**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				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:

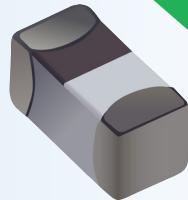
P = ±0.1 nH, C = ±0.2 nH, D = ±0.3 nH

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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Electrical Specifications (@ $T_A = 25^\circ\text{C}$ 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	$\pm 0.1\text{ nH}$, $\pm 0.2\text{ nH}$, $\pm 0.3\text{ nH}$	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	$\pm 2\%$, $\pm 3\%$, $\pm 5\%$	8	100	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	$\pm 5\%$	8	100	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				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:

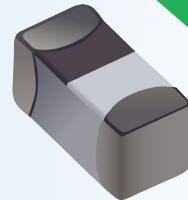
P = $\pm 0.1\text{ nH}$, C = $\pm 0.2\text{ nH}$, D = $\pm 0.3\text{ nH}$ G = $\pm 2\%$, H = $\pm 3\%$, J = $\pm 5\%$

General Specifications

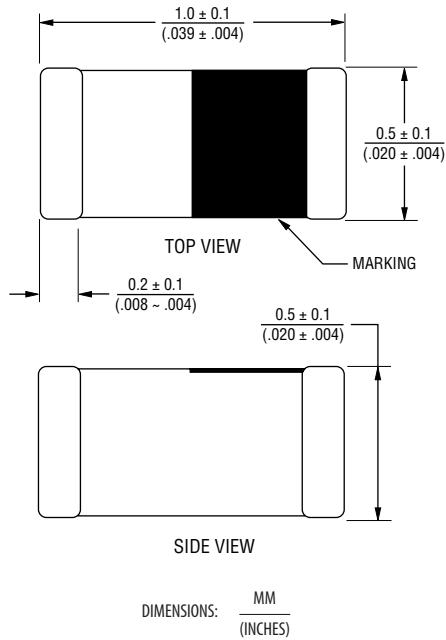
Operating Temperature.....	-55 °C to +125 °C
Moisture Sensitivity Level.....	1
ESD Classification (HBM).....	N/A

Materials

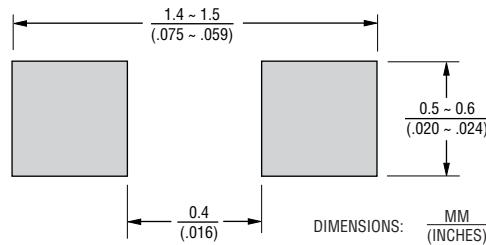
Base Material	Ceramic
Terminal.....	Ag/Ni/Sn
Packaging	10,000 pcs. per reel



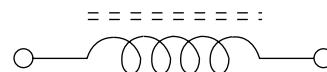
Product Dimensions



Recommended Layout



Electrical Schematic



How to Order

CE1005Q - 1N2 D

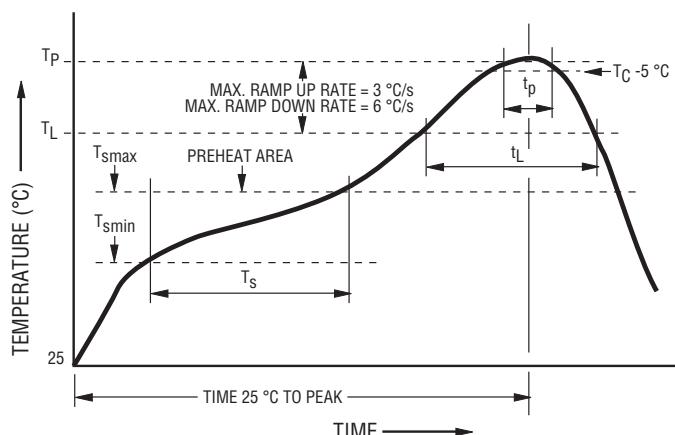
Series

Value Code

Tolerance

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

Soldering Profile

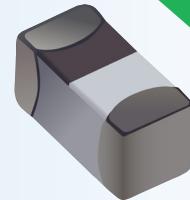


Profile Feature	Pb-Free Assembly
Preheat / Soak: Temperature Min. (T _{smin}) Temperature Max. (T _{smax}) Time (t _s) from (T _{smin} to T _{smax})	150 °C 200 °C 60~120 seconds
Ramp Up Rate (T _L to T _p)	3 °C / second max.
Liquidous Temperature (T _L) Time (t _L) maintained above T _L	217 °C 60~150 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.

