

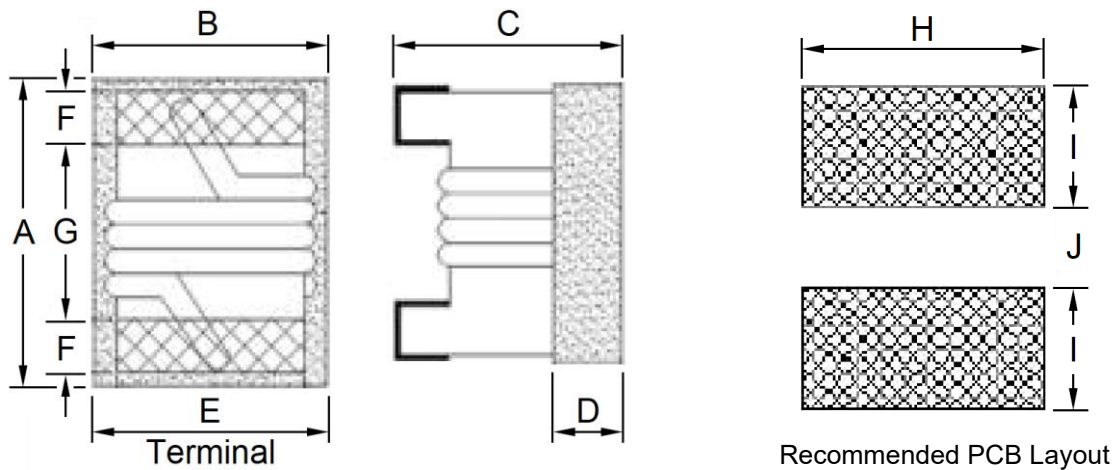
## 1. Part No. Expression

**SC10402C1N0B**

(a) (b) (c) (d) (e)

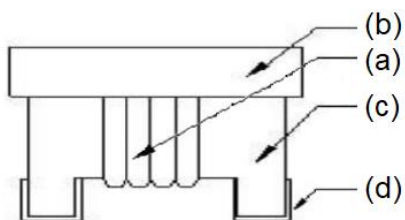
- (a) Series Code (d) Inductance Code  
(b) Dimension Code (e) Tolerance Code  
(c) Material Code

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



| A        | B        | C        | D        | E        |
|----------|----------|----------|----------|----------|
| 1.19 Max | 0.70 Max | 0.66 Max | 0.25 Ref | 0.51 Ref |
| F        | G        | H        | I        | J        |
| 0.23 Ref | 0.56 Ref | 0.66 Ref | 0.36 Ref | 0.46 Ref |

## 3. Material List



- (a) Wire  
(b) Epoxy  
(c) Core  
(d) Terminal

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

## 4. General Specifications

- (a) Operating Temp.: -40°C to +125°C (including self-temperature rise)
- (b) Storage Temp.: -40°C to +125°C (on board)
- (c) Rated Current: 15°C rise above 25°C ambient.
- (d) Storage Condition (Component in its packaging)
  - i) Temperature: -10°C to +40°C
  - ii) Humidity: Less than 70% RH

## 5. Electrical Characteristics

| Part Number  | Inductance (nH) | Q Typ | Test Frequency (L/Q) | Tolerance     | I <sub>rms</sub> (mA) Typ | DCR (Ω) Max | SRF (MHz) Typ |
|--------------|-----------------|-------|----------------------|---------------|---------------------------|-------------|---------------|
| SCI0402C1N0□ | 1.0             | 16    | 0.2V/250MHz          | B, C, J, K    | 1360                      | 0.045       | 12700         |
| SCI0402C1N2□ | 1.2             | 10    | 0.2V/250MHz          | B, C, J, K    | 640                       | 0.14        | 10400         |
| SCI0402C1N3□ | 1.3             | 10    | 0.2V/250MHz          | B, C, J, K    | 640                       | 0.14        | 10400         |
| SCI0402C1N9□ | 1.9             | 16    | 0.2V/250MHz          | B, C, G, J, K | 1040                      | 0.07        | 11300         |
| SCI0402C2N0□ | 2.0             | 16    | 0.2V/250MHz          | B, C, G, J, K | 1040                      | 0.07        | 11100         |
| SCI0402C2N2□ | 2.2             | 19    | 0.2V/250MHz          | B, C, G, J, K | 960                       | 0.07        | 10800         |
| SCI0402C2N4□ | 2.4             | 15    | 0.2V/250MHz          | B, C, G, J, K | 790                       | 0.068       | 10500         |
| SCI0402C2N5□ | 2.5             | 13    | 0.2V/250MHz          | B, C, G, J, K | 640                       | 0.15        | 10400         |
| SCI0402C2N7□ | 2.7             | 16    | 0.2V/250MHz          | B, C, G, J, K | 640                       | 0.12        | 10400         |
| SCI0402C3N3□ | 3.3             | 19    | 0.2V/250MHz          | B, C, G, J, K | 840                       | 0.066       | 7000          |
| SCI0402C3N6□ | 3.6             | 19    | 0.2V/250MHz          | B, C, G, J, K | 840                       | 0.066       | 6800          |
| SCI0402C3N9□ | 3.9             | 19    | 0.2V/250MHz          | B, C, G, J, K | 840                       | 0.066       | 6000          |
| SCI0402C4N3□ | 4.3             | 18    | 0.2V/250MHz          | B, C, G, J, K | 700                       | 0.091       | 6000          |

