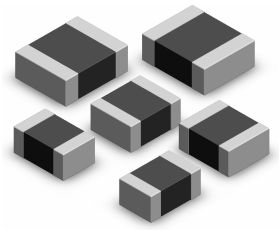
Multilayer Chip Inductor

SCML Series

Features

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



Applications

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

General Technical Data

Operating temperature range	-40 ~ +85ºC
Storage Condition	Less than 40ºC 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: μH
4 Tolerance: M = ±20%
5 Packaging: T - Embossed plastic tape, 7" reel.
6 Soldering : Green Parts, F - Lead-Free for whole chip

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Electrical Characteristics (Continue)

Part Number	Inductance ±10% (μH)	Test Freq. (MHz)	S.R.F (MHz) Min	DCR (Ω) Max	Rated Current (mA)
2012 Series					
SCML2012 2R2MTF	2.2	1	70	0.17	900
SCML2012 4R7MTF	4.7	1	40	0.23	700
2016 Series					
SCML2016 2R2MTF	2.2	1	40	0.12	1100
SCML2016 4R7MTF	4.7	1	20	0.16	900
2520 Series					
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	**u** HP4291B RF IMPEDANCE / MATERIAL ANALYZER @1MHz **u** HP4338A/B MILLIOHMMETER				

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

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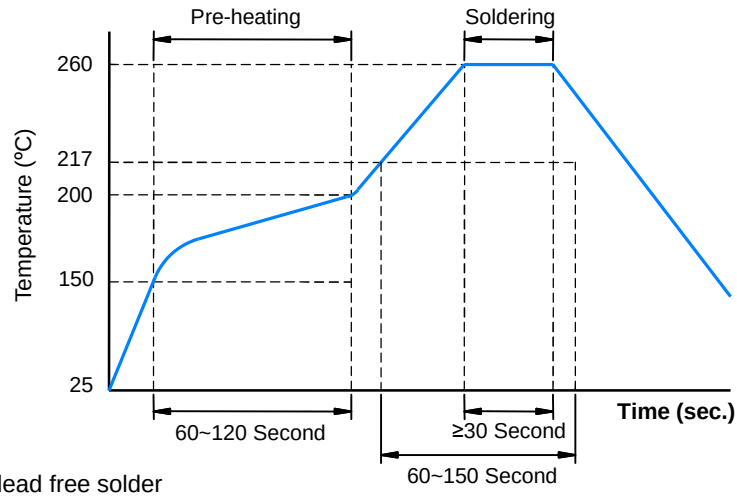
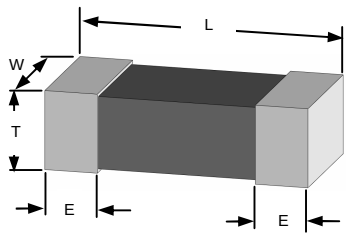
Recommended Soldering Conditions



For lead free solder

Construction & Dimensions

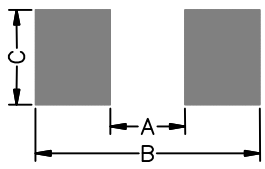
Unit: mm



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

Unit: mm



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

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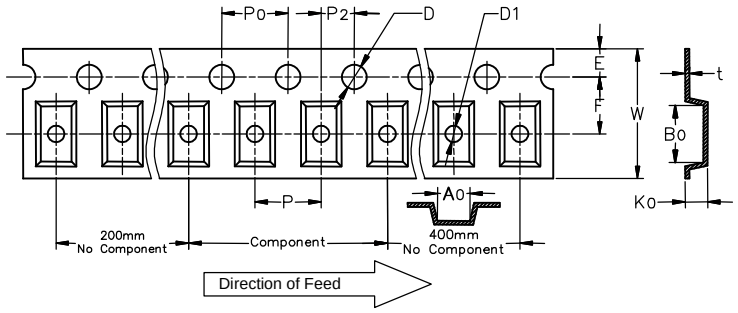
Tape and Reel Specifications

PLASTIC CARRIER

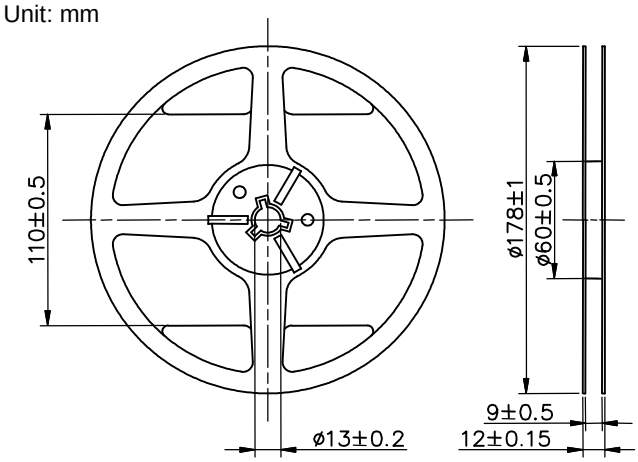


Unit: mm

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_0$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

Unit: mm



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

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Reliability and Test Condition

Test item	Test condition	Criteria
Resistance to Solder Heat	1. Solder temperature : 260±5ºC 2. Flux : Rosin 3. DIP time : 10±1 sec	1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage 3. Induction value should be within ±10 % of the initial value
Adhesive Test	1. Reflow temperature : 245ºC It shall be Soldered on the substrate applying direction parallel to the substrate 2. Apply force(F) : 5 N 3. Test time : 10 sec	1. No mechanical damage 2. Soldering the products on PCB after the pulling test force > 5 N
Steam Aging Test	1. Temperature : 93ºC 2. Test time : 8 hours 3. Solder temperature : 235±5ºC 4. Flux : Rosin 5. DIP time : 5±1 sec	1. More than 95 % of terminal electrode should be covered with new solder
Temperature Cycle	1. Temperature : -40 ~ +85ºC for 30 minutes each 2. Cycle : 100 cycles 3. Measurement : At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Induction value should be within ±20 % of the initial value
Operational Life	1. Temperature : 85ºC±5ºC 2. Test time : 1000 hours 3. Apply current : full rated current 4. Measurement : At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Induction value should be within ±10 % of the initial value
Biased Humidity	1. Temperature : 40ºC±2ºC 2. Humidity : 90 ~ 95 % RH 3. Apply current : full rated current 4. Test time : 1000 hours 5. Measurement : At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Induction value should be within ±20 % of the initial value
Rated Current	At ambient temperature & humidity Test time: 5 minutes (under full rated current)	MIP product surface temp: below room temperature plus 40ºC