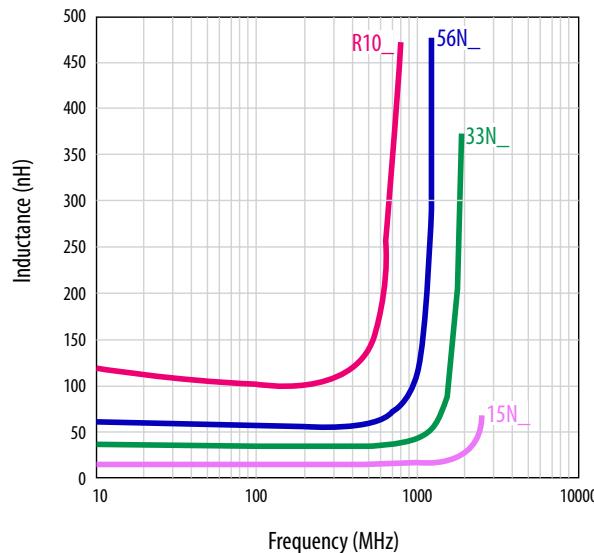
NOTE: The product has been tested under this reflow condition. Deviations from this, especially higher temperatures or longer durations, could impact performance.

Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.

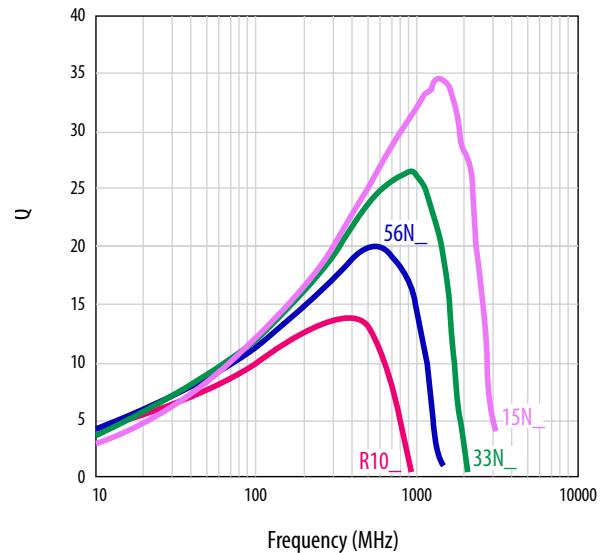
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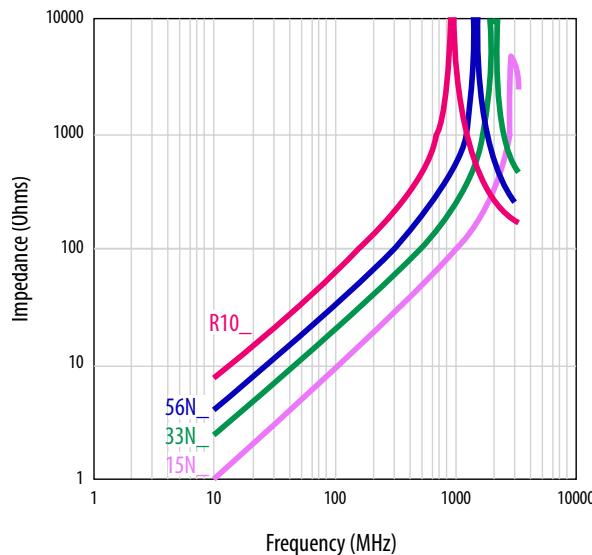
Inductance vs. Frequency



