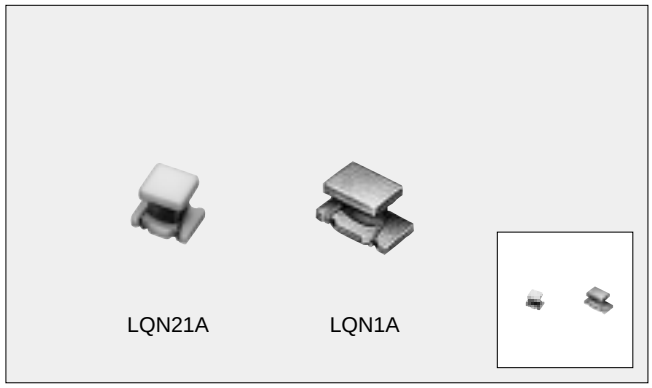
CHIP COIL

Wire Wound Chip Coil **LQN21A/LQN1A** Series for High Frequency

Small Winding-type Air-core Chip Coil with High Q value at High Frequencies and Low DC Resistance

The LQN21A/LQN1A series consists of air-core chip coil using a sub-miniature alumina core as a bobbin. The high Q value at high frequencies and high self-resonant frequencies make this coil perfect for use in the high frequency circuits of communications equipment.



■FEATURES

1. LQN21A series covers inductance range from 3.3nH to 470nH.
2. Their high self-resonant frequency characteristic yields a high Q value and highly stable inductance at high frequencies.
3. Low DC resistance design enables to handle higher allowable current.
4. The series has excellent solder heat resistance. Both flow and reflow soldering methods can be employed.

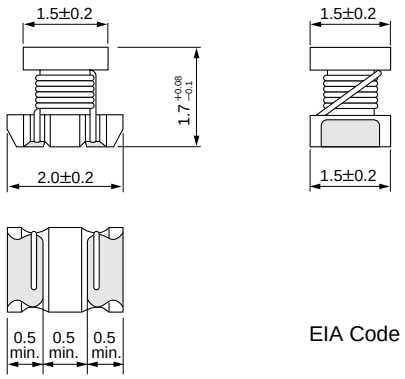
- LQN21Axxxx04
  Inductance tolerance ±0.5nH (8.2nH max.), ±5% (10nH to 220nH) and ±10% (270nH to 470nH) are realized. The sub miniature dimensions (2.0×1.5mm) allow high density mounting.
- LQN21A (Tight inductance tolerance)
  Tight inductance tolerance of ±2% is available.
- LQN21Axxxx44
  LQN21Axxxx44 using thick wire (f0.12mm) has higher Q value than existing LQN21A series. Low DC resistance design enables to handle higher current.
  LQN21Axxxx44 covers inductance range from 2.7nH to 27nH.
- LQN1A
  Miniature size (3.2×1.6×1.8mm) allows parallel mounting at 2.5mm pitch.
  Inductance tolerance ±5% realized.

■APPLICATIONS

- High frequency circuit in telecommunication equipment, such as DECT, PHS, PCS, PCN, GSM and CDMA.
- Impedance Matching—Power-AMP Module (PA), SAW filter
- Resonance circuits—VCO

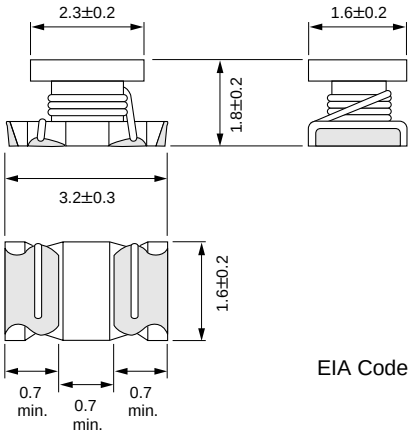
■DIMENSIONS

LQN21A



EIA Code : 0805

LQN1A



EIA Code : 1206

(in mm)

