

Data Sheet

Customer: _____

Product: Wire Wound Chip Inductor – SCI High Current Series

Size : 1008/1210/1812

Issued Date: 26-Jul.-2016

Edition: Ver. 3

Record of change

| Date | Ver. | Description | Page |
|--------------|------|---|------|
| 30-Sep.-2014 | 1 | | |
| 28-Aug-2015 | 2 | Add size 1008 | 4 |
| 26-Jul.-2016 | 3 | Revised operating & storage temperature range | 3 |
| | | | |

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|-----------------|---------------|---------------|------------------------|
| 30-Sep.-2014 | 30-Sep.-2014 | 30-Sep.-2014 | |
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WIRE WOUND CHIP INDUCTOR

SCI (H)SERIES

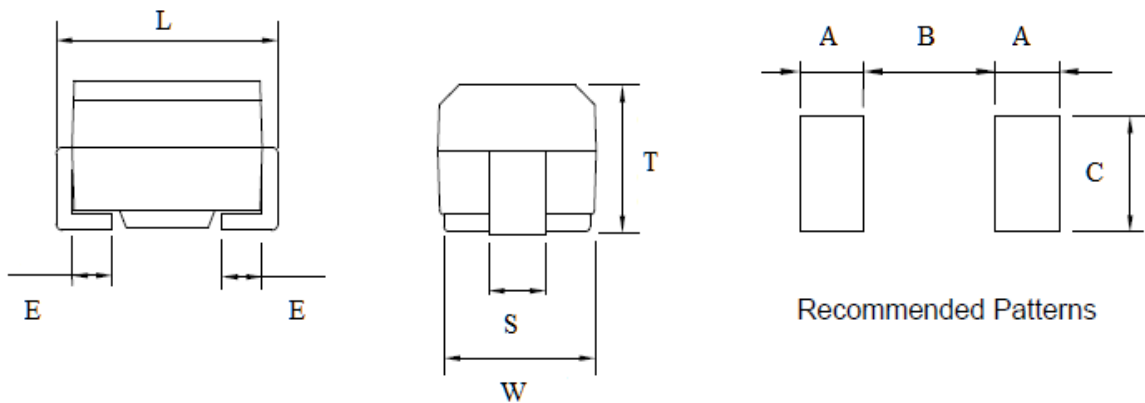
■ Introductions

The SCI (H) series are chip inductors with large current widely used in the communication applications and the other electronic devices, such as cellular phones, Television, Video Camera, Radio, Smart Meters and the other devices.

■ Features

- * Excellent solder ability and resistance to soldering heat.
- * With metal terminals and resin coated, it offers many superior features, such as highly resistant to mechanical shocks and pressure, reliable in environments of sudden temperature change and humidity and super Q characteristics.
- * Highly accurate dimensions, high reliability, and easy surface mount assembly.
- * Large current capability can be used for applications that need to meet high DC rated current.

■ Chip Dimension

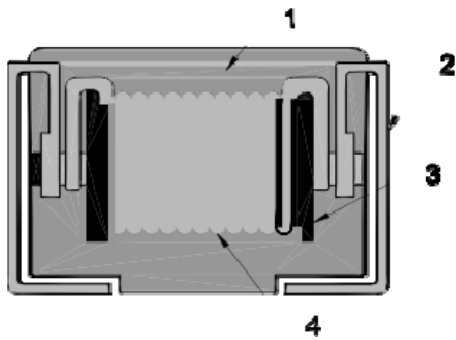


| Size | L | W | T | S | E | A | B | C | Unit (mm) |
|------------|-----------|-----------|-----------|-----------|------|------|-----|-----|-----------|
| SCI1008(H) | 2.50±0.20 | 2.00±0.0 | 2.20±0.20 | 1.80±0.10 | 0.40 | 1.0 | 1.5 | 1.0 | |
| SCI1210(H) | 3.20±0.20 | 2.50±0.20 | 2.20±0.20 | 1.90±0.10 | 0.55 | 1.20 | 2.0 | 2.0 | |
| SCI1812(H) | 4.50±0.30 | 3.20±0.30 | 3.20±0.30 | 1.90±0.10 | 1.10 | 1.50 | 3.0 | 3.0 | |

■ Part Numbering

| SCI | 1210 | H | T | 1R0 | J | □□ |
|------------|------|-----------------|--------------|-------------|-----------|---------------|
| SERIES | SIZE | MATERIAL | PACKAGE | INDUCTANCE | TOLERANCE | INTERNAL CODE |
| Wire Wound | 1008 | H =High Current | T= Tape&Reel | R10= 0.1uH | K= ±10% | |
| Molded | 1210 | | | 1R0= 1.0uH | M=±20% | |
| | 1812 | | | 330= 33uH | | |
| | | | | 331= 330 uH | | |

■ **Construction & Dimension**



| | | | |
|---|---------------|---|--------------|
| 1 | Molded resin | 3 | Ferrite Core |
| 2 | Electrode(Ag) | 4 | Magnet Wire |

■ **Operating Temperature Range:**

Operating Temperature Range is the scope of ambient temperature at which the inductors can be operated continuously at rated current includes self-temperature rise.

