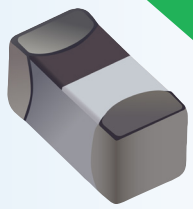
BOURNS®

CE1005Q SERIES

Multilayer Chip Inductors



*RoHS COMPLIANT

Features

- 1005 size
- Monolithic construction offering high reliability
- Magnetically shielded construction providing low radiation
- Low profile
- High frequency
- RoHS compliant*

Applications

- RF and wireless communication
- Noise filters
- Low voltage power supply modules
- Radio transmitters
- RF amplifiers
- Various mobile electronic devices
- Radar

Sustainability

- Small size reduces material use
- ISO 14001, low-impact energy
- Responsibly sourced and produced
- Meets EU 94/62/EC standards

Product Overview

Bourns® CE1005Q Series Multilayer Chip Inductors feature a monolithic structure achieved through advanced multilayer technology, offering high reliability and low DC resistance in a compact form factor with a profile of 0.5 mm.

The CE1005Q Series features high SRF values of up to 10,000 MHz with inductance ranges from 0.3 to 150 nH and tight tolerances. With a DCR specification ranging from 0.08 to 3.2 Ω, rated current values from 400 to 1000 mA, and an operating temperature range from -55 °C to +125 °C, these chip inductors are well-suited for use in RF amplifiers, low-voltage power supply modules, radio transmitters, radar, wireless communication, and various mobile electronic devices.

Electrical Specifications (@ T_A = 25 °C Unless Otherwise Noted)

Bourns Part Number	Inductance		Q Min.	Test Frequency (MHz)	SRF (MHz) Min.	DCR (Ω) Max.	Rated Current (mA) Max.
	L (nH)	Tolerance					
CE1005Q-0N3_	0.3	±0.1 nH	8	100	10,000	0.08	1,000
CE1005Q-0N4_	0.4				10,000	0.08	1,000
CE1005Q-0N5_	0.5				10,000	0.08	1,000
CE1005Q-0N6_	0.6				10,000	0.08	1,000
CE1005Q-0N7_	0.7				10,000	0.08	1,000
CE1005Q-0N8_	0.8				10,000	0.08	1,000
CE1005Q-1N0_	1.0	±0.1 nH, ±0.2 nH, ±0.3 nH			10,000	0.08	1,000
CE1005Q-1N1_	1.1				10,000	0.08	1,000
CE1005Q-1N2_	1.2				10,000	0.09	1,000
CE1005Q-1N3_	1.3				10,000	0.09	1,000
CE1005Q-1N5_	1.5				10,000	0.10	1,000
CE1005Q-1N6_	1.6				10,000	0.10	1,000
CE1005Q-1N8_	1.8				10,000	0.12	900
CE1005Q-2N0_	2.0				10,000	0.12	900
CE1005Q-2N2_	2.2				10,000	0.13	900
CE1005Q-2N4_	2.4				10,000	0.13	800

Note: Underscore indicates Inductance Tolerance Code:
P = ±0.1 nH, C = ±0.2 nH, D = ±0.3 nH
G = ±2 %, H = ±3 %, J = ±5 %

Continued on page 2

* RoHS Directive 2015/863, Mar 31, 2015 and Annex.
Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.

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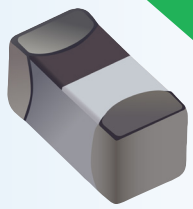

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Electrical Specifications (@ T_A = 25 °C Unless Otherwise Noted) - Continued

