

Type 3671 Series

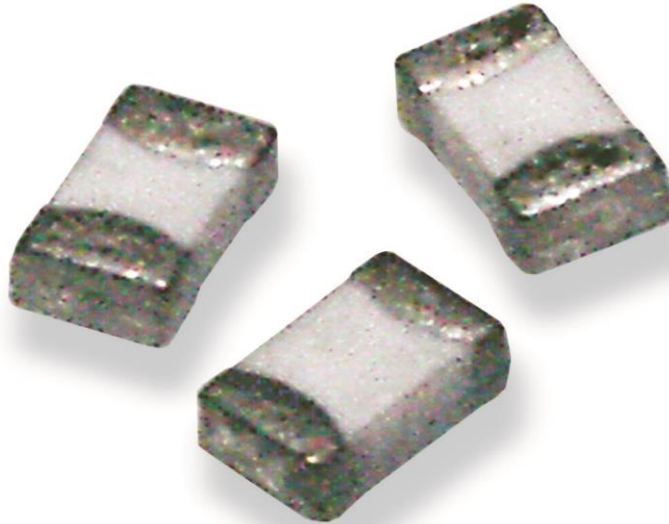
Key Features

Frequency to 10GHz

Four sizes available

Supplied on tape

Available via distribution



Applications

Cellular 'phones

WLAN

High Speed Communication Devices

TE Connectivity is pleased to introduce this highly reliable and versatile range of ceramic chip inductors which will meet your high frequency design requirements. The 3671 chip inductors have a ceramic material construction that extends the effective frequency range to 10 GHz, and are available in four compact sizes

Characteristics Electrical 0201

Part No.	Inductance (nH) @100 MHz	Q min 100 Hz	Q Typical 800 MHz	SRF (MHz) Minimum	RDC (Ω) Max.	IDC (mA) Max.	Tolerance
36711H1N0S	1.0	4	19	10000	0.14	250	S
36711H1N2S	1.2				0.18	230	
36711H1N5S	1.5				0.19	200	
36711H1N8S	1.8			0.22			
36711H2N2S	2.2	5	20	8800	0.25	180	S / K
36711H2N7S	2.7			7700	0.30		
36711H3N3S	3.3			6700	0.40	170	
36711H3N9S	3.9			6000			
36711H4N7S	4.7			5300		150	
36711H4N7S	5.1			5000			
36711H5N6S	5.6			4200			

Part No.	Inductance (nH) @100 MHz	Q min 100 Hz	Q Typical 800 MHz	SRF (MHz) Minimum	RDC (Ω) Max.	IDC (mA) Max.	Tolerance
36711H6N8J	6.8	5	20	3500	0.50	150	J / K
36711H8N2J	8.2			3200	0.55		
36711H10NJ	10		19	2800	0.65		
36711H12NJ	12		18	2400	0.70	100	
36711H15NJ	15			2200	0.80		
36711H18NJ	18			2100	0.90		
36711H22NJ	22			1800	1.20		
36711H27NJ	27		16	1700	1.80	50	
36711H33NJ	33		14	1500	2.10		
36711H39NJ	39		14	1500	2.40		
36711H47NJ	47	8	13	1300	2.80		

Characteristics Electrical 0402

Part No.	Inductance (nH) @100 MHz	Q min 100 Hz	Q Typical 800 MHz	SRF (MHz) Minimum	RDC (Ω) Max.	IDC (mA) Max.	Tolerance		
36711E1N0S	1.0	8	43	10000	0.12	300	S		
36711E1N1S	1.1				0.13				
36711E1N2S	1.2				41			6000	0.14
36711E1N3S	1.3								0.16
36711E1N5S	1.5				36			6000	0.17
36711E1N6S	1.6		0.19						
36711E1N8S	1.8		0.22						
36711E2N0S	2.0		37	4000	0.24				
36711E2N2S	2.2				0.27				
36711E2N4S	2.4				35			4000	0.32
36711E2N7S	2.7								0.37
36711E3N0S	3.0		34	3900	0.42				
36711E3N3S	3.3				0.50				
36711E3N6S	3.6		31	3200	0.55				
36711E3N9S	3.9				0.65				
36711E4N3S	4.3		30	2000	0.80				
36711E4N7S	4.7				0.80				
36711E5N1S	5.1		30	1600	0.80				
36711E5N6S	5.6				0.80				
36711E6N2J	6.2		30	1600	0.80				
36711E6N8J	6.8	0.80							
36711E8N2J	8.2	30	1600	0.80					
36711E10NJ	10			0.80					
36711E12NJ	12	30	1600	0.80					
36711E15NJ	15			0.80					
36711E18NJ	18	30	1600	0.80					
36711E22NJ	22			0.80					