- * SCI1008(H) Type: -40 to +105°C
- * SCI1210(H) Type: -40 to +105°C
- * SCI1812(H) Type: -25 to +85°C

■ **Storage Temperature Range:**

Storage Temperature Range is the scope of ambient temperature at which the inductors are mounted on the circuit board already.

- * SCI1008(H) Type: -40 to +85°C
- * SCI1210(H) Type: -40 to +85°C
- * SCI1812(H) Type: -25 to +85°C

■ **Characteristics:**

Standard Test Condition:

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows:

- * Ambient Temperature: 25°C ± 2°C
- * Relative Humidity : 60% to 70%
- * AirPressure : 86 Kpa to 106 Kpa

WIRE WOUND CHIP INDUCTOR

SCI (H)SERIES

■ Electrical Specification

Size 1008 High Current Type

| Part No. | Inductance | Q | Test Freq. | Tol. | RDC(max) | IDC(max) |
|----------------------|------------|-------|------------|------|--------------|----------|
| | (μ H) | (min) | (MHz) | (%) | (Ω) | (mA) |
| SCI 1008 HT 1R0 □-□□ | 1 | 20 | 7.96 | M | 0.34 | 475 |
| SCI 1008 HT 1R5 □-□□ | 1.5 | 20 | 7.96 | M | 0.42 | 435 |
| SCI 1008 HT 2R2 □-□□ | 2.2 | 20 | 7.96 | M | 0.50 | 390 |
| SCI 1008 HT 3R3 □-□□ | 3.3 | 20 | 7.96 | M | 0.65 | 340 |
| SCI 1008 HT 4R7 □-□□ | 4.7 | 20 | 7.96 | M | 0.80 | 285 |
| SCI 1008 HT 6R8 □-□□ | 6.8 | 30 | 7.96 | M | 1.00 | 275 |
| SCI 1008 HT 100 □-□□ | 10 | 30 | 2.52 | K | 1.69 | 210 |
| SCI 1008 HT 150 □-□□ | 15 | 30 | 2.52 | K | 2.20 | 175 |
| SCI 1008 HT 220 □-□□ | 22 | 30 | 2.52 | K | 2.80 | 160 |
| SCI 1008 HT 330 □-□□ | 33 | 30 | 2.52 | K | 4.20 | 120 |

- * Tolerance: K=±10%, M=±20%
- * Operating Temperature: -40°C to +105°C
- * Inductance & Q value measured in HP4191A
- * SRF measured in 8753 Agilent
- * DC Resistance RDC measured in VP-2941A Panasonic
- * Unspecified values available on request.