□Tolerance: B= ±0.1nH, C= ±0.2nH, G= ±2%, J= ±5%, K= ±10%

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

| Part Number  | Inductance (nH) | Q Typ | Test Frequency (L/Q) | Tolerance     | I <sub>rms</sub> (mA) Typ | DCR (Ω) Max | SRF (MHz) Typ |
|--------------|-----------------|-------|----------------------|---------------|---------------------------|-------------|---------------|
| SC10402C4N7□ | 4.7             | 15    | 0.2V/250MHz          | B, C, G, J, K | 640                       | 0.13        | 4770          |
| SC10402C5N1□ | 5.1             | 20    | 0.2V/250MHz          | B, C, G, J, K | 800                       | 0.083       | 4800          |
| SC10402C5N6□ | 5.6             | 20    | 0.2V/250MHz          | G, J, K       | 760                       | 0.083       | 4800          |
| SC10402C5N8□ | 5.8             | 20    | 0.2V/250MHz          | G, J, K       | 760                       | 0.083       | 4800          |
| SC10402C6N2□ | 6.2             | 20    | 0.2V/250MHz          | G, J, K       | 760                       | 0.083       | 4800          |
| SC10402C6N8□ | 6.8             | 20    | 0.2V/250MHz          | G, J, K       | 680                       | 0.083       | 4800          |
| SC10402C7N3□ | 7.3             | 20    | 0.2V/250MHz          | G, J, K       | 680                       | 0.12        | 4800          |
| SC10402C4N3□ | 4.3             | 18    | 0.2V/250MHz          | B, C, G, J, K | 700                       | 0.091       | 6000          |
| SC10402C7N5□ | 7.5             | 22    | 0.2V/250MHz          | G, J, K       | 680                       | 0.1         | 4800          |
| SC10402C8N2□ | 8.2             | 22    | 0.2V/250MHz          | G, J, K       | 680                       | 0.1         | 4400          |
| SC10402C8N7□ | 8.7             | 18    | 0.2V/250MHz          | G, J, K       | 480                       | 0.2         | 4100          |
| SC10402C9N0□ | 9.0             | 22    | 0.2V/250MHz          | G, J, K       | 680                       | 0.1         | 4160          |
| SC10402C9N1□ | 9.1             | 22    | 0.2V/250MHz          | G, J, K       | 680                       | 0.1         | 4160          |
| SC10402C9N5□ | 9.5             | 18    | 0.2V/250MHz          | G, J, K       | 480                       | 0.2         | 4000          |
| SC10402C10N□ | 10              | 21    | 0.2V/250MHz          | G, J, K       | 480                       | 0.2         | 3900          |
| SC10402C11N□ | 11              | 24    | 0.2V/250MHz          | G, J, K       | 640                       | 0.12        | 3680          |
| SC10402C12N□ | 12              | 24    | 0.2V/250MHz          | G, J, K       | 640                       | 0.12        | 3600          |
| SC10402C13N□ | 13              | 24    | 0.2V/250MHz          | G, J, K       | 440                       | 0.21        | 3450          |
| SC10402C15N□ | 15              | 24    | 0.2V/250MHz          | G, J, K       | 560                       | 0.17        | 3280          |
| SC10402C16N□ | 16              | 24    | 0.2V/250MHz          | G, J, K       | 560                       | 0.22        | 3100          |
| SC10402C18N□ | 18              | 25    | 0.2V/250MHz          | G, J, K       | 420                       | 0.23        | 3100          |
| SC10402C19N□ | 19              | 24    | 0.2V/250MHz          | G, J, K       | 480                       | 0.2         | 3040          |

