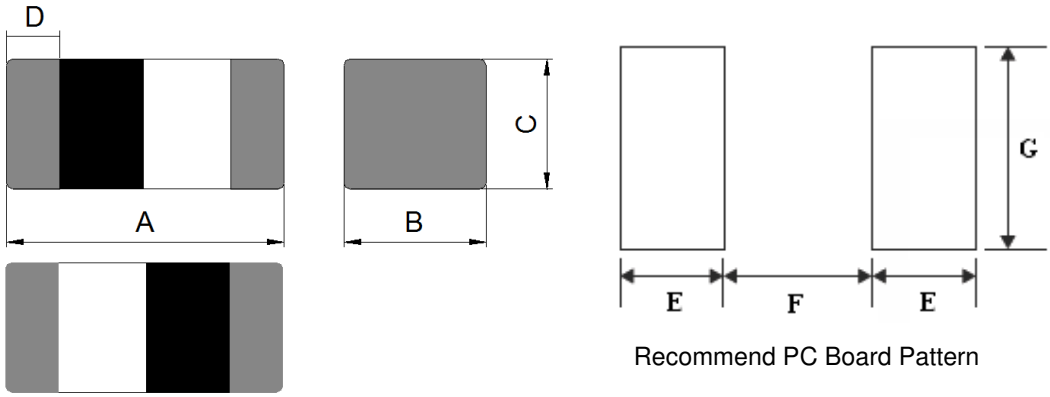
Chip Inductors – *C1 Series*

1. Part No. Expression

C 1 - 1 N 0 S - E - 1 0
(a)(b) (c) (d) (e) (f)

(a) Series Code
(b) Dimension Code
(c) Inductance Code
(d) Tolerance Code
(e) Special Code
(f) Internal Code

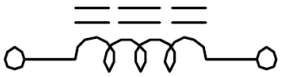
2. Configuration & Dimensions: (Unit:- mm)



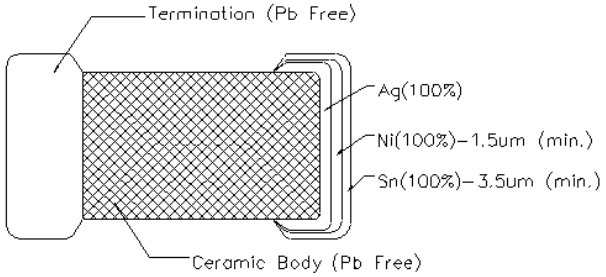
Recommend PC Board Pattern

A	B	C	D	E	F	G
1.00±0.10	0.50±0.05	0.50±0.05	0.20±0.10	0.50 Ref.	0.40 Ref.	0.60 Ref.

3. Schematic



4. Material List



NOTE: Specifications subject to change without notice. Please check our website for latest information.

5. General Specifications

(a) Operating Temp. : -55°C to +125°C (including self-temperature rise).

(b) Storage Temp. : -40°C to +85°C (on board).

(c) The maximum rated current: the DC current value having temperature increased 40°C after through DC current 2 hours at ambient temperature.

(d) Storage Condition (Component in its packaging)

i) Temperature: Less than 40°C

ii) Humidity: 60% RH

6. Electrical Characteristics

Part Number	Inductance (nH) @250mV/100MHz	Q Factor Min	SRF (GHz) Min	DCR (Ω) Max	Rated Current (mA) Max
C1-1N0S-E-10	1.0	8	8	0.10	300
C1-1N2S-E-10	1.2	8	8	0.10	300
C1-1N5S-E-10	1.5	8	8	0.10	300
C1-1N8S-E-10	1.8	8	6	0.10	300
C1-2N0S-E-10	2.0	8	6	0.12	300
C1-2N2S-E-10	2.2	8	6	0.15	300
C1-2N4S-E-10	2.4	8	6	0.16	300
C1-2N7S-E-10	2.7	8	6	0.17	300
C1-3N0S-E-10	3.0	8	6	0.18	300
C1-3N3S-E-10	3.3	8	6	0.19	300
C1-3N6S-E-10	3.6	8	6	0.19	300
C1-3N9S-E-10	3.9	8	6	0.19	300
C1-4N3S-E-10	4.3	8	4	0.21	300
C1-4N7S-E-10	4.7	8	6	0.23	300
C1-5N1S-E-10	5.1	8	6.0	0.24	300

