

Type 3671 Series

Key Features

Frequency to
10GHz

Four sizes
available

Supplied on
tape

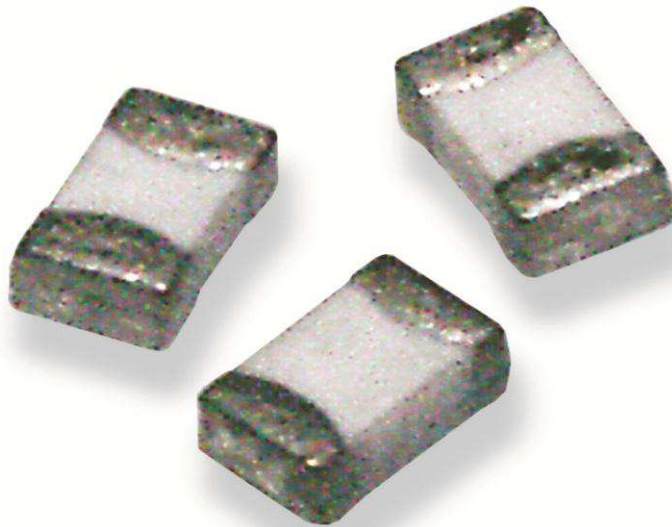
Available via
distribution

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		20		0.18	230	
36711H1N5S	1.5				0.19	200	
36711H1N8S	1.8			8800	0.22		
36711H2N2S	2.2	5	20		7700	0.25	180
36711H2N7S	2.7			6700	0.30	170	
36711H3N3S	3.3					6000	0.40
36711H3N9S	3.9						
36711H4N7S	4.7						
36711H4N7S	5.1						
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		1.80		50		
36711H33NJ	33		16	1700		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			6000	0.14		
36711E1N3S	1.3				0.16		
36711E1N5S	1.5		41		0.17		
36711E1N6S	1.6				0.19		
36711E1N8S	1.8		36		0.22		
36711E2N0S	2.0				0.24		
36711E2N2S	2.2				0.27		
36711E2N4S	2.4		38		0.32		
36711E2N7S	2.7				0.37		
36711E3N0S	3.0		37		5000		
36711E3N3S	3.3			4000	0.50		
36711E3N6S	3.6		0.55				
36711E3N9S	3.9		32		0.65		
36711E4N3S	4.3				0.80		
36711E4N7S	4.7		37	35	0.32		
36711E5N1S	5.1		0.37				
36711E5N6S	5.6		0.42				
36711E6N2J	6.2		34	3900	0.50	J	
36711E6N8J	6.8			3500	0.55		
36711E8N2J	8.2		31	3200	0.65		
36711E10NJ	10			2600	0.80		
36711E12NJ	12		30	2300	0.80		
36711E15NJ	15			2000	0.80		
36711E18NJ	18			1600	0.80		
36711E22NJ	22						

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		
36711E56NJ	56		21	750	1.40		
36711E68NJ	68		19			150	
36711E82NJ	82		16	600	1.60	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 Typic al 800 MHz	SRF (MHz) Minimu m	RDC (Ω) Max.	IDC (mA) Max.	Tolerance
36711J1N2S	1.2	8	47	6000	0.10	1000	S
36711J1N5S	1.5		55				
36711J1N8S	1.8						
36711J2N2S	2.2	10			49		
36711J2N7S	2.7		48				
36711J3N3S	3.3		51				
36711J3N9S	3.9		48	0.15			
36711J4N7S	4.7						
36711J5N6S	5.6						
36711J6N8J	6.8		46	4000	0.20		
36711J8N2J	8.2					48	0.23
36711J10NJ	10						
36711J12NJ	12	47	3200	0.28			
36711J15NJ	15				45	2600	0.30
36711J18NJ	18						
36711J22NJ	22	47	2000	0.40			
36711J27NJ	27				49	1600	0.45
36711J33NJ	33						
36711J39NJ	39	46	1200	0.55			
36711J47NJ	47				39	900	0.60
36711J56NJ	56						
36711J68NJ	68	36	600	0.70			
36711J82NJ	82				29	500	1.20
36711JR10J	100						
36711JR12J	*120	17	400	1.50			
36711JR15J	*150				-		
36711JR18J	*180						
36711JR22J	*220	*8	-	1.30		300	
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		
36712A1N8S	1.8	10	55	4000	0.10	300	S		
36712A2N2S	2.2		53						
36712A2N7S	2.7	12	56		0.13				
36712A3N3S	3.3		47						
36712A3N9S	3.9		54		0.15				
36712A4N7S	4.7		55	3500	0.20				
36712A5N6S	5.6		15	60	3200		0.23	J	
36712A6N8J	6.8	63		2800	0.25				
36712A8N2J	8.2	62		2400	0.28				
36712A10NJ	10	60		2100	0.30				
36712A12NJ	12			1900	0.35				
36712A15NJ	15	63		1600	0.40				
36712A18NJ	18	60	1500	0.45					
36712A22NJ	22		1400	0.50					
36712A27NJ	27	18	58	1300	0.55				
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		-	600	0.90				
36712AR10J	100			*13			500		0.95
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				1.30				
36712AR39J	*390	*10		200	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.

