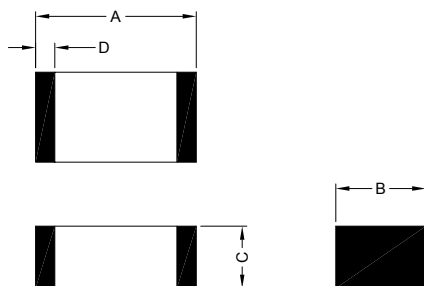


### 1. PART NO. EXPRESSION :

C 3 - 1 N 0 S - 1 0  
 (a) (b) (c) (d)

- (a) Series code
- (b) Inductance code : 1N0 = 1.0nH
- (c) Tolerance code : S =  $\pm 0.3nH$ , J =  $\pm 5\%$
- (d) 10 : RoHS Compliant

### 2. CONFIGURATION & DIMENSIONS :



Unit:m/m

| A             | B              | C              |                | D         |
|---------------|----------------|----------------|----------------|-----------|
| 2.0 $\pm$ 0.2 | 1.25 $\pm$ 0.2 | 0.85 $\pm$ 0.2 | 1.25 $\pm$ 0.2 | 0.2 ~ 0.8 |

### 3. GENERAL SPECIFICATION :

- a) Operating temp. : -40°C to +85°C
- b) Storage temp. : -10°C to +40°C
- c) Humidity range : 70% RH Max.
- d) Resistance to solder heat : 265°C.6secs



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### 4. ELECTRICAL CHARACTERISTICS :

| Part Number | Dim. C<br>±0.2 | Inductance<br>( nH ) | Q<br>Min. | Test<br>Frequency<br>( MHz ) | SRF<br>( GHz )<br>Min. | DCR<br>( Ω )<br>Max. | Rated Current<br>( mA )<br>Max. |
|-------------|----------------|----------------------|-----------|------------------------------|------------------------|----------------------|---------------------------------|
| C3-1N0S-10  | 0.85           | 1.0                  | 10        | 100                          | 10                     | 0.10                 | 300                             |
| C3-1N2S-10  | 0.85           | 1.2                  | 10        | 100                          | 10                     | 0.10                 | 300                             |
| C3-1N5S-10  | 0.85           | 1.5                  | 10        | 100                          | 4.0                    | 0.10                 | 300                             |
| C3-1N8S-10  | 0603           | 1.8                  | 10        | 100                          | 4.0                    | 0.10                 | 300                             |
| C3-2N2S-10  | 0603           | 2.2                  | 10        | 100                          | 4.0                    | 0.10                 | 300                             |
| C3-2N7S-10  | 0.85           | 2.7                  | 12        | 100                          | 4.0                    | 0.10                 | 300                             |
| C3-3N3S-10  | 0.85           | 3.3                  | 12        | 100                          | 4.0                    | 0.13                 | 300                             |
| C3-3N9S-10  | 0.85           | 3.9                  | 12        | 100                          | 4.0                    | 0.15                 | 300                             |
| C3-4N7S-10  | 0.85           | 4.7                  | 12        | 100                          | 3.5                    | 0.20                 | 300                             |
| C3-5N6S-10  | 0.85           | 5.6                  | 15        | 100                          | 3.2                    | 0.23                 | 300                             |
| C3-6N8J-10  | 0.85           | 6.8                  | 15        | 100                          | 2.8                    | 0.25                 | 300                             |
| C3-8N2J-10  | 0.85           | 8.2                  | 15        | 100                          | 2.4                    | 0.28                 | 300                             |
| C3-10NJ-10  | 0.85           | 10                   | 15        | 100                          | 2.1                    | 0.30                 | 300                             |
| C3-12NJ-10  | 0.85           | 12                   | 15        | 100                          | 1.9                    | 0.35                 | 300                             |
| C3-15NJ-10  | 0.85           | 15                   | 15        | 100                          | 1.6                    | 0.40                 | 300                             |
| C3-18NJ-10  | 0.85           | 18                   | 15        | 100                          | 1.5                    | 0.45                 | 300                             |
| C3-22NJ-10  | 0.85           | 22                   | 18        | 100                          | 1.4                    | 0.50                 | 300                             |
| C3-27NJ-10  | 0.85           | 27                   | 18        | 100                          | 1.3                    | 0.55                 | 300                             |
| C3-33NJ-10  | 0.85           | 33                   | 18        | 100                          | 1.2                    | 0.60                 | 300                             |
| C3-39NJ-10  | 0.85           | 39                   | 18        | 100                          | 1.0                    | 0.65                 | 300                             |
| C3-47NJ-10  | 0.85           | 47                   | 18        | 100                          | 0.9                    | 0.70                 | 300                             |
| C3-56NJ-10  | 0.85           | 56                   | 18        | 100                          | 0.8                    | 0.75                 | 300                             |
| C3-68NJ-10  | 0.85           | 68                   | 18        | 100                          | 0.7                    | 0.80                 | 300                             |
| C3-82NJ-10  | 0.85           | 82                   | 18        | 100                          | 0.6                    | 0.90                 | 300                             |
| C3-R10J-10  | 0.85           | 100                  | 18        | 100                          | 0.6                    | 0.90                 | 300                             |
| C3-R12J-10  | 0.85           | 120                  | 13        | 50                           | 0.5                    | 0.95                 | 300                             |
| C3-R15J-10  | 1.25           | 150                  | 13        | 50                           | 0.5                    | 1.00                 | 300                             |
| C3-R18J-10  | 1.25           | 180                  | 13        | 50                           | 0.4                    | 1.10                 | 300                             |
| C3-R22J-10  | 1.25           | 220                  | 12        | 50                           | 0.35                   | 1.20                 | 300                             |
| C3-R27J-10  | 1.25           | 270                  | 12        | 50                           | 0.3                    | 1.30                 | 300                             |
| C3-R33J-10  | 1.25           | 330                  | 12        | 50                           | 0.25                   | 1.40                 | 300                             |
| C3-R39J-10  | 1.25           | 390                  | 10        | 50                           | 0.25                   | 1.40                 | 300                             |
| C3-R47J-10  | 1.25           | 470                  | 10        | 50                           | 0.20                   | 1.50                 | 300                             |
| C3-R56J-10  | 1.25           | 560                  | 10        | 25                           | 0.18                   | 5.00                 | 50                              |
| C3-R68J-10  | 1.25           | 680                  | 10        | 25                           | 0.16                   | 5.50                 | 50                              |