Tolerance Code: S=±0.3nH, J=±5%

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Part Number	Inductance (nH) @250mV/100MHz	Q Factor Min	SRF (GHz) Min	DCR (Ω) Max	Rated Current (mA) Max
C1-5N6S-E-10	5.6	8	5.3	0.26	300
C1-6N2S-E-10	6.2	8	4.3	0.27	300
C1-6N8J-E-10	6.8	8	4.2	0.29	300
C1-7N5J-E-10	7.5	8	4.2	0.31	300
C1-8N2J-E-10	8.2	8	3.6	0.33	300
C1-9N1J-E-10	9.1	8	3.4	0.34	300
C1-10NJ-E-10	10	8	3.2	0.35	300
C1-12NJ-E-10	12	8	2.8	0.41	300
C1-15NJ-E-10	15	8	2.3	0.46	300
C1-18NJ-E-10	18	8	2.1	0.51	300
C1-22NJ-E-10	22	8	1.8	0.58	300
C1-27NJ-E-10	27	8	1.6	0.67	300
C1-33NJ-E-10	33	8	1.5	0.67	200
C1-39NJ-E-10	39	8	1.2	1.06	200
C1-47NJ-E-10	47	8	1.0	1.15	200
C1-56NJ-E-10	56	8	0.8	1.2	200
C1-68NJ-E-10	68	8	0.8	1.25	180
C1-82NJ-E-10	82	8	0.6	1.6	150
C1-R10J-E-10	100	8	0.6	1.6	150
C1-R12J-E-10	120	8	0.6	1.6	150
C1-R15J-E-10	150	8	0.5	2.99	140
C1-R18J-E-10	180	8	0.5	3.38	150
C1-R22J-E-10	220	8	0.5	3.77	120
C1-R27J-E-10	270	8	0.4	4.9	110

Tolerance Code: S=±0.3nH, J=±5%

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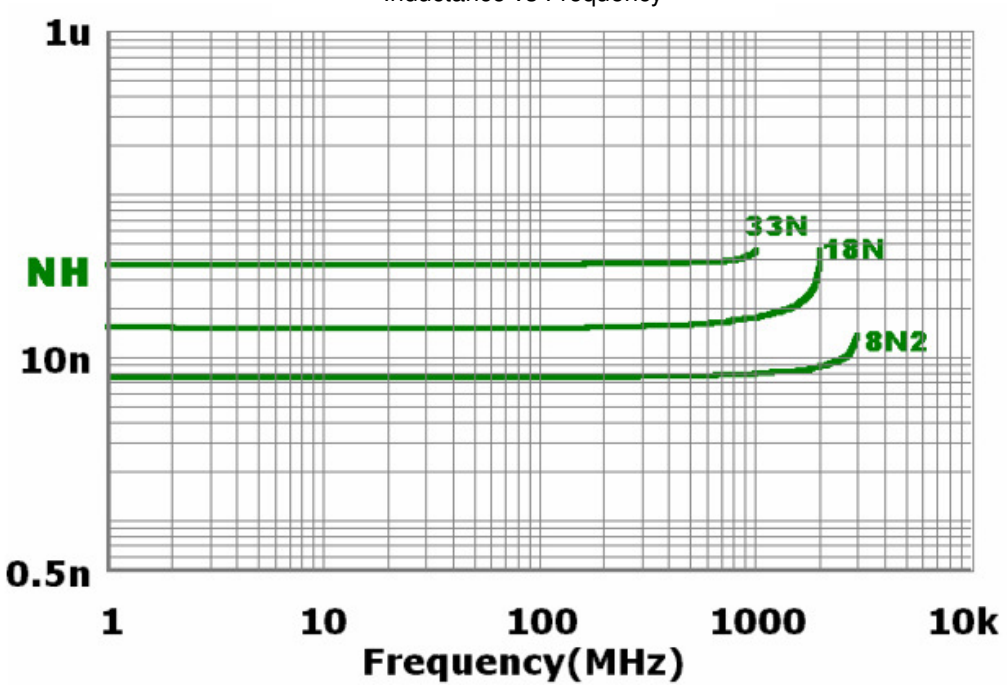
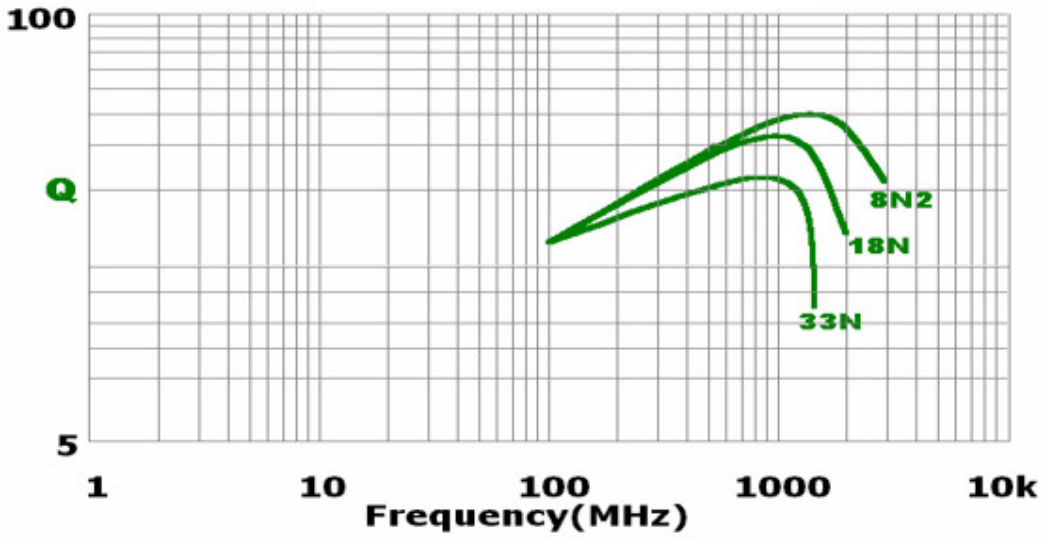
7. Characteristics Curves

