

Type 3671 Series

Key Features

Frequency to 10GHz

Four sizes available

Supplied on tape

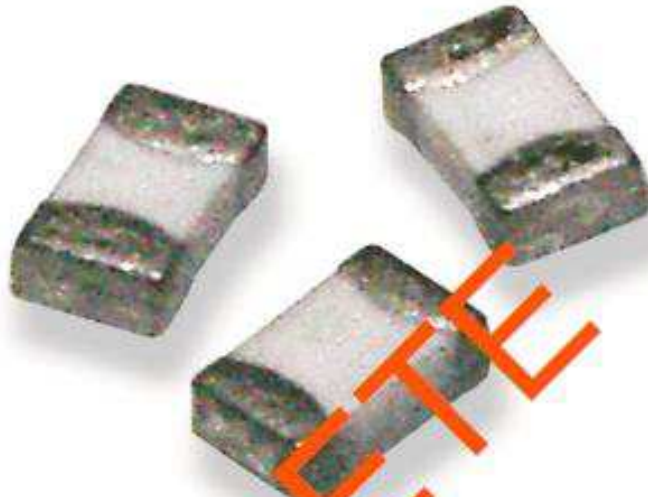
Available via distribution

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
36711H1N05	1.0	4	19	10000	0.14	250	S
36711H1N25	1.2				0.18	230	
36711H1N55	1.5				0.19	200	
36711H1N85	1.8				0.22		
36711H2N25	2.2	5	20	8800		0.25	180
36711H2N75	2.7			7700	0.30	170	
36711H3N35	3.3			0.40	6700	150	
36711H3N95	3.9				6000		
36711H4N75	4.7				5300		
36711H4N75	5.1				5000		
36711H5N65	5.6	4200			S / K		

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		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	1.80	50		
36711H33NJ	33		14	2.10			
36711H39NJ	39		14	2.40			
36711H47NJ	47	8	13	1300	2.8		

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	33	10000	0.12	300	5		
36711E1N1S	1.1				0.13				
36711E1N2S	1.2				0.14				
36711E1N3S	1.3				0.16				
36711E1N5S	1.5								
36711E1N6S	1.6								
36711E1N8S	1.8								
36711E2N0S	2.0				36			6000	0.17
36711E2N2S	2.2								0.19
36711E2N4S	2.4								0.22
36711E2N7S	2.7								
36711E3N0S	3.0								
36711E3N3S	3.3								
36711E3N6S	3.6	32	5000	0.24					
36711E3N9S	3.9								
36711E4N3S	4.3								
36711E4N7S	4.7								
36711E5N1S	5.1	37	4000	0.27					
36711E5N6S	5.6								
36711E6N2J	6.2			0.32					
36711E6N8J	6.8								
36711E8N2J	8.2	34	3900	0.37					
36711E10NJ	10			0.42					
36711E12NJ	12			0.50					
36711E15NJ	15			0.55					
36711E18NJ	18	31	2600	0.65					
36711E22NJ	22			0.80					
		30	2300	0.55					
				0.65					
				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	200	
36711E39NJ	39		24	1100	1.20		
36711E47NJ	47		23	900	1.30	180	
36711E56NJ	56		21	750	1.40		
36711E68NJ	68		19			600	
36711E82NJ	82		16	100			
36711ER10J	100		-				
36711ER12J	120		-				

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
36711J1N25	1.2	8	47	6000	0.10	1000	5
36711J1N55	1.5		55				
36711J1N85	1.8		49				
36711J2N25	2.2		48	4000	0.13	600	
36711J2N75	2.7		51				
36711J3N35	3.3		48				
36711J3N95	3.9		46	3500	0.20	500	
36711J4N75	4.7		48				
36711J5N65	5.6		48				
36711J6N2J	6.8	50	3200	0.28	300	J	
36711J7N0J	10	47	2600	0.30			
36711J8N2J	12	45	2300	0.35			
36711J9N5NJ	15	48	2000	0.40	500		
36711J10NJ	18	47	1600	0.45			
36711J12NJ	22	49	1400	0.50	400		
36711J17NJ	27	47	1200	0.55			
36711J33NJ	33	46	1100	0.60	300		
36711J39NJ	39	39	900	0.65			
36711J47NJ	47	37	700	0.70	300		
36711J56NJ	56	36	600	0.75			
36711J68NJ	68	29	500	0.85	300		
36711J82NJ	82	16	400	0.95			
36711JR10J	100	17	400	1.00	300		
36711JR12J	*120	-	1.20	1.30			
36711JR15J	*150	-	1.30	1.50			
36711JR18J	*180	-					
36711JR22J	*220	-					
36711JR27J	*270	-					