□Tolerance: B= ±0.1nH, C= ±0.2nH, G= ±2%, J= ±5%, K= ±10%

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| Part Number  | Inductance (nH) | Q Typ | Test Frequency (L/Q) | Tolerance | I <sub>rms</sub> (mA) Typ | DCR (Ω) Max | SRF (MHz) Typ |
|--------------|-----------------|-------|----------------------|-----------|---------------------------|-------------|---------------|
| SC10402C20N□ | 20              | 25    | 0.2V/250MHz          | G, J, K   | 420                       | 0.25        | 3000          |
| SC10402C22N□ | 22              | 25    | 0.2V/250MHz          | G, J, K   | 400                       | 0.3         | 2800          |
| SC10402C23N□ | 23              | 22    | 0.2V/250MHz          | G, J, K   | 400                       | 0.3         | 2720          |
| SC10402C24N□ | 24              | 25    | 0.2V/250MHz          | G, J, K   | 400                       | 0.3         | 2700          |
| SC10402C27N□ | 27              | 24    | 0.2V/250MHz          | G, J, K   | 400                       | 0.3         | 2480          |
| SC10402C30N□ | 30              | 25    | 0.2V/250MHz          | G, J, K   | 400                       | 0.35        | 2350          |
| SC10402C33N□ | 33              | 24    | 0.2V/250MHz          | G, J, K   | 400                       | 0.4         | 2350          |
| SC10402C36N□ | 36              | 24    | 0.2V/250MHz          | G, J, K   | 320                       | 0.44        | 2320          |
| SC10402C39N□ | 39              | 25    | 0.2V/250MHz          | G, J, K   | 200                       | 0.55        | 2100          |
| SC10402C40N□ | 40              | 24    | 0.2V/250MHz          | G, J, K   | 320                       | 0.65        | 2240          |
| SC10402C43N□ | 43              | 25    | 0.2V/250MHz          | G, J, K   | 100                       | 0.81        | 2030          |
| SC10402C47N□ | 47              | 25    | 0.2V/250MHz          | G, J, K   | 150                       | 0.83        | 2100          |
| SC10402C51N□ | 51              | 25    | 0.2V/250MHz          | G, J, K   | 100                       | 0.82        | 1750          |
| SC10402C56N□ | 56              | 22    | 0.2V/250MHz          | G, J, K   | 100                       | 0.97        | 1760          |
| SC10402C68N□ | 68              | 22    | 0.2V/250MHz          | G, J, K   | 100                       | 1.12        | 1620          |
| SC10402C72N□ | 72              | 22    | 0.2V/250MHz          | G, J, K   | 30                        | 2           | 1260          |
| SC10402C77N□ | 77              | 22    | 0.2V/250MHz          | G, J, K   | 50                        | 1.8         | 1260          |
| SC10402C82N□ | 82              | 22    | 0.2V/250MHz          | G, J, K   | 50                        | 1.55        | 1260          |
| SC10402CR10□ | 100             | 22    | 0.2V/250MHz          | G, J, K   | 30                        | 2           | 1160          |
| SC10402CR12□ | 120             | 22    | 0.2V/100MHz          | G, J, K   | 110                       | 2.4         | 1000          |
| SC10402CR18□ | 180             | 8     | 0.2V/100MHz          | G, J, K   | 50                        | 2.7         | 700           |
| SC10402CR22□ | 220             | 8     | 0.2V/100MHz          | G, J, K   | 50                        | 4           | 700           |

□Tolerance: B= ±0.1nH, C= ±0.2nH, G= ±2%, J= ±5%, K= ±10%

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## 6. Soldering Specification

Mildly activated rosin fluxes are preferred. Our 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.