WIRE WOUND CHIP INDUCTOR

SCI (H)SERIES

Size 1210 High Current Type

| Part No. | Inductance | Q | Test Freq. | Tol. | S.R.F.(min) | RDC(max) | IDC(max) |
|----------------------|------------|-------|------------|------|-------------|----------|----------|
| | (uH) | (min) | (MHz) | (%) | (MHz) | (Ω) | (mA) |
| SCI 1210 HT 1R0 □-□□ | 1 | 10 | 7.96 | M | 100 | 0.06 | 1000 |
| SCI 1210 HT 1R5 □-□□ | 1.5 | 10 | 7.96 | M | 80 | 0.11 | 830 |
| SCI 1210 HT 2R2 □-□□ | 2.2 | 10 | 7.96 | M | 68 | 0.13 | 770 |
| SCI 1210 HT 3R3 □-□□ | 3.3 | 10 | 7.96 | M | 54 | 0.16 | 690 |
| SCI 1210 HT 4R7 □-□□ | 4.7 | 10 | 7.96 | M | 46 | 0.20 | 620 |
| SCI 1210 HT 6R8 □-□□ | 6.8 | 10 | 7.96 | M | 38 | 0.27 | 530 |
| SCI 1210 HT 100 □-□□ | 10 | 15 | 2.52 | K | 30 | 0.36 | 450 |
| SCI 1210 HT 150 □-□□ | 15 | 15 | 2.52 | K | 26 | 0.56 | 370 |
| SCI 1210 HT 220 □-□□ | 22 | 15 | 2.52 | K | 21 | 0.77 | 300 |
| SCI 1210 HT 330 □-□□ | 33 | 15 | 2.52 | K | 17 | 1.10 | 240 |
| SCI 1210 HT 470 □-□□ | 47 | 15 | 2.52 | K | 14 | 1.64 | 180 |
| SCI 1210 HT 680 □-□□ | 68 | 20 | 2.52 | K | 12 | 2.80 | 140 |
| SCI 1210 HT 101 □-□□ | 100 | 20 | 2.52 | K | 10 | 3.70 | 120 |
| SCI 1210 HT 151 □-□□ | 150 | | 0.796 | K | 8 | 6.10 | 100 |
| SCI 1210 HT 221 □-□□ | 220 | | 0.796 | K | 7 | 8.40 | 80 |
| SCI 1210 HT 331 □-□□ | 330 | | 0.796 | K | 6 | 12.3 | 70 |

- * Tolerance: Tolerance: K=±10%, M=±20%
- * Operating Temperature: -40°C to +105°C
- * Inductance & Q value measured in HP4191A
- * SRF measured in 8753 Agilent
- * DC Resistance RDC measured in VP-2941A Panasonic
- * Unspecified values available on request.

