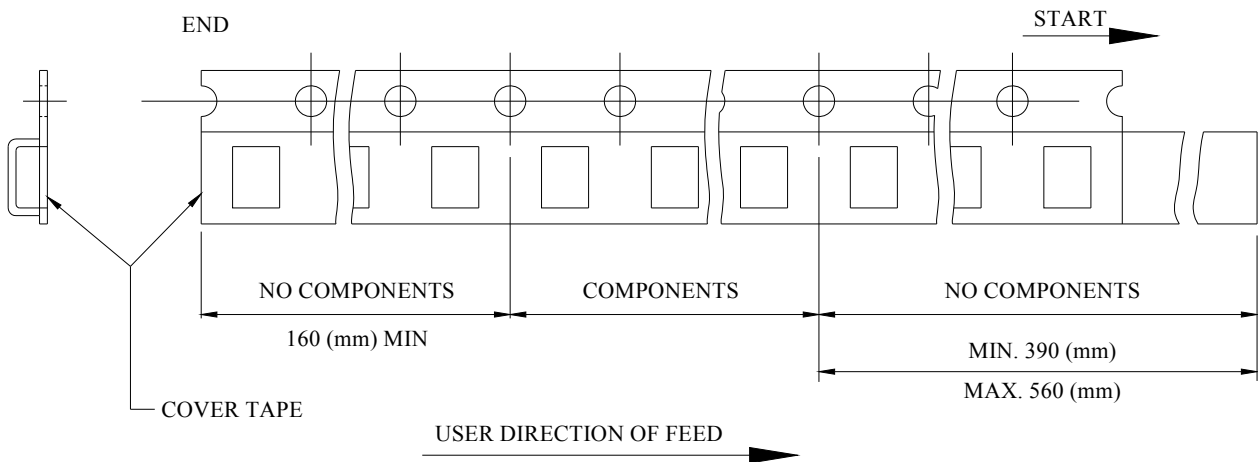
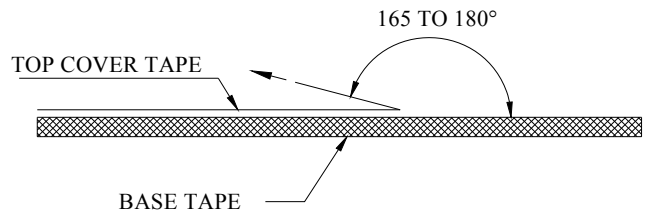
5. RELIABILITY TEST

Test Item	Test Condition	Standard Source
Salt Spray Test	Chamber temperature 35°C, the concentration of salt spray 5% (Total 24 hours).	MIL-STD-202G Method 101E Test Condition C
Humidity Test	+40°C±2°C, humidity of 90%±5% (total 96 hours).	MIL-STD-202G Method 103B Test Condition B
High Temperature Storage	1.Temperature: +125°C±2°C 2.Test time:48±2hrs	IEC 68-2 Test Condition B
Low Temperature Storage	1.Temperature: -40°C±2°C 2.Test time: 48±2hrs	IEC 68-2 Test Condition A
Thermal Shock	+125°C±5°C (30 minutes) ~ -40 ± 5°C (30 minutes), temperature switch time: 5 minutes (total 50 cycles).	MIL-STD-202G Method 107G Test Condition B-2
Life Test	+75°C±2°C (300Hours)	MIL-STD-202G Method 108A Test Condition D
Vibration Test	10-55-10HZ, amplitude: 1.5mm, direction: X, Y, Z axes, each axis 2 hours (total 6 hours).	MIL-STD-202G Method 201A
Solder Heat Resistance Test	DIP: Soak in 260°C solder pot, stay 10Sec Reflow: Keep 250 ±5°C,30 ±5Sec in air, Temperature ramp:+1~4°C/sec; Above1 83°C, must keep 90 s - 120 s.	MIL-STD-202G Method 210F Test Condition B(DIP) Test Condition (Reflow)
Terminal Pull Strength Test	1/2, 1, 2, 3, 5, 10 Pound, as products terminal feature.	MIL-STD-202G Method 211A Test Condition A
Solder Ability Test	Soak in 245 °C solder pot of 3Sec, PAD must have 95% above coverage.	J-STD-003B
Terminal Push Strength Test	No special requirements: 5N thrust to maintain 10 Sec.	JIS C5321:1997

6. PACKAGING

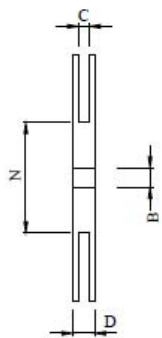
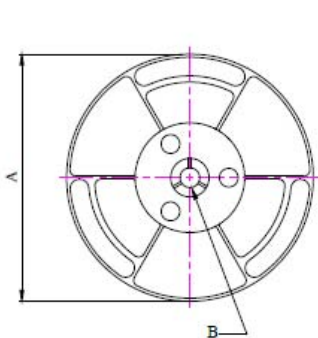


- THE FORCE FOR TEARING OFF COVER TAPE IS 10 TO 130 GRAMS IN THE ARROW DIRECTION.

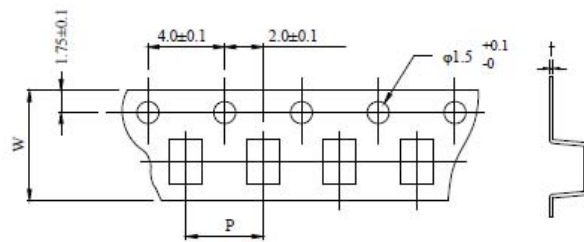


■ CARRIER TAPE REELS (mm)

MATERIAL: PLASTIC



■ DIMENSIONS OF CARRIER TAPE (mm)



UNIT:mm

ITEM	A	B	C	D	N	W	P	t
1512	178±2.0	15±0.5	12.5+1.5-0	16.4+1.5-0	75±2.0	12±0.2	8±0.1	0.25±0.05
2712.	178±2.0	15±0.5	16.5+1.5-0	20.4+1.5-0	75±2.0	16±0.2	8±0.1	0.25±0.05