### 6-1. IR Soldering Reflow

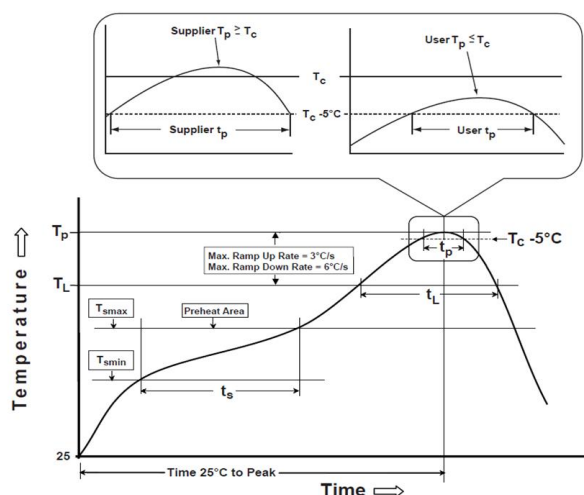
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

### 6-2. Iron Reflow

Products attachment with a 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 (Figure 2).

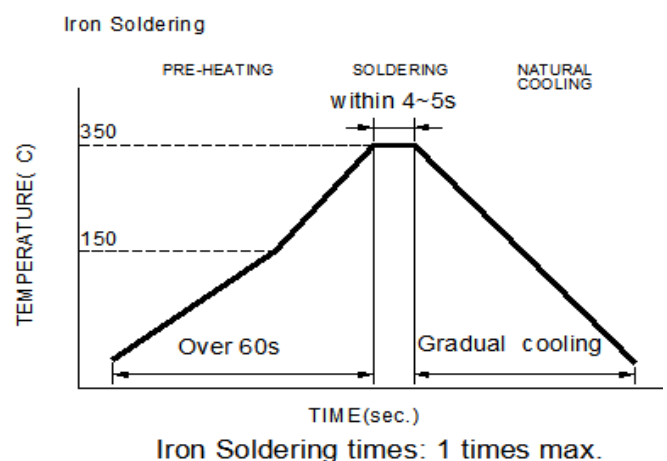
Note:

- Preheat circuit and products to 150°C.
- 355°C tip temperature (Max.)
- Never contact the ceramic with the iron tip
- 1.0mm tip diameter (Max.)
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- Limit soldering time to 4~5 sec.



Reflow times: 3 times Max

Figure 1: IR Soldering Reflow



Soldering iron method: 350±5°C Max

Figure 2: Iron soldering temperature profiles

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

**Table (1.1) Reflow Profiles**

|                                                                                            |                  |
|--------------------------------------------------------------------------------------------|------------------|
| Profile Type:                                                                              | Pb-Free Assembly |
| Preheat                                                                                    |                  |
| -Temperature Min ( $T_{smin}$ )                                                            | 150°C            |
| -Temperature Max ( $T_{smax}$ )                                                            | 200°C            |
| -Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )                                          | 60-120seconds    |
| Ramp-up rate ( $T_L$ to $T_p$ )                                                            | 3°C /second max. |
| Liquids temperature ( $T_L$ )                                                              | 217°C            |
| Time ( $t_L$ ) maintained above $T_L$                                                      | 60-150 seconds   |
| Classification temperature ( $T_c$ )                                                       | See Table (1.2)  |
| Time ( $t_p$ ) at $T_c - 5^\circ\text{C}$ ( $T_p$ should be equal to or less than $T_c$ .) | * < 30 seconds   |
| Ramp-down rate ( $T_p$ to $T_L$ )                                                          | 6°C /second max. |
| Time 25°C to peak temperature                                                              | 8 minutes max.   |

**T<sub>p</sub>**: maximum peak package body temperature, **T<sub>c</sub>**: the classification temperature.

For user (customer) **T<sub>p</sub>** should be equal to or less than **T<sub>c</sub>**.

