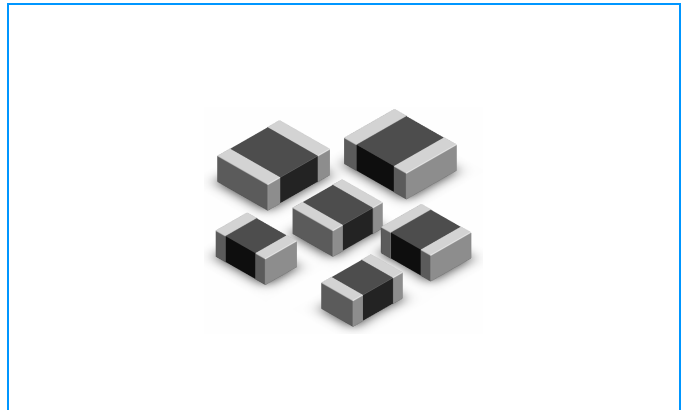


# Multilayer Chip Inductor

## SCML Series

### Features

- u Multilayer monolithic construction yields high reliability
- u Excellent solderability and heat resistance for either wave or reflow soldering.



### Applications

- u RF and wireless communication
- u Information technology equipment which includes computer
- u Telecommunications
- u Radar detectors
- u Automotive etc.

### General Technical Data

Operating temperature range	-40 ~ +85°C
Storage Condition	Less than 40°C and 70% RH
Storage Time	12 months Max.
Soldering method	Reflow or Wave Soldering

### Part Numbering

**SCML**   **2520**   **4R7**   **M**   **T**   **F**  
 (1)   (2)   (3)   (4)   (5)   (6)

- 1 Series Name
- 2 Size Code: the first two digitals: length(mm), the last two digitals : width(mm)
- 3 Inductance (R=Decimal Point)    Unit:  $\mu$ H
- 4 Tolerance: M =  $\pm 20\%$
- 5 Packaging: T - Embossed plastic tape, 7" reel.
- 6 Soldering : Green Parts, F - Lead-Free for whole chip

# Multilayer Chip Inductor

## SCML Series

### Electrical Characteristics (Continue)

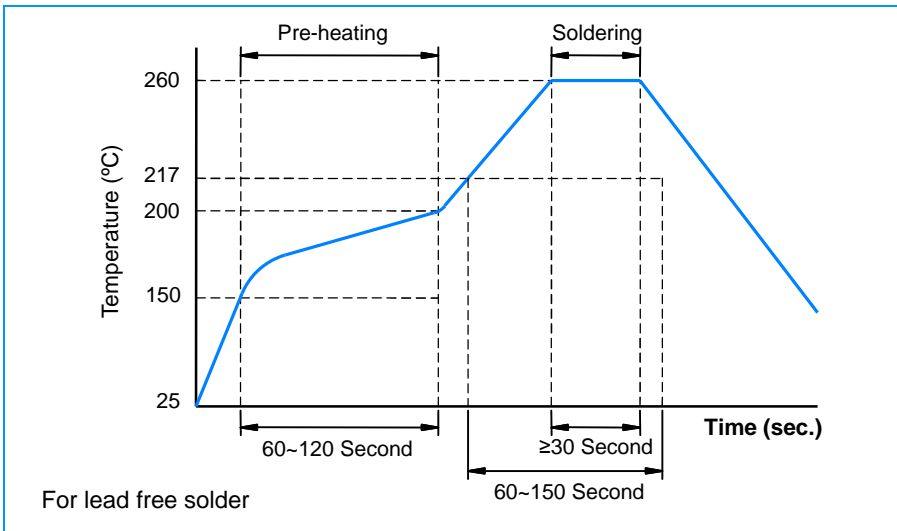
Part Number	Inductance ±10% ( $\mu$ H)	Test Freq. (MHz)	S.R.F (MHz) Min	DCR ( $\Omega$ ) Max	Rated Current (mA)
<b>2012 Series</b>					
SCML2012 2R2MTF	2.2	1	70	0.17	900
SCML2012 4R7MTF	4.7	1	40	0.23	700
<b>2016 Series</b>					
SCML2016 2R2MTF	2.2	1	40	0.12	1100
SCML2016 4R7MTF	4.7	1	20	0.16	900
<b>2520 Series</b>					
SCML2520 1R0MTF	1.0	1	60	0.055	1600
SCML2520 1R5MTF	1.5	1	50	0.070	1500
SCML2520 2R2MTF	2.2	1	40	0.080	1300
SCML2520 3R3MTF	3.3	1	30	0.100	1200
SCML2520 4R7MTF	4.7	1	25	0.110	1100
	TEST LEVEL: 100 mV				
Test Instruments	<ul style="list-style-type: none"> <li>u HP4291B RF IMPEDANCE / MATERIAL ANALYZER @1MHz</li> <li>u HP4338A/B MILLIOHMETER</li> </ul>				

\* For special part number which is not shown in above table, please refer to the appendix.