Part No.	Inductance (nH) @100 MHz	Q min 100 Hz	Q Typical 800 MHz	SRF (MHz) Minimum	RDC (Ω) Max.	IDC (mA) Max.	Tolerance
36711E27NJ	27	8	28	1400	0.90	300	J
36711E33NJ	33		26	1200	1.00		
36711E39NJ	39		24	1100	1.20		
36711E47NJ	47		23	900	1.30		
36711E56NJ	56		21	750	1.40		
36711E68NJ	68		19				
36711E82NJ	82		16	600	1.60		
36711ER10J	100		-				
36711ER12J	120		-			200	

Characteristics Electrical 0603

Part No.	Inductance (nH) @100 MHz * at 50 MHz	Q min 100 Hz * at 50 MHz	Q Typical 800 MHz	SRF (MHz) Minimum	RDC (Ω) Max.	IDC (mA) Max.	Tolerance
36711J1N2S	1.2	8	47	6000	0.10	1000	S
36711J1N5S	1.5		55				
36711J1N8S	1.8		49				
36711J2N2S	2.2	10	48		0.13		
36711J2N7S	2.7		51				
36711J3N3S	3.3		48				
36711J3N9S	3.9		46				
36711J4N7S	4.7		4000	48	0.20		
36711J5N6S	5.6			48			
36711J6N8J	6.8		50	3500	0.28	600	J
36711J8N2J	8.2		47	3200	0.30		
36711J10NJ	10		45	2600	0.35		
36711J12NJ	12		48	2300	0.40		
36711J15NJ	15	47	2000	0.45			
36711J18NJ	18	49	1600	0.50			
36711J22NJ	22	47	1400	0.55			
36711J27NJ	27	46	1200	0.60			
36711J33NJ	33		1100	0.65			
36711J39NJ	39	12	900	0.70	500		
36711J47NJ	47					39	
36711J56NJ	56		37	0.75			
36711J68NJ	68		36	700	0.85	400	
36711J82NJ	82		29	600	0.95	300	
36711JR10J	100		16	1.00			
36711JR12J	*120		17	500	1.20		
36711JR15J	*150		-	400	1.30		
36711JR18J	*180		-				
36711JR22J	*220		-				
36711JR27J	*270	-	1.50				

Characteristics Electrical 0805

Part No.	Inductance (nH) @100 MHz * at 50 MHz	Q min 100 Hz * at 50 MHz	Q Typical 800 MHz	SRF (MHz) Minimum	RDC (Ω) Max.	IDC (mA) Max.	Tolerance
36712A1N5S	1.5	10	61	4000	0.10	300	S
36712A1N8S	1.8		55				
36712A2N2S	2.2		53				
36712A2N7S	2.7	12	56	0.13			
36712A3N3S	3.3		47				
36712A3N9S	3.9		54	0.15			
36712A4N7S	4.7	15	55	3500	0.20		
36712A5N6S	5.6		60	3200	0.23		
36712A6N8J	6.8		63	2800	0.25		
36712A8N2J	8.2	15	62	2400	0.28		
36712A10NJ	10		60	2100	0.30		
36712A12NJ	12			1900	0.35		
36712A15NJ	15	63	1600	0.40			
36712A18NJ	18		1500	0.45			
36712A22NJ	22	18	60	1400	0.50		
36712A27NJ	27		58	1300	0.55		
36712A33NJ	33		55	1200	0.60		
36712A39NJ	39	18	47	1000	0.65		
36712A47NJ	47		43	900	0.70		
36712A56NJ	56		39	800	0.75		
36712A68NJ	68	18	30	700	0.80		
36712A82NJ	82		-	-	600	0.90	
36712AR10J	100				*13	-	500
36712AR12J	*120	1.00					
36712AR15J	*150	400	1.10				
36712AR18J	*180		350	1.20			
36712AR22J	*220	*12		300	1.30		
36712AR27J	*270		250		1.40		
36712AR33J	*330	*10		200	1.30		
36712AR39J	*390		1.50				
36712AR47J	470						

Temperature rise should be less than 25°C and inductance change should be less than ±5% when rated current is applied.