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			
36712A1N85	1.8	10	55	4000	0.10	300	S			
36712A2N25	2.2		53							
36712A2N75	2.7		56							
36712A3N35	3.3	12	47	0.13						
36712A3N95	3.9		54	0.15						
36712A4N75	4.7		55	3500	0.15					
36712A5N65	5.6	15	60	3200	0.23			300	J	
36712A6N8J	6.8		63	2800	0.25					
36712A8N2J	8.2		62	2000	0.28					
36712A10NJ	10		60	2100	0.30					
36712A12NJ	12		60	1900	0.35					
36712A15NJ	15		60	1600	0.40					
36712A18NJ	18		60	1500	0.45					
36712A22NJ	22		60	1300	0.50					
36712A27NJ	27		18	58	1300	0.55	300			J
36712A33NJ	33			55	1200	0.60				
36712A39NJ	39	47		1000	0.65					
36712A47NJ	47	43		900	0.70					
36712A56NJ	56	39		800	0.75					
36712A68NJ	68	30		700	0.80					
36712A82NJ	82	*13		-	600	0.90		300	J	
36712A100NJ	100				500	0.95				
36712AR150J	*150				400	1.00				
36712AR170J	*180				350	1.10				
36712AR220J	*220		300		1.20					
36712AR270J	*270		*12		-	250	1.30			
36712AR330J	*330					250	1.40			
36712AR390J	*390					250	1.30			
36712AR470J	470		*10		200	1.50	300			J

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




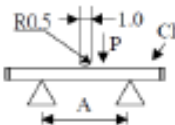
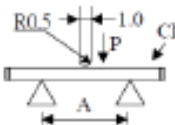
☒ Test Condition:

< Unless otherwise specified >

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

< In case of doubt >

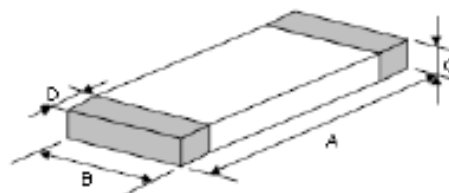
Temperature: 25°C ± 2°C Humidity: 60% to 70% RH

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
Terminal Strength	The terminal electrode shall not be broken off nor the ferrite damaged. 	TYPE	W(KGF) TIME (SEC)
		0805	0.6 30 ± 5
		0402	0.75 10 ± 5
Terminal Strength	The terminal electrode shall not be broken off nor the ferrite damaged. 	TYPE	W(KGF) TIME (SEC)
		0603	1.0 10 ± 5
		0805	1.0 10 ± 5
Bending Strength	No mechanical damage. The ferrite shall not be damaged. 	TYPE	A(MM) P(KGF)
		0402	0.4 0.6
		0603	1.0 0.6
Bending Strength	No mechanical damage. The ferrite shall not be damaged. 	TYPE	A(MM) P(KGF)
		0805	1.4 1.0

Bending Test	<p>Appearance: No damage</p> <p>Pressure jig Deflection Product (90 mm)</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>