Bourns Part Number	Inductance		Q Min.	Test Frequency (MHz)	SRF (MHz) Min.	DCR (Ω) Max.	Rated Current (mA) Max.
	L (nH)	Tolerance** (%)					
CE1005Q-2N7_	2.7	±0.1 nH, ±0.2 nH, ±0.3 nH	8	100	6,000	0.16	800
CE1005Q-3N0_	3.0				6,000	0.16	800
CE1005Q-3N3_	3.3				6,000	0.16	800
CE1005Q-3N6_	3.6				6,000	0.20	700
CE1005Q-3N9_	3.9				6,000	0.20	700
CE1005Q-4N3_	4.3				6,000	0.20	700
CE1005Q-4N7_	4.7				6,000	0.20	700
CE1005Q-5N1_	5.1				5,300	0.23	600
CE1005Q-5N6_	5.6				4,500	0.23	600
CE1005Q-6N2_	6.2				4,500	0.25	600
CE1005Q-6N8_	6.8	±2 %, ±3 %, ±5 %			4,500	0.25	600
CE1005Q-7N5_	7.5				4,200	0.28	500
CE1005Q-8N2_	8.2				3,700	0.28	500
CE1005Q-9N1_	9.1				3,400	0.30	500
CE1005Q-10N_	10				3,400	0.30	500
CE1005Q-12N_	12				3,000	0.45	400
CE1005Q-15N_	15				2,500	0.55	400
CE1005Q-18N_	18				2,200	0.65	300
CE1005Q-22N_	22				1,900	0.70	300
CE1005Q-27N_	27				1,700	0.80	300
CE1005Q-33N_	33				1,600	0.90	200
CE1005Q-39N_	39				1,200	1.00	200
CE1005Q-47N_	47				1,100	1.10	200
CE1005Q-56N_	56				1,000	1.10	200
CE1005Q-68N_	68				800	1.20	200
CE1005Q-82N_	82	±5 %			600	1.30	200
CE1005Q-R10_	100				600	1.60	200
CE1005Q-R12_	120				600	1.60	150
CE1005Q-R15_	150				550	3.20	140

Note: Underscore indicates Inductance Tolerance Code:
P = ±0.1 nH, C = ±0.2 nH, D = ±0.3 nH
G = ±2 %, H = ±3 %, J = ±5 %

General Specifications

Operating Temperature ..... -55 °C to +125 °C
Moisture Sensitivity Level 1
ESD Classification (HBM) ..... N/A

Materials

Base Material ..... Ceramic
Terminal ..... Ag/Ni/Sn
Packaging ..... 10,000 pcs. per reel

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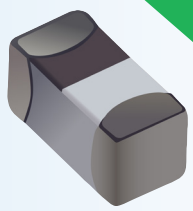

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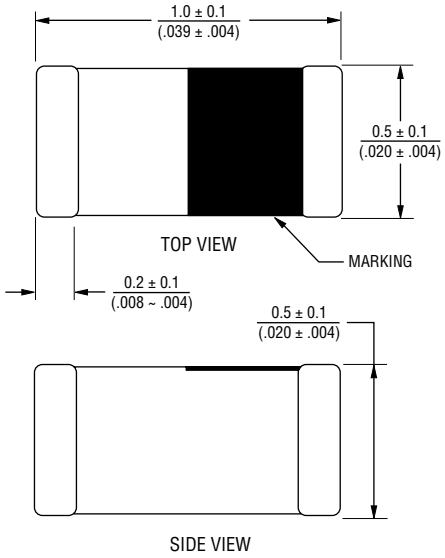
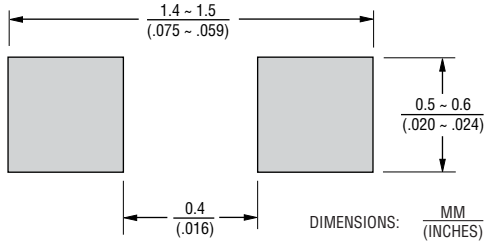
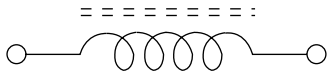
Product Dimensions