■SPECIFICATIONS

LQN21Axxxx04

Part Number	Inductance			Q ∗1			DC Resistance (Ω max.)	∗2 Self-resonant Frequency (MHz min.)	Allowable Current (mA)	Operating Temp. Range
	Nominal Value (nH)	Tolerance	Test Frequency (MHz)	Peak Value (Typ.)	Min. Value	Test Frequency (MHz)				
LQN21A3N3D04	3.3	±0.5nH	100	70	10	250	0.05	6000	910	−25 to +85℃
LQN21A6N8D(K)04	6.8	±0.5nH			20		0.11	5400	680	
LQN21A8N2D(K)04	8.2	(±10%)					0.12	3900	630	
LQN21A10NJ(K)04	10	±5% (±10%)		80	30		0.03	3300	1320	
LQN21A12NJ(K)04	12			65			0.11	3200	680	
LQN21A15NJ(K)04	15						0.12	2700	630	
LQN21A18NJ(K)04	18			70			0.10	2600	690	
LQN21A22NJ(K)04	22						0.09	2100	720	
LQN21A27NJ(K)04	27				40		0.17	2300	540	
LQN21A33NJ(K)04	33			65			0.15	1900	570	
LQN21A39NJ(K)04	39			80			0.09	1700	730	
LQN21A47NJ(K)04	47			65		200	0.23	1600	450	
LQN21A56NJ(K)04	56			70			0.26	1500	430	
LQN21A68NJ(K)04	68			65			0.23	1200	460	
LQN21A82NJ(K)04	82			60		150	0.42	1100	320	
LQN21AR10J(K)04	100			70			0.38	900	350	
LQN21AR12J(K)04	120			50			0.40	750	320	
LQN21AR15J(K)04	150			45	30		0.47	350	390	
LQN21AR18J(K)04	180			50	35	100	0.71	700	250	
LQN21AR22J(K)04	220						0.70	500	240	
LQN21AR27K04	270	±10%	10		15	25.2	2.00	550	190	
LQN21AR33K04	330						2.20	500	180	
LQN21AR39K04	390						2.50	400	170	
LQN21AR47K04	470						2.80	350	160	

LQN21A (Tight inductance tolerance)

Part Number	Inductance			Q ∗1			DC Resistance (Ω max.)	∗2 Self-resonant Frequency (MHz min.)	Allowable Current (mA)	Operating Temp. Range
	Nominal Value (nH)	Tolerance	Test Frequency (MHz)	Peak Value (Typ.)	Min. Value	Test Frequency (MHz)				
LQN21A33NG04	33	±2%	100	65	40	250	0.15	1900	570	−25 to +85℃
LQN21A39NG04	39			80			0.09	1700	730	
LQN21A47NG04	47			65		200	0.23	1600	450	
LQN21A56NG04	56			70			0.26	1500	430	
LQN21A68NG04	68			65			0.23	1200	460	
LQN21A82NG04	82			60		150	0.42	1100	320	
LQN21AR10G04	100			55	35		0.55	900	270	
LQN21AR12G04	120			50	40		0.40	750	320	
LQN21AR15G04	150			55	30		0.68	350	260	
LQN21AR18G04	180			50	35	100	0.71	700	250	
LQN21AR22G04	220						0.70	500	240	

∗1 Measured with LCR meter YHP4191A, measuring tap 16193A.
∗2 Measured with Network Analyzer HP8753C.

LQN21Axxxx44

Part Number	Inductance			Q				DC Resistance (Ω max.)	Self-resonant Frequency (MHz min.)	Allowable Current (mA)	Operating Temp. Range
	Nominal Value (nH)	Tolerance	Test Frequency (MHz)	Nominal Value (min.)	Test Frequency (MHz)	800MHz (Typ.)	1.5GHz (Typ.)				
LQN21A2N7D44	2.7	±0.5nH	100	20	250	85	120	0.02	6000	1900	−25 to +85℃
LQN21A3N1D44	3.1						110			1800	
LQN21A3N3D44	3.3									1700	
LQN21A5N6D44	5.6			35		95	115			1500	
LQN21A6N8D44	6.8								5400	1400	
LQN21A8N6D44	8.6						100	0.03	3900	1300	
LQN21A10NJ44	10	±5%				85	90		3300	1320	
LQN21A12NK44	12	±10%		40		100		0.04	3200	1100	
LQN21A15NK44	15					105			3100	1000	
LQN21A18NK44	18.8						75	0.05	2600		
LQN21A21NK44	21						65		2200	950	
LQN21A27NK44	27					95	45	0.06	1800	900	