\*Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

**Table (1.2) Package Thickness/Volume and Classification Temperature ( $T_c$ )**

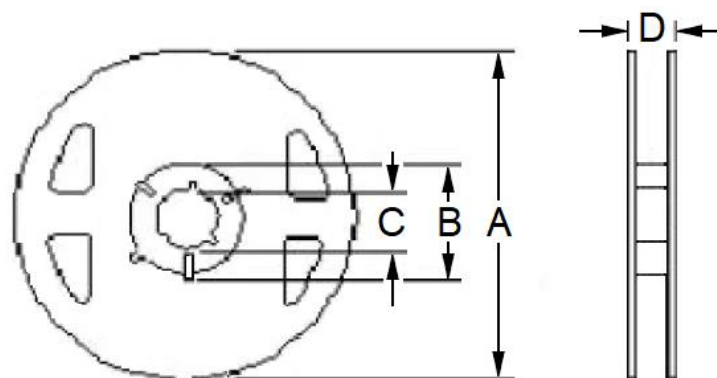
|                  | Package Thickness | Volume mm <sup>3</sup> <350 | Volume mm <sup>3</sup> 350-2000 | Volume mm <sup>3</sup> >2000 |
|------------------|-------------------|-----------------------------|---------------------------------|------------------------------|
| PB-Free Assembly | <1.6mm            | 260°C                       | 260°C                           | 260°C                        |
|                  | 1.6-2.5mm         | 260°C                       | 250°C                           | 245°C                        |
|                  | ≥2.5mm            | 250°C                       | 245°C                           | 245°C                        |

Reflow is referred to standard IPC/JEDEC J-STD-020E.

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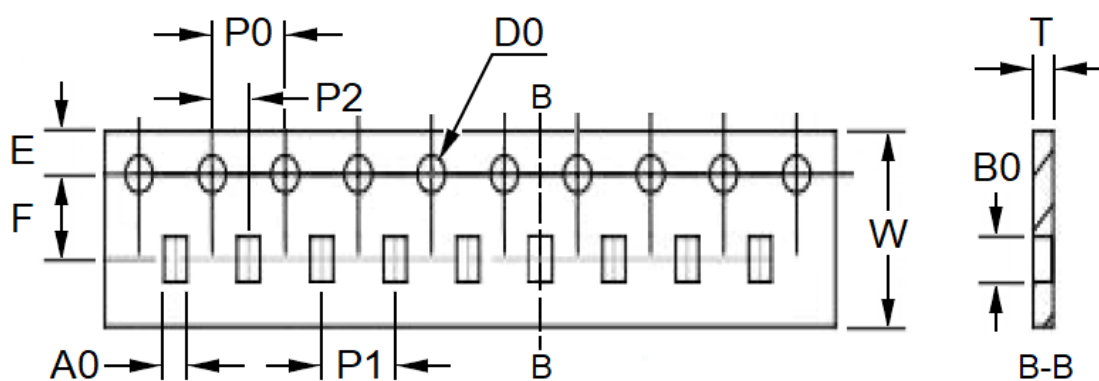
## 7. Packaging Information

### 7-1. Reel Dimension (Unit: mm)



| Type   | A         | B        | C        | D        |
|--------|-----------|----------|----------|----------|
| 7"x8mm | 180.0 Ref | 60.0 Ref | 13.0 Ref | 14.4 Ref |

### 7-2. Tape Dimension (Unit: mm)



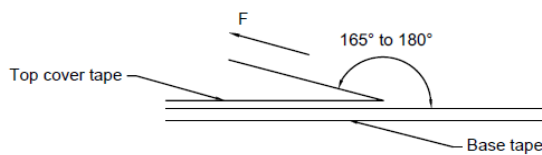
| A0       | B0       | T        | W        | P0       |
|----------|----------|----------|----------|----------|
| 1.23 Ref | 0.67 Ref | 0.75 Ref | 8.00 Ref | 4.00 Ref |
| P1       | P2       | D0       | E        | F        |
| 2.00 Ref | 2.00 Ref | 1.55 Ref | 1.75 Ref | 3.50 Ref |

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

## 7-3. Packaging Quantity (Unit: Pcs)

|              |         |
|--------------|---------|
| Chip/ Reel   | 4,000   |
| Inner Carton | 20,000  |
| Outer Carton | 200,000 |

## 7-4. Tearing Off Force



The force for tearing off cover tape is according to the follow table, in the arrow direction under the following conditions.

(Referenced ANSI/EIA-481-D-2008 of 4.11 standard)

| Room Temp. (°C) | Room Humidity (%) | Room atm (hPa) | Tearing Speed (mm/min) |
|-----------------|-------------------|----------------|------------------------|
| 5~35            | 45~85             | 860~1060       | 300±10                 |

| Tape Size                 | 8 mm   | 12 to 56 mm | 72 mm or Wider |
|---------------------------|--------|-------------|----------------|
| Tearing Off Force (grams) | 10~100 | 10~130      | 10~150         |

## 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.

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