WIRE WOUND CHIP INDUCTOR

SCI (H)SERIES

Size 1812 High Current Type

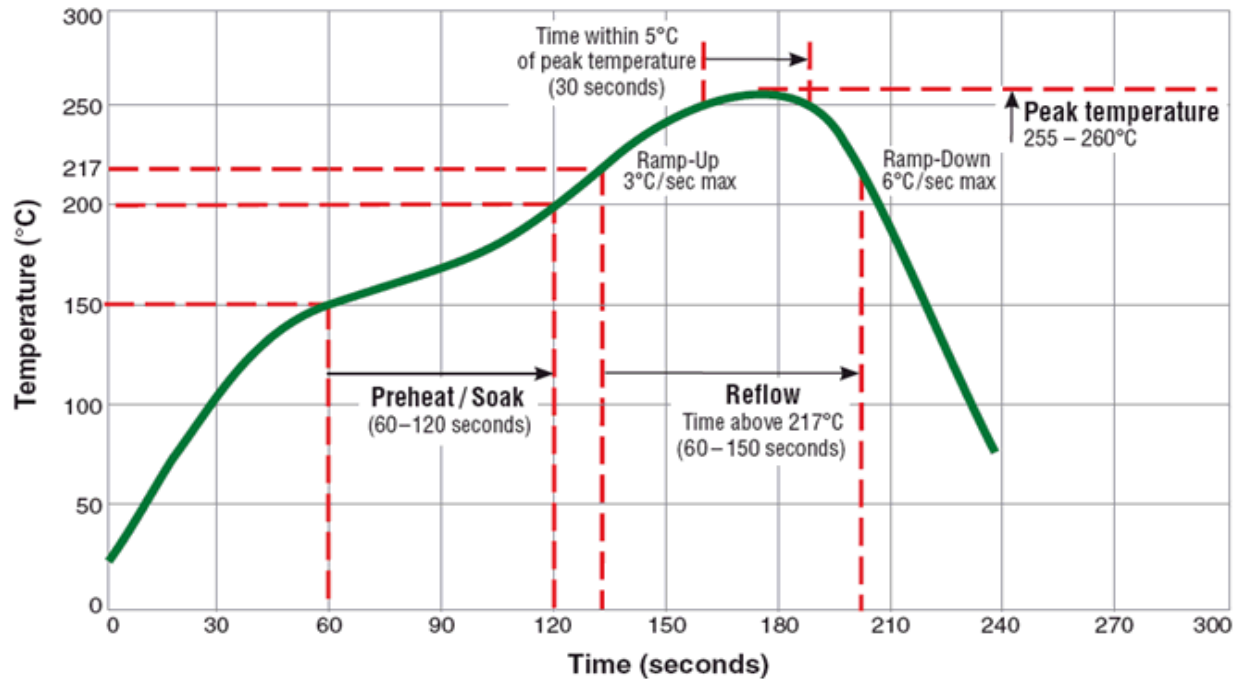
| Part No. | Inductance | Q | Test Freq. | Tol. | S.R.F.(min) | RDC(max) | IDC(max) |
|----------------------|------------|-------|------------|------|-------------|--------------|----------|
| | (μ H) | (min) | (MHz) | (%) | (MHz) | (Ω) | (mA) |
| SCI 1812 HT 1R0 □-□□ | 1.0 | 10 | 7.96 | K | 200 | 0.11 | 1050 |
| SCI 1812 HT 1R2 □-□□ | 1.2 | 10 | 7.96 | K | 160 | 0.12 | 1000 |
| SCI 1812 HT 1R5 □-□□ | 1.5 | 10 | 7.96 | K | 130 | 0.15 | 950 |
| SCI 1812 HT 1R8 □-□□ | 1.8 | 10 | 7.96 | K | 100 | 0.16 | 900 |
| SCI 1812 HT 2R2 □-□□ | 2.2 | 10 | 7.96 | K | 80 | 0.18 | 850 |
| SCI 1812 HT 2R7 □-□□ | 2.7 | 10 | 7.96 | K | 60 | 0.20 | 800 |
| SCI 1812 HT 3R3 □-□□ | 3.3 | 10 | 7.96 | K | 45 | 0.22 | 750 |
| SCI 1812 HT 3R9 □-□□ | 3.9 | 10 | 7.96 | K | 40 | 0.24 | 700 |
| SCI 1812 HT 4R7 □-□□ | 4.7 | 10 | 7.96 | K | 35 | 0.27 | 650 |
| SCI 1812 HT 5R6 □-□□ | 5.6 | 10 | 7.96 | K | 30 | 0.30 | 650 |
| SCI 1812 HT 6R8 □-□□ | 6.8 | 10 | 7.96 | K | 28 | 0.35 | 600 |
| SCI 1812 HT 8R2 □-□□ | 8.2 | 10 | 7.96 | K | 25 | 0.40 | 600 |
| SCI 1812 HT 100 □-□□ | 10 | 10 | 2.52 | K | 22 | 0.50 | 550 |
| SCI 1812 HT 120 □-□□ | 12 | 10 | 2.52 | K | 21 | 0.60 | 500 |
| SCI 1812 HT 150 □-□□ | 15 | 10 | 2.52 | K | 20 | 0.70 | 450 |
| SCI 1812 HT 180 □-□□ | 18 | 10 | 2.52 | K | 19 | 0.80 | 400 |
| SCI 1812 HT 220 □-□□ | 22 | 10 | 2.52 | K | 18 | 0.90 | 370 |
| SCI 1812 HT 270 □-□□ | 27 | 10 | 2.52 | K | 16 | 1.20 | 330 |
| SCI 1812 HT 330 □-□□ | 33 | 10 | 2.52 | K | 14 | 1.40 | 300 |
| SCI 1812 HT 390 □-□□ | 39 | 10 | 2.52 | K | 12 | 1.60 | 280 |
| SCI 1812 HT 470 □-□□ | 47 | 10 | 2.52 | K | 11.5 | 1.90 | 260 |
| SCI 1812 HT 560 □-□□ | 56 | 10 | 2.52 | K | 11 | 2.20 | 240 |
| SCI 1812 HT 680 □-□□ | 68 | 10 | 2.52 | K | 10 | 2.60 | 220 |
| SCI 1812 HT 820 □-□□ | 82 | 10 | 2.52 | K | 9 | 3.50 | 200 |
| SCI 1812 HT 101 □-□□ | 100 | 20 | 0.796 | K | 8 | 4.00 | 180 |
| SCI 1812 HT 121 □-□□ | 120 | 20 | 0.796 | K | 7.5 | 4.50 | 160 |
| SCI 1812 HT 151 □-□□ | 150 | 20 | 0.796 | K | 7 | 6.50 | 140 |
| SCI 1812 HT 181 □-□□ | 180 | 20 | 0.796 | K | 6.5 | 7.50 | 120 |
| SCI 1812 HT 221 □-□□ | 220 | 20 | 0.796 | K | 5.5 | 9.00 | 120 |
| SCI 1812 HT 271 □-□□ | 270 | 20 | 0.796 | K | 5 | 11.0 | 100 |
| SCI 1812 HT 331 □-□□ | 330 | 20 | 0.796 | K | 4 | 13.0 | 90 |
| SCI 1812 HT 391 □-□□ | 390 | 20 | 0.796 | K | 3.8 | 23.0 | 80 |
| SCI 1812 HT 471 □-□□ | 470 | 20 | 0.796 | K | 3.5 | 26 | 75 |
| SCI 1812 HT 561 □-□□ | 560 | 20 | 0.796 | K | 2.8 | 30 | 70 |
| SCI 1812 HT 681 □-□□ | 680 | 20 | 0.796 | K | 2.6 | 40 | 65 |
| SCI 1812 HT 821 □-□□ | 820 | 20 | 0.796 | K | 2.5 | 45 | 60 |