Tolerance code :

S : ±0.3nH

J : ±5%

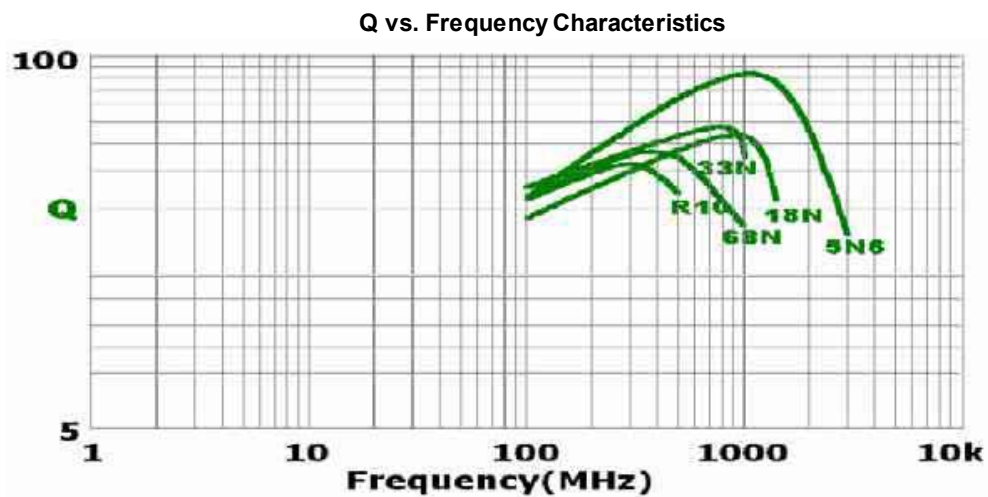
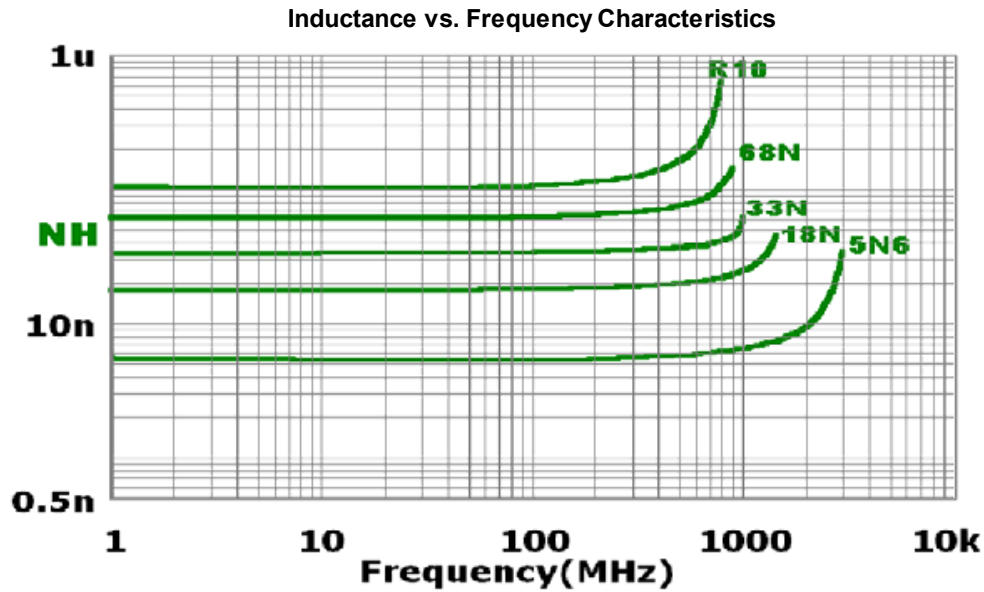
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### 5. CHARACTERISTICS CURVES :