Recommended Layout



Electrical Schematic



How to Order

CE1005Q - 1N2 D

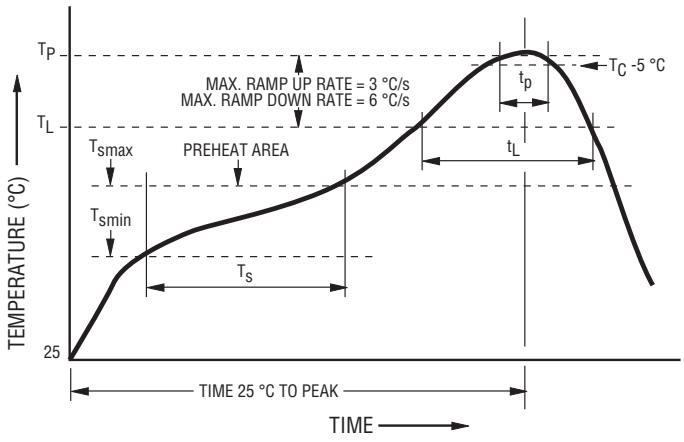
Series

Value Code

Tolerance

P = ±0.1 nH	G = ±2 %
C = ±0.2 nH	H = ±3 %
D = ±0.3 nH	J = ±5 %

Soldering Profile



Profile Feature	Pb-Free Assembly
Preheat / Soak: Temperature Min. (T_{smin}) Temperature Max. (T_{smax}) Time (t_s) from (T_{smin} to T_{smax})	 150 °C 200 °C 60~120 seconds
Ramp Up Rate (T_L to T_p)	3 °C / second max.
Liquidous Temperature (T_L) Time (t_L) maintained above T_L	217 °C 60~150 seconds
Peak Package Body Temperature (T_p)	255~260 °C
Classification Temperature (T_c)	260 °C
Time (t_p) within 5 °C of the specified classification temperature (T_c)	< 30 seconds
Ramp Down Rate (T_p to T_L)	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

NOTE: The product has been tested under this reflow condition. Deviations from this, especially higher temperatures or longer durations, could impact performance.

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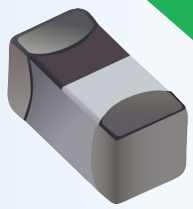

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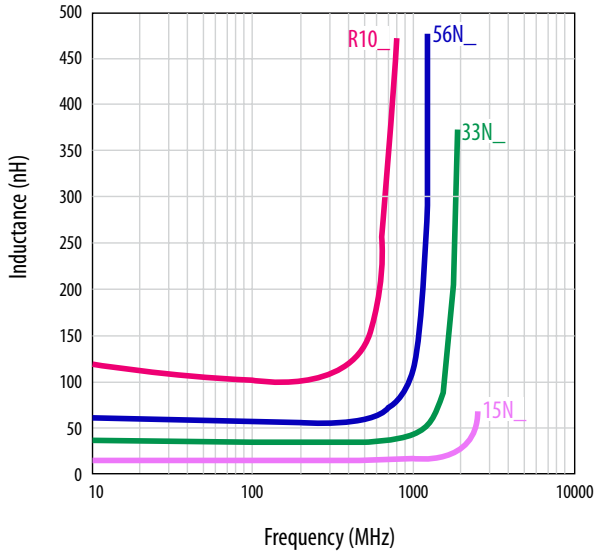
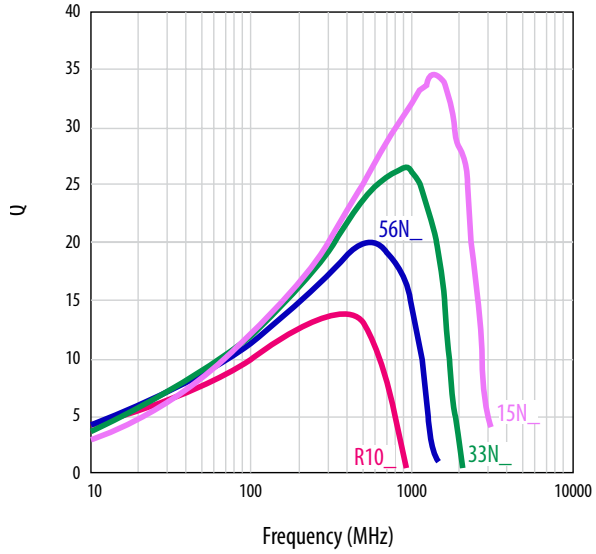
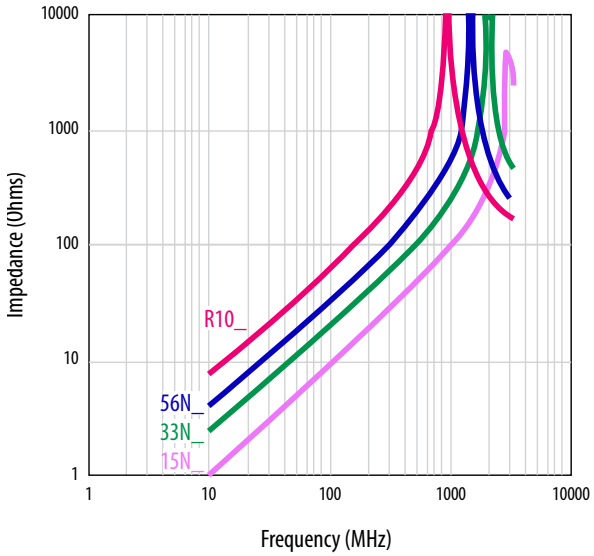
Inductance vs. Frequency