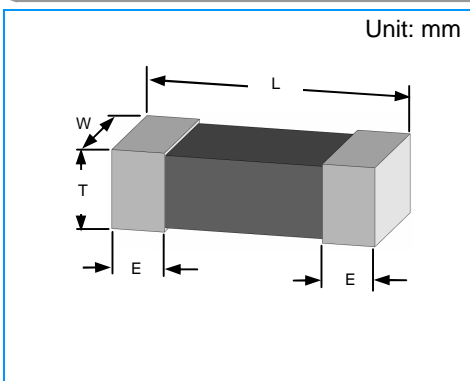
# Multilayer Chip Inductor

## SCML Series

### Recommended Soldering Conditions

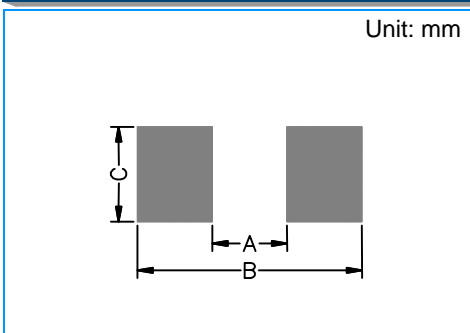


### Construction & Dimensions



Dimension	2012 (EIA 0805)	2016 (EIA 0806)	2520 (EIA 1008)
L	2.00±0.20	2.00±0.20	2.50±0.20
W	1.25±0.20	1.60±0.20	2.00±0.20
T	0.90±0.10	0.90±0.10	0.90±0.10
E	0.50±0.30	0.50±0.30	0.50±0.30

### Recommended Pad Layout

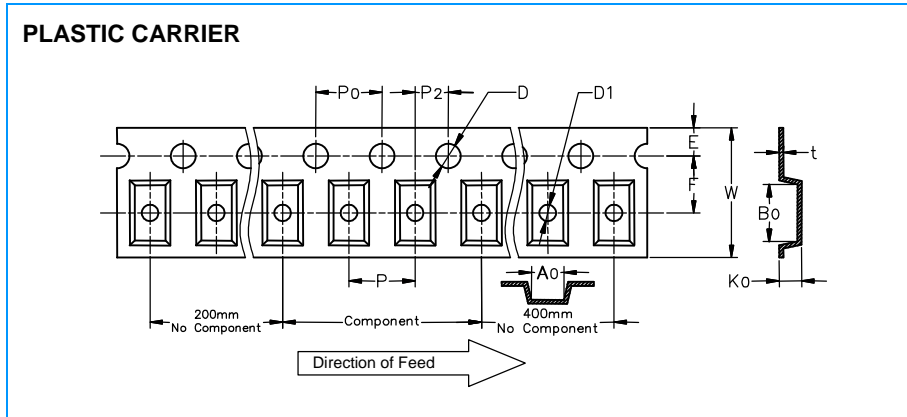


Size	A	B	C
2012	1.0~1.2	3.0~4.0	0.8~1.1
2016	1.0~1.2	3.0~4.0	1.0~1.5
2520	1.2~1.5	3.5~4.0	1.5~2.0