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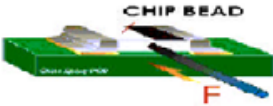
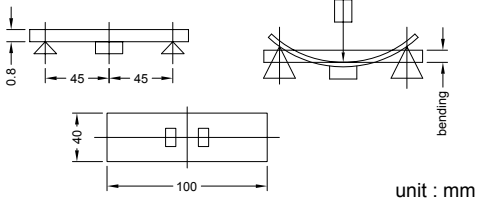
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### 6. RELIABILITY & TEST CONDITION :

| ITEM                        | PERFORMANCE  | TEST CONDITION   |
|-----------------------------|--|--|
| DC Resistance               |  | HP4338 digital milli-ohm meter   |
| Terminal Strength           | Appearance : No significant abnormality<br>Impedance change : Within $\pm 30\%$<br><br>DCR : Shall be satisfied  | Solder chip on PCB and applied 10N (1.02Kgf) for 10sec<br><br>   |
| Substrate Bending Strength  | Appearance : No significant abnormality<br>Inductance change : Within $\pm 20\%$<br><br>DCR : Shall be satisfied                                       | Solder a chip on a test substrate, bend the substrate by 3mm hold for 10s and then return.<br>Soldering shall be done in accordance with the recommended PC board pattern and reflow soldering<br><br><br>unit : mm  |
| Resistance to Solder Heat   | Appearance : No significant abnormality<br>Electrical and mechanical characteristics shall be satisfied<br><br>Consult standard MIL-STD-202 METHOD 210 | Preheat : 100 ~ 150°C, 60sec.<br>Solder : Sn-Ag3.0-Cu0.5<br>Solder Temperature : 265 $\pm$ 3°C<br>Dip Time : 6 $\pm$ 1sec.<br>Measurement to be made after keeping at room temp for 24 $\pm$ 2hrs  |
| Solderability               | More than 95% coverage of all metallized area<br><br>Consult standard J-STD-002  | Solder Temperature : 240 $\pm$ 5°C<br>Solder : Sn-Ag3.0-Cu0.5<br>Dip Time : 3 $\pm$ 1sec.  |
| High Temperature Resistance | Appearance : No mechanical damage.<br><br>Inductance : Within $\pm 20\%$ of initial value.   | Temperature : 85 $\pm$ 2°C<br>Applied Current : rated current (max. value)<br>Duration : 1008 $\pm$ 12hrs<br>Measurement : After placing for 24 hours (min.) at room ambient temperature   |
| Humidity Resistance         | Appearance : No mechanical damage.<br><br>Inductance : Within $\pm 20\%$ of initial value.   | Humidity : 90~95% RH.<br>Temperature : 60 $\pm$ 2°C<br>Applied Current : rated current (max. value)<br>Duration : 1008 $\pm$ 12hrs<br>Measurement : After placing for 24 hours (min.) at room ambient temperature  |
| Temperature Cycle           | Appearance : No mechanical damage.<br><br>Inductance : Within $\pm 20\%$ of initial value.   | Condition for 1 cycle<br>Step1 : -40 $\pm$ 3°C 30 $\pm$ 3 min.<br>Step2 : Room temperature 2 to 5 minutes<br>Step3 : +85 $\pm$ 2°C 30 $\pm$ 3 min.<br>Step4 : Room temperature 2 to 5 minutes<br>Number of cycles : 100<br>Measurement : After placing for 24 hours (min.) at room ambient temperature |