Typical Q vs. Frequency



Impedance vs. Frequency



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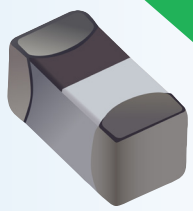

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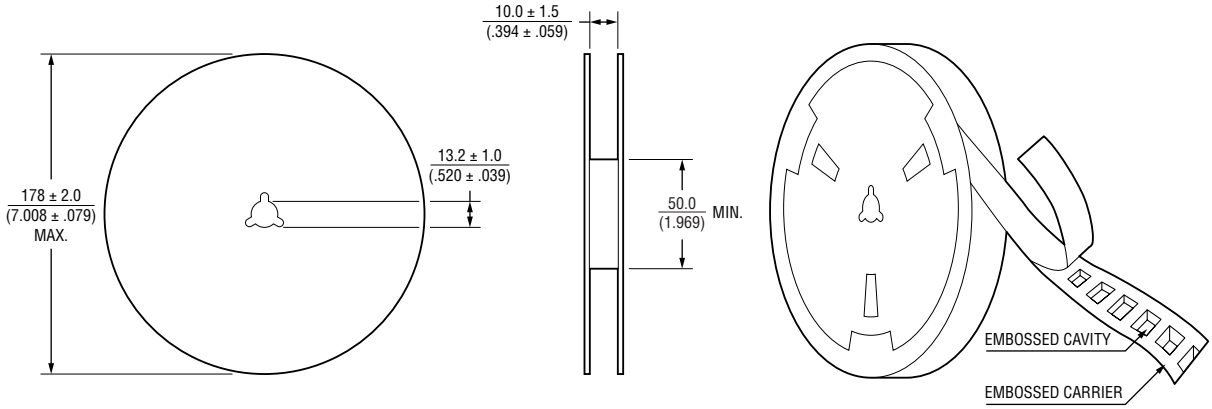
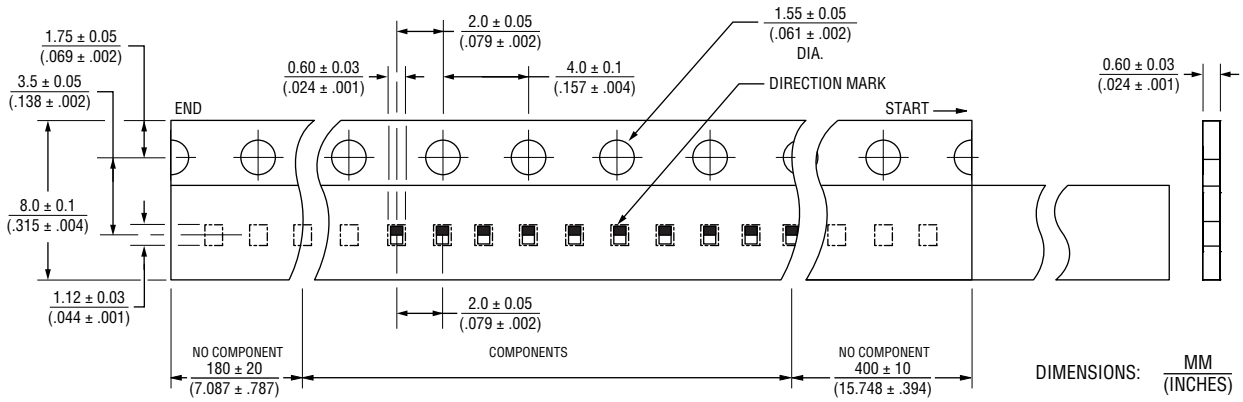
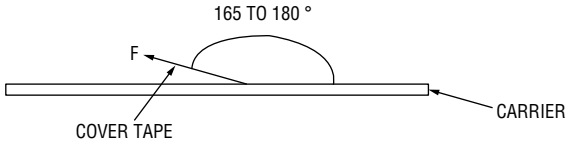
Packaging Specifications





USER DIRECTION OF FEED

QTY: 10,000 PCS PER REEL



DIMENSIONS: MM (INCHES)

PEEL-OFF FORCE SHOULD BE IN THE RANGE OF
10~50 g AT A PEEL-OFF OF 300 MM/MIN.

Contact Information

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