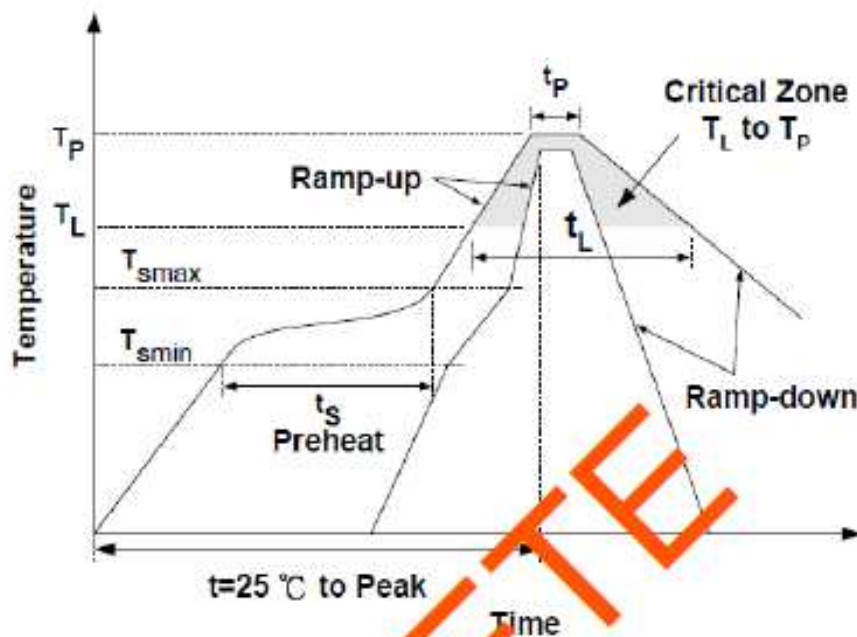
Climatic test		
ITEM	SPECIFICATION	TEST CONDITION
Thermal Shock (Temperature Cycle)	Impedance shall be within $\pm 20\%$ of the initial value.	Temperature: $-55^{\circ}\text{C}\sim 125^{\circ}\text{C}$ for 30 minutes each 100 cycles.
Humidity Resistance		Temperature : 60°C Humidity: 95% RH Time: 1000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

Product Dimensions



Size	A	B	C	D
0201	0.6 ± 0.03	0.3 ± 0.03	0.3 ± 0.03	0.15 ± 0.05
0402	1.0 ± 0.10	0.5 ± 0.10	0.5 ± 0.10	0.25 ± 0.10
0603	1.6 ± 0.15	0.8 ± 0.15	0.8 ± 0.15	0.3 ± 0.20
0805	2.0 ± 0.20	1.2 ± 0.20	0.9 ± 0.20	0.5 ± 0.30

Recommended Reflow solder Profile



Profile Feature		Pb-Free
Preheat	t_s	60~180 seconds
	T_{smax}	150°C
	T_{smin}	200°C
Average ramp up rate (T_{smin} 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% of actual peak temperature (t_p)		10 seconds
Ramp down rate		6°C/sec max.
Time 25°C to peak temperature		8 minutes max.

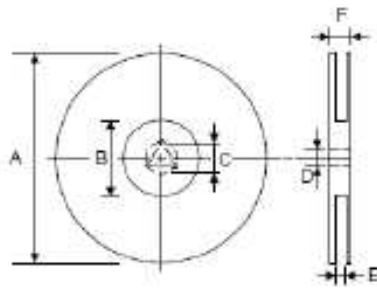
Packaging

Peel-Off Force

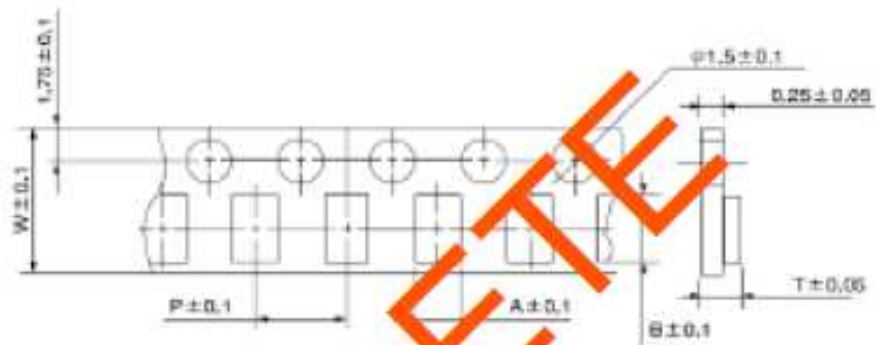


The force for peeling off cover tape is 10 grams in the arrow direction.

Dimension (Unit: mm)



A	B	D	E	F
178±1	60+0.5 -0	13 ±0.2	9±0.5	12 ±0.5



Size	A	B	W	P	T	Chips / Reel
0201	0.38 ±0.03	0.38 ±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%