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### 6. RELIABILITY & TEST CONDITION :

| ITEM                         | PERFORMANCE  | TEST CONDITION   |
|------------------------------|--|--|
| Low Temperature Storage test | Appearance : No mechanical damage.<br>Inductance : Within $\pm 20\%$ of initial value. | Temperature : $-40 \pm 2^\circ\text{C}$<br>Duration : $1008 \pm 12$ hrs<br>Measurement : After placing for 24 hours (min.) at room ambient temperature   |
| Thermal Shock                | Appearance : No mechanical damage.<br>Inductance : Within $\pm 20\%$ of initial value. | Temperature : $-40^\circ\text{C}$ , $+85^\circ\text{C}$ kept stabilized for 30 minutes each<br>Cycle : 100 cycles<br>Measurement : After placing for 24 hours (min.) at room ambient temperature   |
| Vibration Test               | Appearance : No mechanical damage.<br>Inductance : Within $\pm 20\%$ of initial value. | Waveform : Sine wave<br>Frequency : 10-55-10Hz for 1 min.<br>Amplitude : 1.5mm(peak-peak)<br>Directions & times : X, Y, Z directions for 2 hours.<br>A period of 2 hours in each of 3 mutually perpendicular directions (Total 6 hours). |



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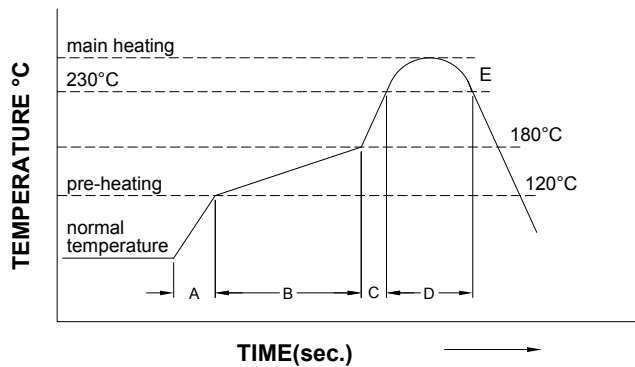
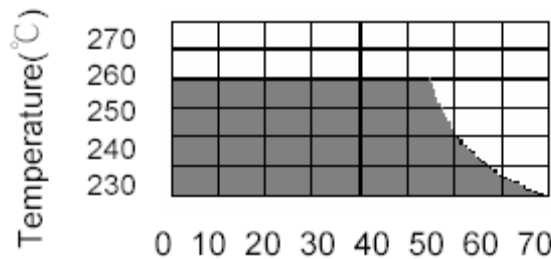
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## 7. SOLDERING :

### 7-1. Reflow soldering conditions

Pre-heating should be in such a way that the temperature difference between solder and ferrite surface is limited to 150°C max. Also cooling into the solvent after soldering should be in such a way that the temperature difference is limited to 100°C max. Insufficient pre-heating may cause cracks on the ferrite, resulting in the deterioration of product quality.

Products should be soldered within the following allowable range indicated by the slanted line. The excessive soldering conditions may cause the corrosion of the electrode. When soldering is repeated, allowable time is the accumulated time.



|                 |                     |            |        |
|-----------------|---------------------|------------|--------|
| 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  |

(Melting area of solder)

### 7-2. Soldering Iron

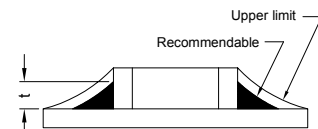
Products attachment with soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

Note :

- a) Preheat circuit and products to 150°C.
- b) 280°C tip temperature (max)
- c) Never contact the ceramic with the iron tip
- d) 3.0mm tip diameter (max)
- e) Use a 30 watt max. soldering iron with tip diameter of 3.0mm
- f) Limit soldering time to 3 secs.

