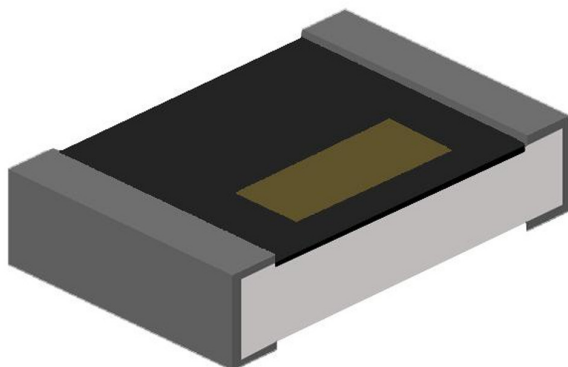


# Thin Film Chip Inductor

## AL Series



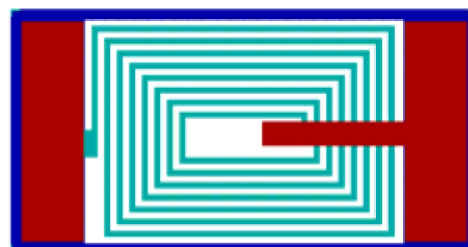
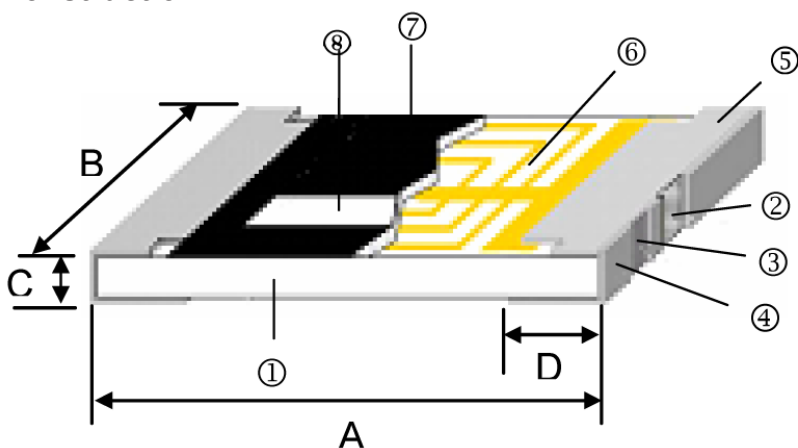
### Features

- Photolithographic single layer ceramic chip
- High SRF, excellent Q, superior temperature stability
- Tight tolerance of  $\pm 1\%$  or  $\pm 0.1\text{nH}$
- Self resonant frequency controlled within 10%
- Stable inductance in high frequency circuit
- Highly stable design for critical needs

### Applications

- Cellular Telephone, Pagers and GPS Products
- VCO, TCXO Circuit and RF Transceiver Module
- Wireless LAN, Bluetooth Module, Communication Appliances

### Construction



①	Alumina Substrate	⑤	Edge Electrode
②	Inner Electrode (Ni-Cr)	⑥	Cu Circuits
③	Barrier Layer (Ni)	⑦	Overcoat
④	External Electrode (Sn)	⑧	Marking

### Dimensions

Size (Inch)	A	B	C	D	Weight (g) (1,000pcs)
0201	$0.6 \pm 0.05$	$0.3 \pm 0.05$	$0.23 \pm 0.05$	$0.15 \pm 0.05$	0.3
0402	$1 \pm 0.05$	$0.5 \pm 0.05$	$0.32 \pm 0.05$	$0.2 \pm 0.1$	0.9

Dimensions: mm

# Thin Film Chip Inductor

## AL Series



### Standard Electrical Specifications

Chip Inductors / High Current Type					
Inductance (nH)	Inductance Tolerance (nH or %)	Quality Factor min.	SRF (GHz) min.	DCR ( $\Omega$ ) max.	IDC (mA) max.
0.1	±0.1, 0.2, 0.3nH	10 / 500MHz	6	0.05	600
0.2					
0.3					
0.4				0.1	
0.5					
0.6					
0.7					
0.8					
0.9					
1				0.15	
1.1					
1.2					
1.3				0.20	
1.4					
1.5					
1.6				0.25	
1.7					
1.8					
1.9				0.30	
2					
2.1					
2.2				0.35	
2.3					
2.4					
2.5					
2.6					
2.7					
2.8				0.50	
2.9					
3					
3.1					
3.2					
3.3					
					400