Typical Q vs. Frequency

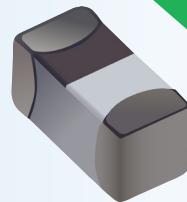


Impedance vs. Frequency

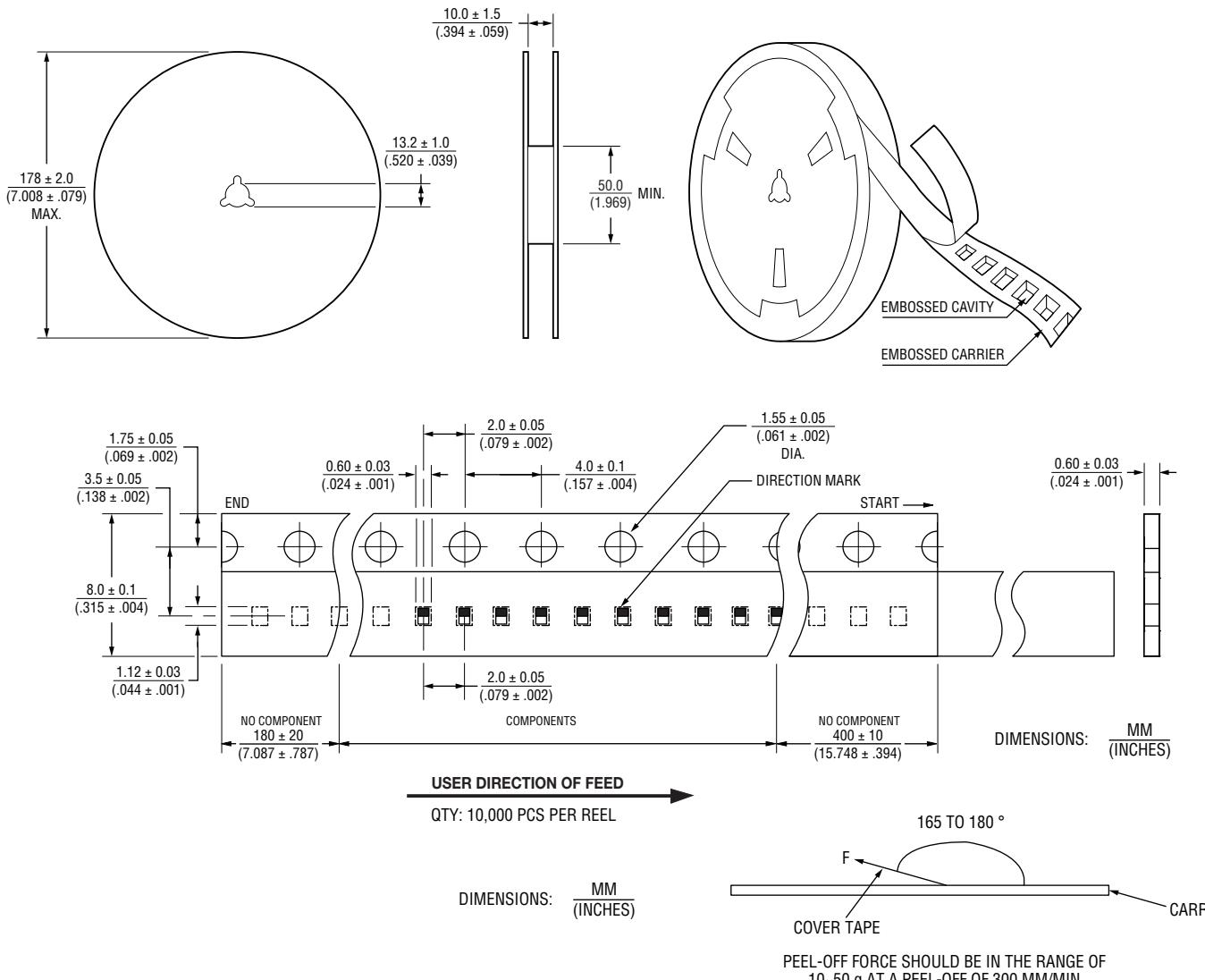


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Packaging Specifications



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