### 7-3. Solder 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 exceed as shown in right side.



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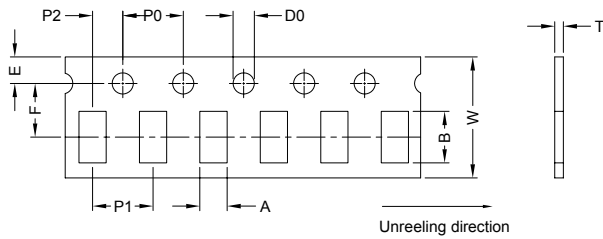


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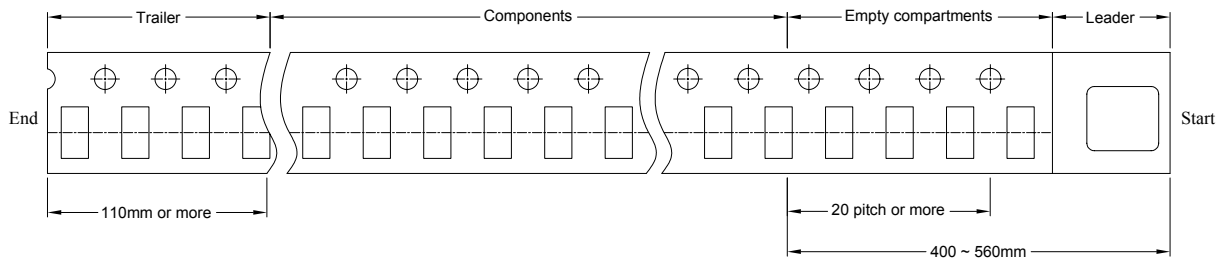
### 8. PACKAGING INFORMATION :

#### 8-1. Paper Carrier Tape Packaging

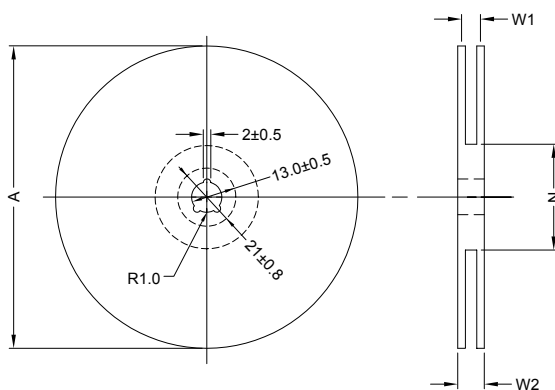


| A(mm)     | B(mm)     | W(mm)     | F(mm)     | E(mm)     | P1(mm)    | P2(mm)    | P0(mm)    | D0(mm)    | t(mm)     |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1.45±0.05 | 2.25±0.05 | 8.00±0.10 | 3.50±0.05 | 1.75±0.10 | 4.00±0.10 | 2.00±0.05 | 4.00±0.10 | 1.55±0.05 | 0.95±0.05 |

#### 8-2. Leader And Trailer Tape



#### 8-3. Configuration



| A(mm)   | N(mm)   | W1(mm) | W2(mm)  | QTY (PCS) |
|---------|---------|--------|---------|-----------|
| 178±2.0 | 50 Min. | 10±1.5 | 20 Max. | 4000/Reel |



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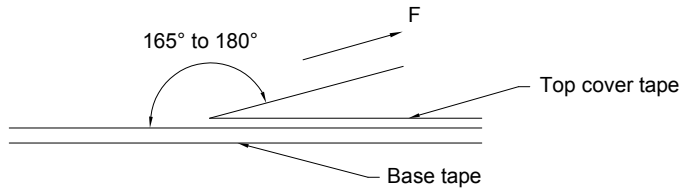
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### 8-4. Tearing Off Force



#### Peeling Strength of Cover Tape

|            |            |
|------------|------------|
| Cover Tape | 10g ~ 100g |
|------------|------------|

Peel Speed : 300mm/min

### 8-5. Packaging

1. Reel and a bag of desiccant shall be packed in Nylon or plastic bag
2. Maximum of 5 bags shall be packed in an inner box
3. Maximum of 6 inner boxes shall be packed in an outer box

### Application Notice

#### 1. Storage Conditions :

To maintain the solderability of terminal electrodes :

- a) Temperature and humidity conditions : Less than 40°C and 70% RH.
- b) Recommended products should be used within 6 months from the time of delivery.
- c) 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) The use of tweezers or vacuum pick up is strongly recommended for individual components.
- c) Bulk handling should ensure that abrasion and mechanical shock are minimized.



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