# Thin Film Chip Inductor

## AL Series



Inductance (nH)	Inductance Tolerance (nH or %)	Quality Factor min.	SRF (GHz) min.	DCR ( $\Omega$ ) max.	IDC (mA) max.
3.4	±0.1, 0.2, 0.3nH	10 / 500MHz	6	0.80	350
3.5					
3.6					
3.7					
3.8					
3.9					
4					
<b>Chip Inductors / Standard Type</b>					
0.2	±0.1, 0.2, 0.3nH	13 / 500MHz	14	0.1	800
0.3				0.15	700
0.4					
0.5			12	0.25	560
0.8					
0.9					
1.1			8	0.35	440
1.2					
1.3					
1.4					
1.6					
1.7					
1.8					
1.9					
2.0					
2.1					
2.3			6	0.45	380
2.4					
2.5					
2.6					
2.7					
2.8					
2.9			0.55		
3.0					
3.1					
3.2					
3.4					
3.5					
3.6					

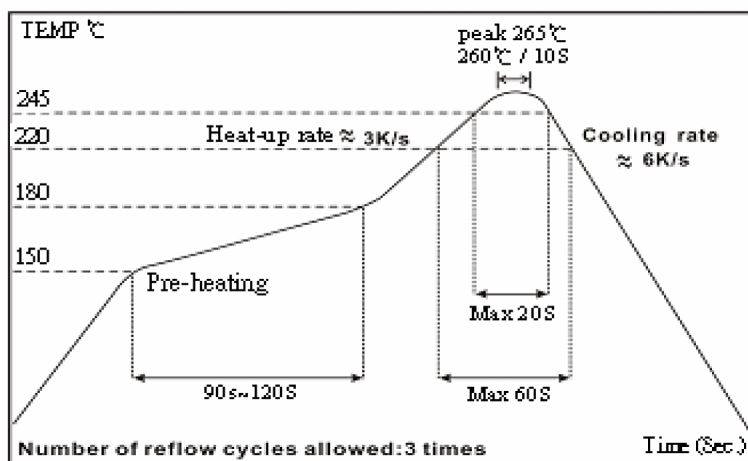
# Thin Film Chip Inductor

## AL Series



Inductance (nH)	Inductance Tolerance (nH or %)	Quality Factor min.	SRF (GHz) min.	DCR ( $\Omega$ ) max.	IDC (mA) max.		
3.7	$\pm 0.1, 0.2, 0.3\text{nH}$	13 / 500MHz	6	0.55	340		
3.8							
3.9							
4.3				0.65	320		
5.4							
5.6				0.85	280		
5.9							
6.5			1.05	260			
7.2							
8.0			$\pm 1, 2, 3, 5\%$	13 / 500MHz	5.5	1.25	220
8.1							
9.1							
10.8	4.5	1.35			200		
12.0							
13.8	3.7	1.55			180		
17.0							
18.0	3.1	1.75			100		
20.8							
27.0	2.8	2.15			90		
	2.5	2.55	75				

### Reflow



# Thin Film Chip Inductor

## AL Series



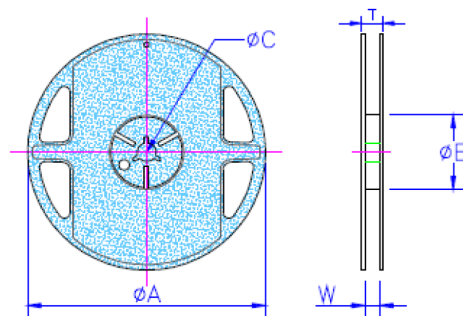
### Environmental Characteristics

Item	Requirement	Test Method
Inductance	As Spec.	Measuring equipment and fixture: 0201: HP4287 + Agilent 16196C 0402: HP4287 + Agilent 16196B
Insulation Resistance	> 1,000MΩ	Apply 100V DC for 1minute
Damp Heat with Load	$\Delta L \leq 10\%$	40 ± 2°C, 90 ~ 95% R.H. Max. working voltage for 1,000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Bending Strength	As Spec.	Bending Amplitude 3mm for 10 seconds
Solderability	95% min. coverage	245 ± 5°C for 3 seconds
Resistance to Soldering Heat	$\Delta L \leq 10\%$	260 ± 5°C for 10 seconds
Dielectric Withstand Voltage	> 100V	Apply 100VA (rms) for 1minute
High Temperature Exposure	$\Delta L \leq 10\%$	85 ± 2°C, 1,000 +48/-0 hours
Low Temperature Storage		-40 ± 3°C, 1,000 +48/-0 hours
Temperature Cycle		-40 / RT / 85 / RT, 10 cycles

Reference Standards: MIL-STD-202F, JIS-C 5201-1  
Storage Temperature : 25 ± 3°C; Humidity < 80%RH