Measuring Method / Condition

☑ Test Instrument:

L, Q: Agilent 4291B Impedance Analyzer
 Agilent 16192 (For 0805/0603)
 Agilent 16196B (For 0402)

Osc. Level: 500mV

SRF: Agilent N5230A Network Analyzer

RDC: Agilent 34401A

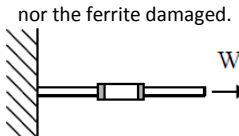
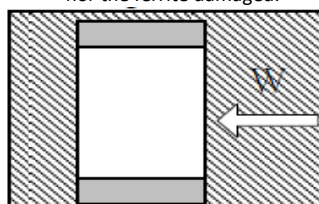
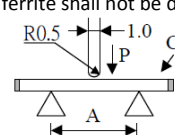
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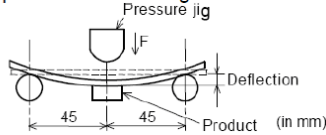
< Unless otherwise specified >

Temperature: 15°C to 35°C Humidity: 25% to 85% RH

< In case of doubt >

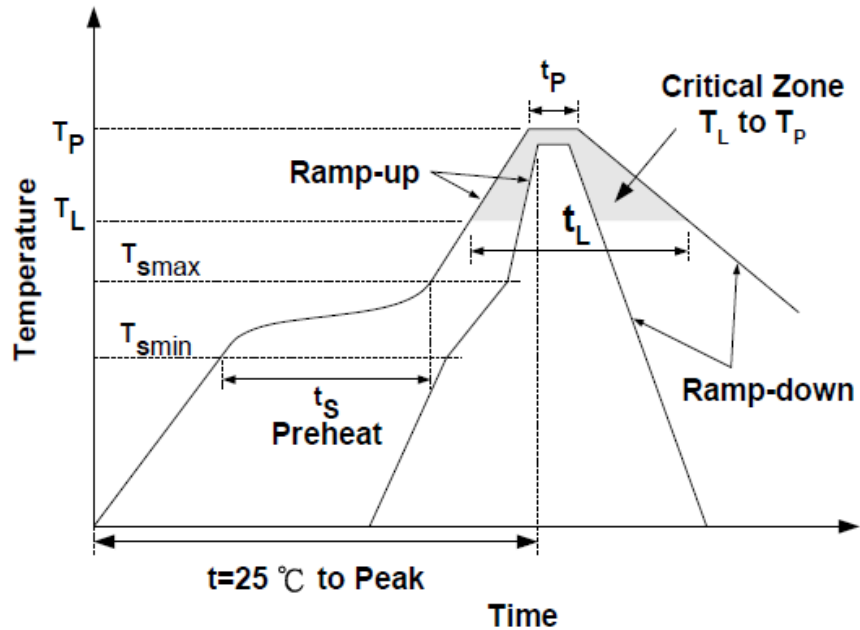
Temperature: 25°C ± 2°C Humidity: 60% to 70% RH

Mechanical Performance Test				
Item	Specification	Test Condition		
Solderability	More than 90% of the terminal electrode shall be covered with fresh solder.	Solder: 96.5Sn-3.0Ag-0.5Cu Solder Temperature: 245 ± 5°C Flux: Rosin Dip Time: 3 ± 1 Seconds		
Soldering Heat Resistance	The chip shall not crack. More than 75% of the terminal electrode shall be covered with solder.	Solder: 96.5Sn-3.0Ag-0.5Cu Solder temperature : 260 ± 5°C Flux: Rosin Dip time: 10 ± 1 seconds		
Terminal Strength	The terminal electrode shall not be broken off nor the ferrite damaged. 	TYPE	W(KGF)	TIME (SEC)
		0603	0.2	10 ± 5
		0805	0.6	30 ± 5
Terminal Strength	The terminal electrode shall not be broken off nor the ferrite damaged. 	TYPE	W(KGF)	TIME (SEC)
		0402	0.75	10 ± 5
		0603 0805	1.0	
Bending Strength	No mechanical damage. The ferrite shall not be damaged. 	TYPE	A(MM)	P(KGF)
		0402	0.4	0.6
		0603 0805	1.0 1.4	

Bending Test	<p>Appearance: No damage</p> 	<p>Substrate: PCB(100mm×40mm×1.6mm) Solder: Reflow Speed of Applying Force: 0.5mm / s Deflection: 2mm Hold Duration: 30 s</p>
Vibration	<p>Impedance shall be within $\pm 20\%$ of the initial value. There shall be no mechanical damage.</p>	<p>The sample shall be soldered onto the printed circuit board and when a vibration having an amplitude of 1.52mm and a frequency of from 10 to 55Hz/1 minute repeated should be applied to the 3 directions (X,Y,Z) for 2 hours each</p>
Drop shock	<p>No apparent damage</p>	<p>Dropped onto printed circuit board from 100cm height three times in x, y, z directions. The terminals shall be protected.</p>