- * Tolerance: K=±10%, M=±20%
- * Operating Temperature: -25°C to +85°C
- * Inductance & Q value measured in HP4291 or HP4284
- * SRF measured in HP4291
- * DC Resistance RDC measured in Agilent 34401A
- * Unspecified values available on request.

■ **Soldering Profile**

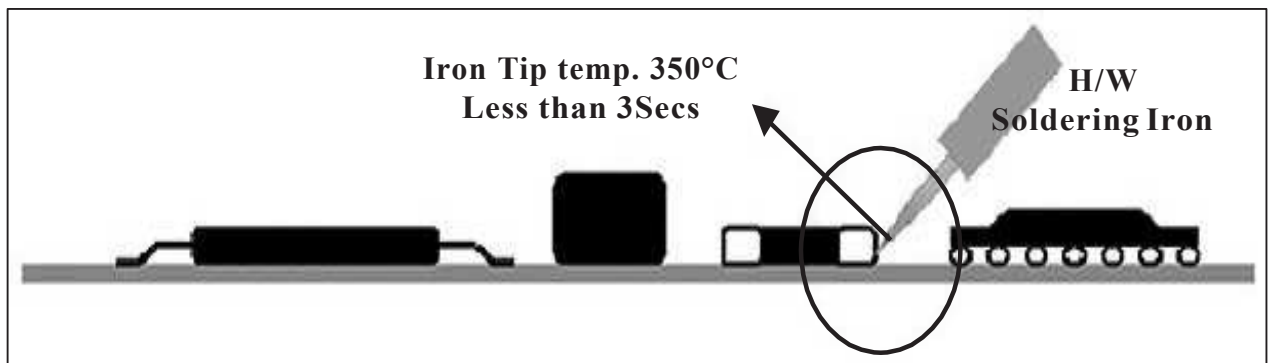
Reflow Soldering

Typical RoHS Reflow Profile



Manual Soldering

Soldering iron tip temperature: 350°C max / within 3 seconds.



WIRE WOUND CHIP INDUCTOR

SCI (H)SERIES

■ Specification & Test Method

| | ITEM | CONDITION | SPECIFICATION | | | | | | | | | | | | | | | |
|------------------------------------|--|---|--|-------------|------------------|-------------|---|-------|----|---|------|---|---|------|----|---|------|---|
| Mechanical Performance Test | Solderability | The electrodes shall be at least 90% covered with new solder coating | Lead-free inductor: after fluxing(alpha 100 or equiv), inductor shall be dipped in a melted solder bath at 245±5°C, 5±0.5 seconds | | | | | | | | | | | | | | | |
| | Resistance to Soldering Heat | Appearance: No damage | Pre-heating: 150°C, 1min. Solder Temperature: 260±5°C Immersion Time: 10±1 seconds | | | | | | | | | | | | | | | |
| | Vibration | Appearance: No damage L change: within±10% Q change: within±30% DCR: within specification | Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1 min. Amplitude: 1.5 mm Time: 2 hrs for each axis (X, Y&Z), total 6 hrs | | | | | | | | | | | | | | | |
| Electrical Performance Test | Inductance | Refer to standard electrical characteristic spec | HP4291 or HP4284 | | | | | | | | | | | | | | | |
| | Q | | HP4291 or HP4284 | | | | | | | | | | | | | | | |
| | SRF | | HP4291 | | | | | | | | | | | | | | | |
| | DC Resistance DCR | | Agilent 34401A | | | | | | | | | | | | | | | |
| | Rated Current IDC | | Applied the current to coils, The inductance change should be less than 10% to initial value | | | | | | | | | | | | | | | |
| Climatic Performance Test | Temperature Cycle | Appearance: No damage L change: within±10% Q change: within±30% DCR: within specification | One cycle: <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25±3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25±2</td> <td>3</td> </tr> <tr> <td>3</td> <td>85±3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25±2</td> <td>3</td> </tr> </tbody> </table> Total: 100 cycles Measured after exposure in the room condition for 24 hrs | Step | Temperature (°C) | Time (min.) | 1 | -25±3 | 30 | 2 | 25±2 | 3 | 3 | 85±3 | 30 | 4 | 25±2 | 3 |
| | Step | | Temperature (°C) | Time (min.) | | | | | | | | | | | | | | |
| | 1 | | -25±3 | 30 | | | | | | | | | | | | | | |
| | 2 | | 25±2 | 3 | | | | | | | | | | | | | | |
| 3 | 85±3 | 30 | | | | | | | | | | | | | | | | |
| 4 | 25±2 | 3 | | | | | | | | | | | | | | | | |
| Damp Heat with Load | Temperature: 40±2°C Relative Humidity: 90 ~ 95% Time: 1000 hrs Measured after exposure in the room condition for 24 hrs | | | | | | | | | | | | | | | | | |
| High Temperature Storage | Temperature: 85±3°C Applied Current: Rated Current Time: 1000 hrs Measured after exposure in the room condition for 24 hrs | | | | | | | | | | | | | | | | | |
| Low Temperature Storage | Temperature: -25±3°C Time: 1000 hrs Measured after exposure in the room condition for 24 hrs | | | | | | | | | | | | | | | | | |