### Packaging

#### Reel Specifications & Packaging Quantity



Size (Inch)	$\psi A$	$\psi B$	$\psi C$	W	T	Quantity (EA)
0201	178 ± 1.0	60 + 1	13.5 ± 0.7	9.5 ± 1	11.5 ± 1	10,000
0402						

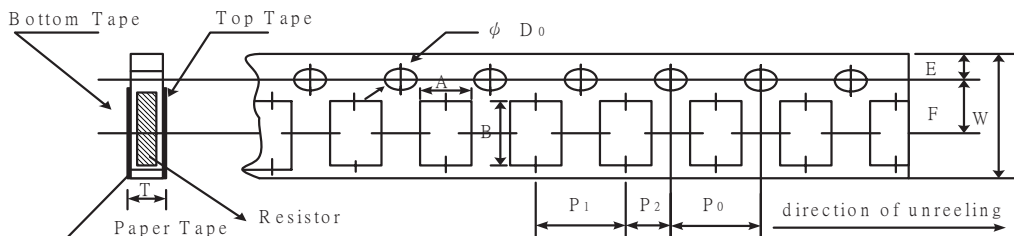
Dimensions: mm

# Thin Film Chip Inductor

## AL Series



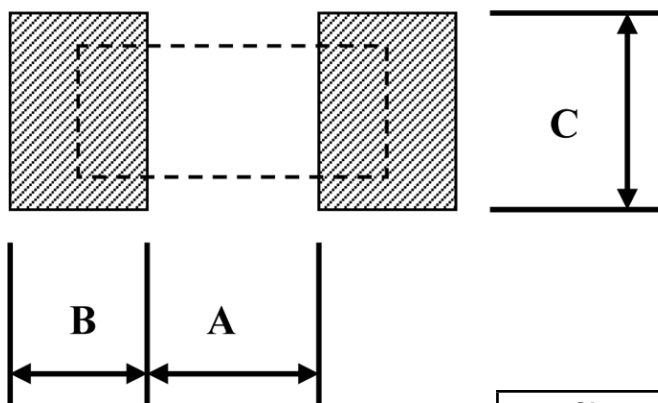
### Paper Tape Specifications



Size (Inch)	A	B	W	E	F	P0	P1	P2	$\psi D0$	T
0201	$0.4 \pm 0.05$	$0.7 \pm 0.05$	$8 \pm 0.1$	$1.75 \pm 0.05$	$3.5 \pm 0.05$	$4 \pm 0.1$	$2 \pm 0.05$	$2 \pm 0.05$	$1.55 \pm 0.03$	$0.42 \pm 0.02$
0402	$0.7 \pm 0.05$	$1.16 \pm 0.05$							$1.55 \pm 0.05$	$0.4 \pm 0.03$

Dimensions: mm

### Recommend Land Pattern



Size (Inch)	A	B	C
0201	0.3	0.25	$0.3 \pm 0.2$
0402	0.5	0.45	$0.6 \pm 0.2$

Dimensions: mm



# Thin Film Chip Inductor

## AL Series



### Part Number Table

Description	Part Number
Inductor, 0402, 0.2nH	MCFT0BT0N2
Inductor, 0402, 0.3nH	MCFT0BT0N3
Inductor, 0402, 0.4nH	MCFT0BT0N4
Inductor, 0402, 0.5nH	MCFT0BT0N5
Inductor, 0402, 0.8nH	MCFT0BT0N8
Inductor, 0402, 0.9nH	MCFT0BT0N9
Inductor, 0402, 1.1nH	MCFT0BT1N1
Inductor, 0402, 1.2nH	MCFT0BT1N2
Inductor, 0402, 1.3nH	MCFT0BT1N3
Inductor, 0402, 1.4nH	MCFT0BT1N4
Inductor, 0402, 1.6nH	MCFT0BT1N6
Inductor, 0402, 1.7nH	MCFT0BT1N7
Inductor, 0402, 1.8nH	MCFT0BT1N8
Inductor, 0402, 1.9nH	MCFT0BT1N9
Inductor, 0402, 2.0nH	MCFT0BT2N0
Inductor, 0402, 2.1nH	MCFT0BT2N1
Inductor, 0402, 2.3nH	MCFT0BT2N3
Inductor, 0402, 2.4nH	MCFT0BT2N4
Inductor, 0402, 2.5nH	MCFT0BT2N5
Inductor, 0402, 2.6nH	MCFT0BT2N6
Inductor, 0402, 2.7nH	MCFT0BT2N7
Inductor, 0402, 2.8nH	MCFT0BT2N8
Inductor, 0402, 2.9nH	MCFT0BT2N9
Inductor, 0402, 3.0nH	MCFT0BT3N0
Inductor, 0402, 3.1nH	MCFT0BT3N1
Inductor, 0402, 3.2nH	MCFT0BT3N2
Inductor, 0402, 3.4nH	MCFT0BT3N4
Inductor, 0402, 3.5nH	MCFT0BT3N5
Inductor, 0402, 3.6nH	MCFT0BT3N6
Inductor, 0402, 3.7nH	MCFT0BT3N7
Inductor, 0402, 3.8nH	MCFT0BT3N8
Inductor, 0402, 3.9nH	MCFT0BT3N9
Inductor, 0402, 4.3nH	MCFT0BT4N3
Inductor, 0402, 5.4nH	MCFT0BT5N4