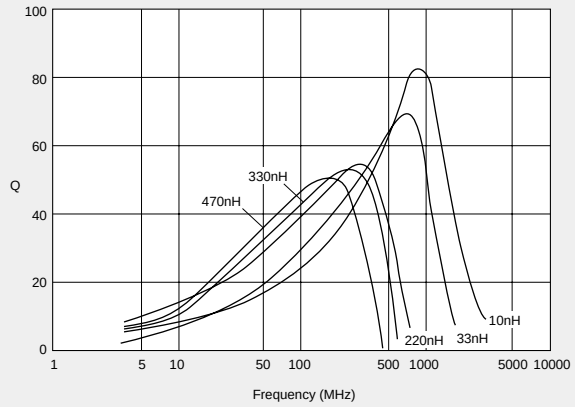
LQN1A

Part Number	Inductance			Q			DC Resistance (Ω)	Self-resonant Frequency (MHz min.)	Allowable Current (mA)	Operating Temp. Range
	Nominal Value (nH)	Tolerance (%)	Test Frequency	Peak Value (Typ.)	Min. Value	Test Frequency				
LQN1A8N8J(K)04	8.8	±5 (±10)	100MHz	100	50	436MHz	0.029±40%	1000	750	−25 to +85℃
LQN1A15NJ(K)04	14.7				60		0.035±40%		680	
LQN1A17NJ(K)04	17						0.037±40%		650	
LQN1A23NJ(K)04	23						0.046±40%		590	
LQN1A27NJ(K)04	27						0.051±40%		560	
LQN1A33NJ(K)04	33						0.057±40%		530	
LQN1A39NJ(K)04	39						0.067±40%		490	
LQN1A47NJ(K)04	47			90			0.110±40%		380	
LQN1A56NJ(K)04	56						0.140±40%		330	
LQN1A64NJ(K)04	64			80			0.180±40%		290	
LQN1A84NJ(K)04	84			70			0.280±40%		240	
LQN1AR10J(K)04	100						0.300±40%	900	230	

■TYPICAL ELECTRICAL CHARACTERISTICS

●Q-Frequency Characteristics

LQN21Axxxx04



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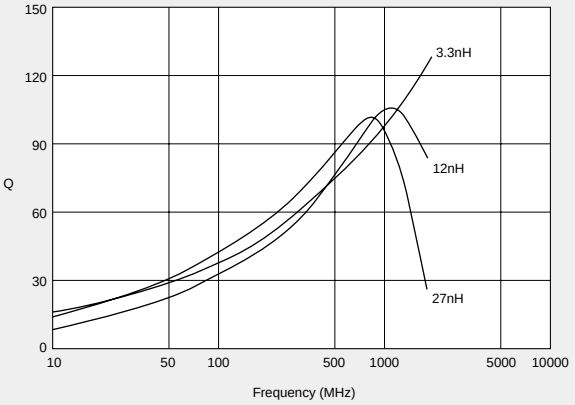

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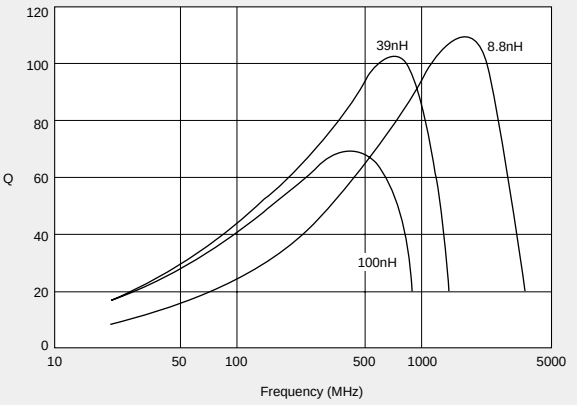

●Inductance-Frequency Characteristics

LQN21Axxxx44