# Multilayer Chip Inductor

## SCML Series

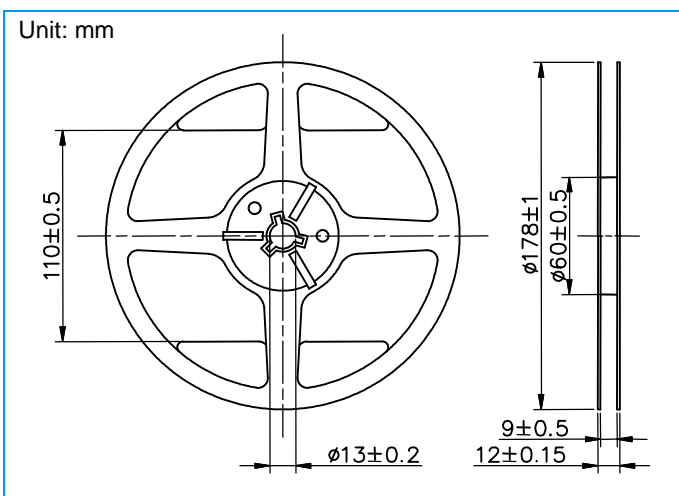
### Tape and Reel Specifications



Unit: mm

Symbol	2012	2016	2520
	E	E	E
W	8.00±0.10	8.00±0.10	8.00±0.10
P	4.00±0.10	4.00±0.10	4.00±0.10
E	1.75±0.10	1.75±0.10	1.75±0.10
F	3.50±0.05	3.50±0.10	3.50±0.05
D	1.55±0.05	1.55±0.05	1.55±0.05
D1	1.00±0.05	1.00±0.05	1.00±0.05
P	4.00±0.10	4.00±0.10	4.00±0.10
P <sub>0</sub> 10	40.00±0.20	40.00±0.20	40.00±0.20
P2	2.00±0.10	2.00±0.10	2.00±0.10
A0	1.40±0.10	1.80±0.10	2.25±0.10
B0	2.30±0.10	2.20±0.10	2.80±0.10
K0(T)	1.35±0.10	1.15±0.10	1.35±0.10
t	0.22±0.05	0.22±0.05	0.22±0.05

### Reel Specifications & Packaging



Part Size (EIA Size)	Packaging Option	Quantity
2012 (0805)	7"Reel	3,000
2016 (0806)	7"Reel	3,000
2520 (1008)	7"Reel	3,000

**The Contents of a box:**

2012 (0805): 6 reels / inner box

2016 (0806): 6 reels / inner box

2520 (1008): 6 reels / inner box

# Multilayer Chip Inductor

## SCML Series

### Reliability and Test Condition

Test item	Test condition	Criteria
<b>Resistance to Solder Heat</b>	<ol style="list-style-type: none"> <li>Solder temperature : 260±5°C</li> <li>Flux : Rosin</li> <li>DIP time : 10±1 sec</li> </ol>	<ol style="list-style-type: none"> <li>More than 95 % of terminal electrode should be covered with new solder</li> <li>No mechanical damage</li> <li>Induction value should be within ±10 % of the initial value</li> </ol>
<b>Adhesive Test</b>	<ol style="list-style-type: none"> <li>Reflow temperature : 245°C It shall be Soldered on the substrate applying direction parallel to the substrate</li> <li>Apply force(F) : 5 N</li> <li>Test time : 10 sec</li> </ol>	<ol style="list-style-type: none"> <li>No mechanical damage</li> <li>Soldering the products on PCB after the pulling test force &gt; 5 N</li> </ol>
<b>Steam Aging Test</b>	<ol style="list-style-type: none"> <li>Temperature : 93°C</li> <li>Test time : 8 hours</li> <li>Solder temperature : 235±5°C</li> <li>Flux : Rosin</li> <li>DIP time : 5±1 sec</li> </ol>	<ol style="list-style-type: none"> <li>More than 95 % of terminal electrode should be covered with new solder</li> </ol>
<b>Temperature Cycle</b>	<ol style="list-style-type: none"> <li>Temperature : -40 ~ +85°C for 30 minutes each</li> <li>Cycle : 100 cycles</li> <li>Measurement : At ambient temperature 24 hours after test completion</li> </ol>	<ol style="list-style-type: none"> <li>No mechanical damage</li> <li>Induction value should be within ±20 % of the initial value</li> </ol>
<b>Operational Life</b>	<ol style="list-style-type: none"> <li>Temperature : 85°C±5°C</li> <li>Test time : 1000 hours</li> <li>Apply current : full rated current</li> <li>Measurement : At ambient temperature 24 hours after test completion</li> </ol>	<ol style="list-style-type: none"> <li>No mechanical damage</li> <li>Induction value should be within ±10 % of the initial value</li> </ol>
<b>Biased Humidity</b>	<ol style="list-style-type: none"> <li>Temperature : 40°C±2°C</li> <li>Humidity : 90 ~ 95 % RH</li> <li>Apply current : full rated current</li> <li>Test time : 1000 hours</li> <li>Measurement : At ambient temperature 24 hours after test completion</li> </ol>	<ol style="list-style-type: none"> <li>No mechanical damage</li> <li>Induction value should be within ±20 % of the initial value</li> </ol>
<b>Rated Current</b>	At ambient temperature & humidity Test time: 5 minutes (under full rated current)	MIP product surface temp: below room temperature plus 40°C