# Thin Film Chip Inductor

## AL Series



Inductor, 0402, 5.6nH	MCFT0BT5N6
Inductor, 0402, 5.9nH	MCFT0BT5N9
Inductor, 0402, 6.5nH	MCFT0BT6N5
Inductor, 0402, 7.2nH	MCFT0BT7N2
Inductor, 0402, 8.0nH	MCFT0BT8N0
Inductor, 0402, 8.1nH	MCFT0BT8N1
Inductor, 0402, 9.1nH	MCFT0BT9N1
Inductor, 0402, 10.8nH	MCFT0FT10N8
Inductor, 0402, 12.0nH	MCFT0FT12N
Inductor, 0402, 13.8nH	MCFT0FT13N8
Inductor, 0402, 17.0nH	MCFT0FT17N
Inductor, 0402, 18.0nH	MCFT0FT18N
Inductor, 0402, 20.8nH	MCFT0FT20N8
Inductor, 0402, 27.0nH	MCFT0FT27N
High Current Inductor, 0201, 0.1nH	MCFT0BT0N101
High Current Inductor, 0201, 0.2nH	MCFT0BT0N201
High Current Inductor, 0201, 0.3nH	MCFT0BT0N301
High Current Inductor, 0201, 0.4nH	MCFT0BT0N401
High Current Inductor, 0201, 0.5nH	MCFT0BT0N501
High Current Inductor, 0201, 0.6nH	MCFT0BT0N601
High Current Inductor, 0201, 0.7nH	MCFT0BT0N701
High Current Inductor, 0201, 0.8nH	MCFT0BT0N801
High Current Inductor, 0201, 0.9nH	MCFT0BT0N901
High Current Inductor, 0201, 1.0nH	MCFT0BT1N001
High Current Inductor, 0201, 1.1nH	MCFT0BT1N001
High Current Inductor, 0201, 1.2nH	MCFT0BT1N201
High Current Inductor, 0201, 1.3nH	MCFT0BT1N301
High Current Inductor, 0201, 1.4nH	MCFT0BT1N401
High Current Inductor, 0201, 1.5nH	MCFT0BT1N501
High Current Inductor, 0201, 1.6nH	MCFT0BT1N601
High Current Inductor, 0201, 1.7nH	MCFT0BT1N701
High Current Inductor, 0201, 1.8nH	MCFT0BT1N801
High Current Inductor, 0201, 1.9nH	MCFT0BT1N901
High Current Inductor, 0201, 2.0nH	MCFT0BT2N001
High Current Inductor, 0201, 2.1nH	MCFT0BT2N101
High Current Inductor, 0201, 2.2nH	MCFT0BT2N201
High Current Inductor, 0201, 2.3nH	MCFT0BT2N301



# Thin Film Chip Inductor

## AL Series



High Current Inductor, 0201, 2.4nH	MCFT0BT2N401
High Current Inductor, 0201, 2.5nH	MCFT0BT2N501
High Current Inductor, 0201, 2.6nH	MCFT0BT2N601
High Current Inductor, 0201, 2.7nH	MCFT0BT2N701
High Current Inductor, 0201, 2.8nH	MCFT0BT2N801
High Current Inductor, 0201, 2.9nH	MCFT0BT2N901
High Current Inductor, 0201, 3.0nH	MCFT0BT3N001
High Current Inductor, 0201, 3.1nH	MCFT0BT3N101
High Current Inductor, 0201, 3.2nH	MCFT0BT3N201
High Current Inductor, 0201, 3.3nH	MCFT0BT3N301
High Current Inductor, 0201, 3.4nH	MCFT0BT3N401
High Current Inductor, 0201, 3.5nH	MCFT0BT3N501
High Current Inductor, 0201, 3.6nH	MCFT0BT3N601
High Current Inductor, 0201, 3.7nH	MCFT0BT3N701
High Current Inductor, 0201, 3.8nH	MCFT0BT3N801
High Current Inductor, 0201, 3.9nH	MCFT0BT3N901
High Current Inductor, 0201, 4.0nH	MCFT0BT4N001

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