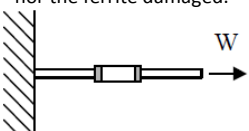
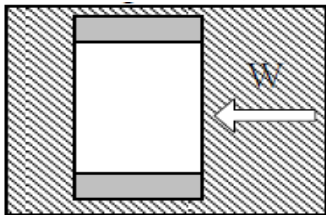
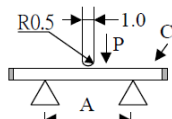
Measuring Method / Condition

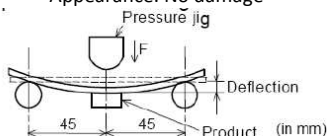
Test Instrument:

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

Test Condition:

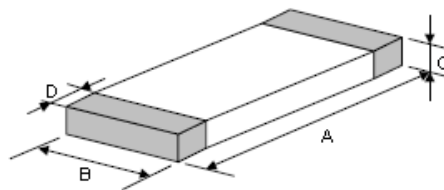
< Unless otherwise specified >
 Temperature: 15°C to 35°C Humidity: 25% to 85% RH
 < In case of doubt >
 Temperature: 25°C ± 2°C Humidity: 60% to 70% RH

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
		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	1.0	
		0805		
Bending Strength	No mechanical damage. The ferrite shall not be damaged. 	TYPE	A(MM)	P(KGF)
		0402	0.4	0.6
		0603	1.0	
		0805	1.4	1.0

Bending Test	Appearance: No damage 	Substrate: PCB(100mm×40mm×1.6mm) Solder: Reflow Speed of Applying Force: 0.5mm / s Deflection: 2mm Hold Duration: 30 s
Vibration	Impedance shall be within $\pm 20\%$ of the initial value. There shall be no mechanical damage.	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
Drop shock	No apparent damage	Dropped onto printed circuit board from 100cm height three times in x, y, z directions. The terminals shall be protected.

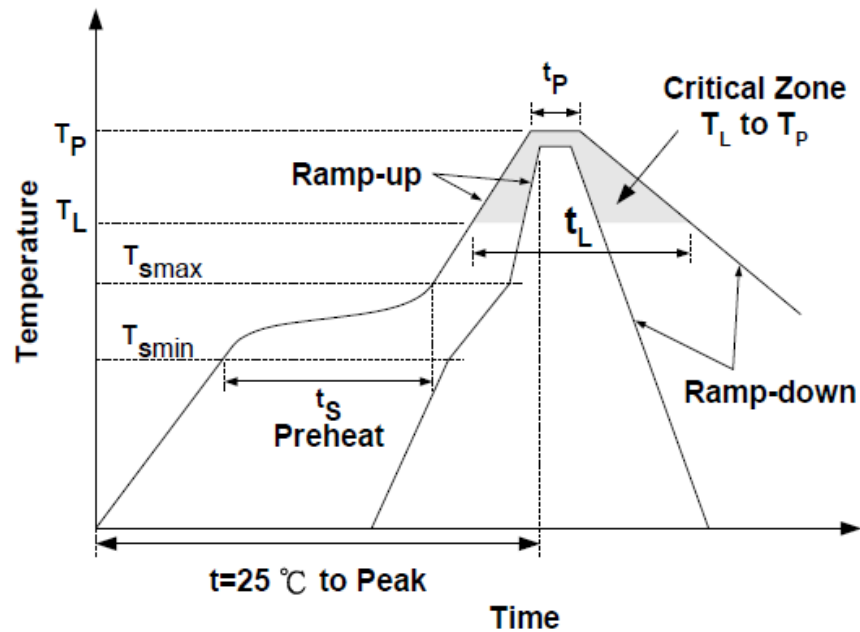
Climatic test		
ITEM	SPECIFICATION	TEST CONDITION
Thermal Shock (Temperature Cycle)	Impedance shall be within ±20% of the initial value.	Temperature: -55°C~125°C for 30 minutes each 100 cycles.
Humidity Resistance		Temperature : 60°C Humidity: 95% RH Time: 1000 ±12 Hours
High Temperature Resistance		Temperature : 85°C ±2°C Time: 1000 ±12 Hours
Low Temperature Resistance		Temperature : -40°C ±2°C Time: 1000 ±12 Hours
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.		

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_{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.

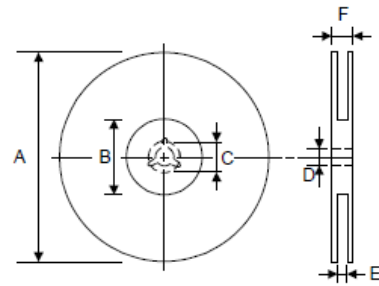
Packaging

Peel-Off Force

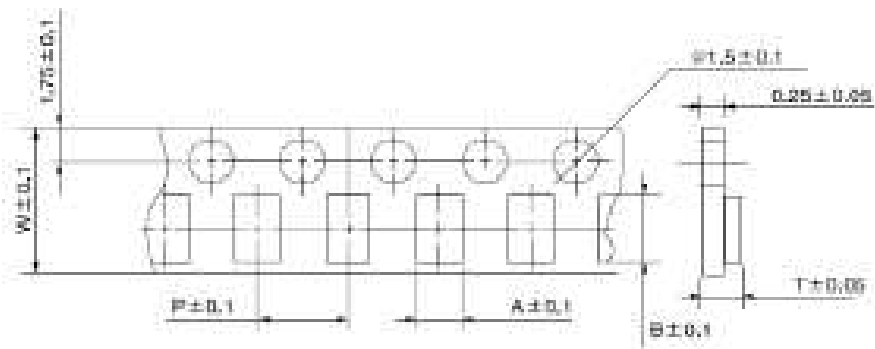


The force for peeling off cover tape is 10 grams in the arrow direction.

Dimension (Unit: mm)



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	0.68 ±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

3671	2A	3N9	S
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%