Inductance vs Frequency



Q vs Frequency



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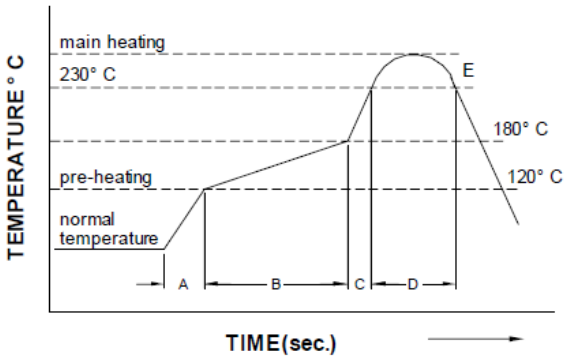
8. Soldering and Mounting

Mildly activated rosin fluxes are preferred. The terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

8-1 Solder Re-flow:

Recommended temperature profiles for lead free re-flow soldering as following diagram.



(Melting area of solder)

A	Slope of temp. rise	1 to 5	° C/sec
B	Heat time	50 to 150	sec
	Heat temperature	120 to 180	° C
C	Slope of temp. rise	1 to 5	° C/sec
D	Time over 230° C	90~120	sec
E	Peak temperature	255~260	° C
	Peak hold time	10 max.	sec
No. of mounting		3	times

8-2 Soldering Iron:

Products attachment with soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended. Reworking should be limited to only one time.

Note:

a) Preheat circuit and products to 150°C for 1 minute.

b) 280°C tip temperature (Max).

c) Never contact the ceramic with the iron tip.

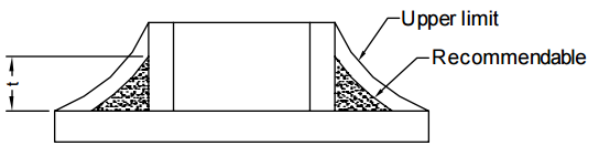
d) Control the end of soldering iron in 3mm (Max).

e) Use a 30 Watt soldering iron.

f) Limit soldering time to 3 secs.

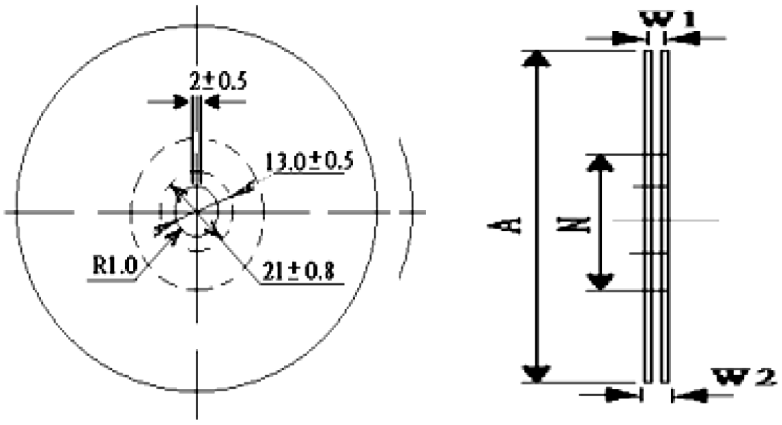
8-3 Soldering Volume:

Accordingly increasing the solder volume, the mechanical stress to product is also increased. Exceeding solder volume may cause the failure of mechanical or electrical performance. Solder shall be used not to be exceeding as following diagram. Minimum fillet height = soldering thickness + 25% product height.