Climatic test		
ITEM	SPECIFICATION	TEST CONDITION
Thermal Shock (Temperature Cycle)	Impedance shall be within $\pm 20\%$ of the initial value.	Temperature: -55°C~125°C for 30 minutes each 100 cycles.
Humidity Resistance		Temperature : 60°C Humidity: 95% RH Time: 1000 \pm 12 Hours
High Temperature Resistance		Temperature : 85°C \pm 2°C Time: 1000 \pm 12 Hours
Low Temperature Resistance		Temperature : -40°C \pm 2°C Time: 1000 \pm 12 Hours
<p>1. Operating Temperature Range: -55 °C TO +125°C 2. Storage Condition: The temperature should be within -40°C~85°C and humidity should be less than 75% RH. The product should be used within 6 months from the time of delivery.</p>		

Recommended Reflow solder Profile



Profile Feature		Pb-Free
Preheat	t_s	60~180 seconds
	T_{smin}	150°C
	T_{smax}	200°C
Average ramp-up rate (T_{smax} to T_p)		3°C/second max.
Time main above	Temperature (T_L)	217°C
	Time (t_L)	60~150 seconds
Peak temperature (T_p)		250~260°C
Time within 5 °C of actual peak temperature (t_p)		10 seconds
Ramp-down rate		6°C/sec max.
Time 25°C to peak temperature		8 minutes max.

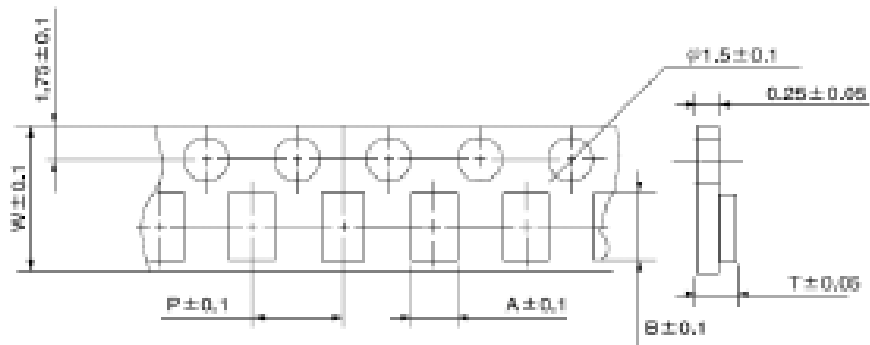
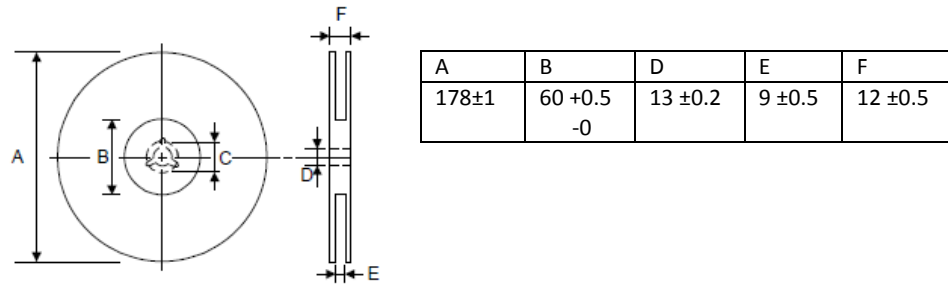
Packaging

Peel-Off Force



The force for peeling off cover tape is 10 grams in the arrow direction.

Dimension (Unit: mm)



Size	A	B	W	P	T	Chips / Reel
0201	0.38 ±0.03	0.68 ±0.03	8.00 ±0.20	2.00 ±0.10		15,000
0402	0.6	1.1	8.0	2.0	1.0	10,000
0603	1.1	1.9	8.0	4.0	1.1	4,000
0805	1.5	2.3	8.0	4.0	1.3	4,000

How To Order

Common Part	Size	Inductance Code	Tolerance
3671	1H - 0201 1E - 0402 1J - 0603 2A - 0805	See above tables	S - ±0.3nH J - ±5% K - ±10%