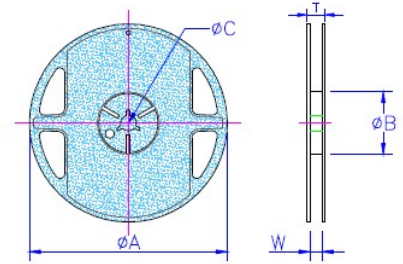
WIRE WOUND CHIP INDUCTOR

SCI (H)SERIES

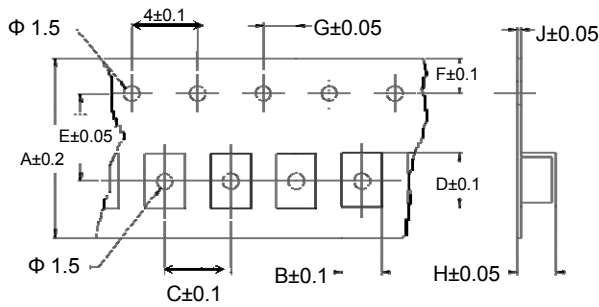
■ Packaging

Packaging Quantity & Reel Specifications

| Type | ΦA | ΦB | ΦC | W | T | Q'ty |
|------------|---------|--------|--------|----------|--------|------|
| SCI1008(H) | 178±2.0 | 60±0.5 | 13±0.3 | 9±0.3 | 12±1.0 | 2000 |
| SCI1210(H) | 178±2.0 | 60±0.5 | 13±0.3 | 9±0.3 | 12±1.0 | 2000 |
| SCI1812(H) | 178±2.0 | 80±0.5 | 13±0.3 | 13.2±0.3 | 16±1.0 | 500 |



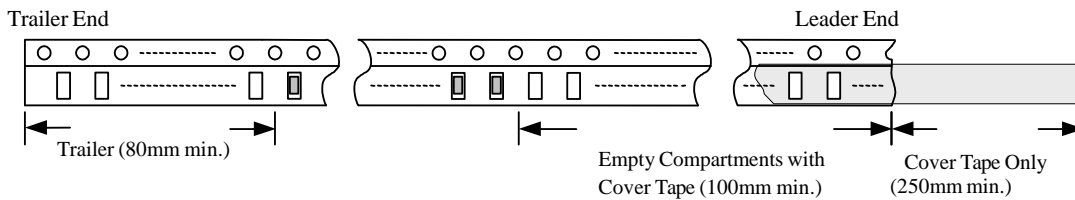
Embossed Plastic Tape Specifications



Unit: mm

| Type | A | B | C | D | E | F | G | H | J |
|------------|----|------|---|------|-----|------|---|------|------|
| SCI1008(H) | 8 | 2.70 | 4 | 3.60 | 3.5 | 1.75 | 2 | 2.40 | 0.23 |
| SCI1210(H) | 8 | 2.96 | 4 | 3.60 | 3.5 | 1.75 | 2 | 2.40 | 0.23 |
| SCI1812(H) | 12 | 3.30 | 8 | 5.00 | 5.5 | 1.75 | 2 | 3.50 | 0.30 |

Leader / Trailer Tape



Cover Tape Peel Strength

The force for tearing off cover tape is 0.1~0.6 (N) in the arrow direction at the following conditions: Temperature: 5~35°C

Humidity: 45~85%

Atmospheric Pressure: 860~1060 hpa