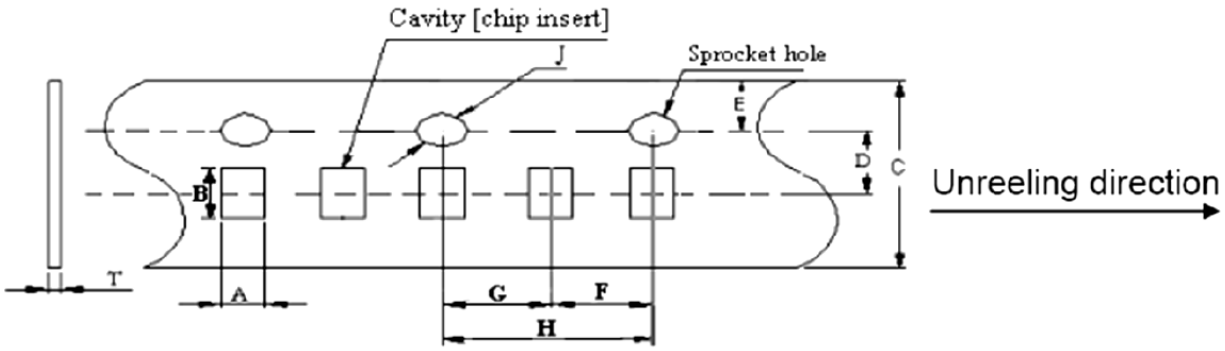
9. Packaging Information

9-1 Reel Dimension



A(mm)	N(mm)	W1(mm)	W2(mm)
178±2	50 Min.	10±1.5	20 Max.

9-2 Tape Dimension



Size	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)
	0.62±0.05	1.12±0.05	8.00±0.10	3.50±0.05	1.75±0.10
C1	F(mm)	G(mm)	H(mm)	J(mm)	T(mm)
	2.00±0.05	2.00±0.05	4.00±0.10	1.55±0.05	0.60±0.05

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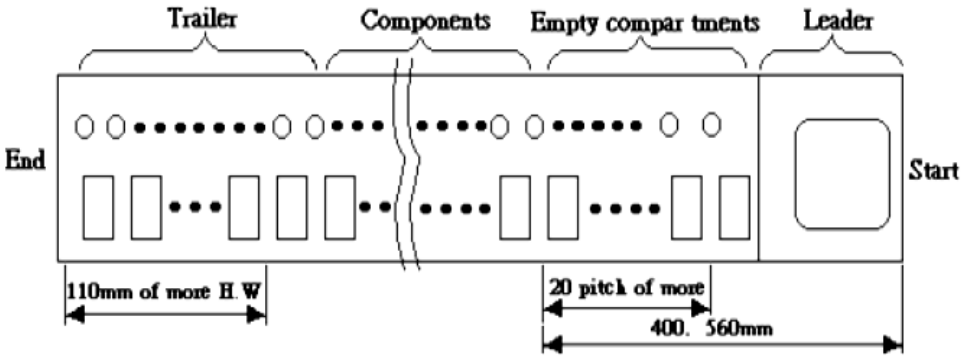
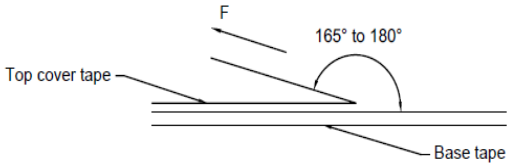


9-3 Packaging Quantity

Chip Size	C1
Chip/Reel	10,000

9-4 Tearing Off Force



The force for tearing off cover tape is 10 to 100 grams in the arrow direction under the following conditions.

Room Temp. (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

Application Notice:

1. Storage Conditions:

   To maintain the solderability of terminal electrodes:

   a) Recommended products should be used within 12 months from the time of delivery.

   b) The packaging material should be kept where no chlorine or sulfur exists in the air.

2. Transportation:

   a) Products should be handled with care to avoid damage or contamination from perspiration and skin oils.

   b) Vacuum pick up is strongly recommended for individual components.

   c) Bulk handling should ensure that abrasion and mechanical shock are minimized.