

Features

- 1608 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® CE1608Q 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 maximum profile of 0.8 mm.

The CE1608Q Series features high SRF values of up to 10,000 MHz with inductance ranges from 1.0 to 470 nH and tight tolerances. With a DCR

specification ranging from 0.05 to 2.6 Ω , rated current values from 150 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.

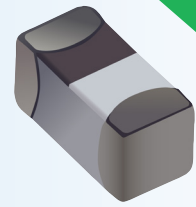
Electrical Specifications (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Bourns Part Number	Inductance		Q Min.	Test Frequency (MHz)	SRF (MHz) Min.	DCR (Ω) Max.	Rated Current (mA) Max.	
	L (nH)	Tolerance						
CE1608Q-1N0D	1.0	±0.3 nH	8	100	10,000	0.05	1,000	
CE1608Q-1N2D	1.2				10,000	0.05	1,000	
CE1608Q-1N5D	1.5				10,000	0.10	1,000	
CE1608Q-1N8D	1.8				10,000	0.10	1,000	
CE1608Q-2N2D	2.2				8,000	0.10	1,000	
CE1608Q-2N7D	2.7		10		7,000	0.13	1,000	
CE1608Q-3N3D	3.3				6,000	0.13	1,000	
CE1608Q-3N9D	3.9				6,000	0.15	1,000	
CE1608Q-4N7D	4.7				5,000	0.20	1,000	
CE1608Q-5N6D	5.6				4,000	0.23	700	
CE1608Q-6N8J	6.8	±5 %			12	4,000	0.25	700
CE1608Q-8N2J	8.2					3,500	0.28	600
CE1608Q-10NJ	10					3,400	0.30	600
CE1608Q-12NJ	12		2,600			0.35	600	
CE1608Q-15NJ	15		2,300			0.40	600	
CE1608Q-18NJ	18		2,000			0.45	600	
CE1608Q-22NJ	22		1,600			0.50	600	

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 °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** (%)					
CE1608Q-27NJ	27	±5 %	12	100	1,400	0.55	600
CE1608Q-33NJ	33				1,200	0.60	600
CE1608Q-39NJ	39				1,100	0.65	500
CE1608Q-47NJ	47				900	0.70	500
CE1608Q-56NJ	56				900	0.75	500
CE1608Q-68NJ	68				700	0.85	400
CE1608Q-82NJ	82				600	0.95	300
CE1608Q-R10J	100				600	1.00	300
CE1608Q-R12J	120		8	50	500	1.20	300
CE1608Q-R15J	150				500	1.20	300
CE1608Q-R18J	180				400	1.30	300
CE1608Q-R22J	220				400	1.50	300
CE1608Q-R27J	270				400	1.90	200
CE1608Q-R33J	330				350	2.10	200
CE1608Q-R39J	390				350	2.30	150
CE1608Q-R47J	470				300	2.60	150

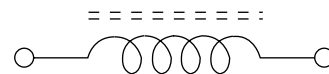
General Specifications

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

Materials

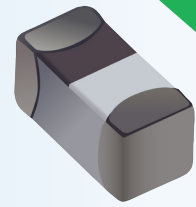
Base Material Ceramic
 Terminal Ag/Ni/Sn
 Packaging 4,000 pcs. per reel

Electrical Schematic

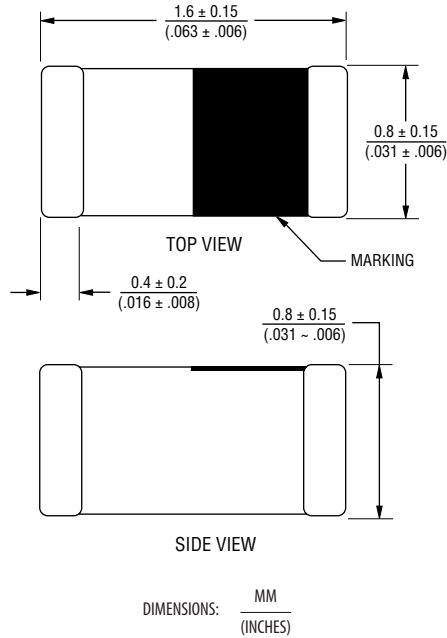


How to Order

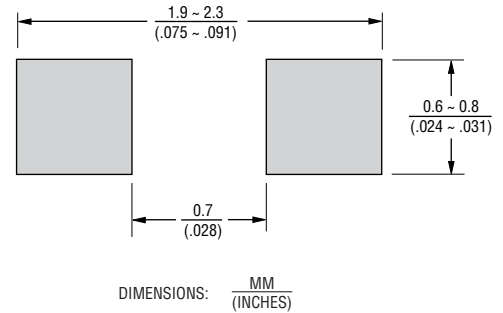
Series _____ **CE1608Q - 1N2 D**
 Value Code _____
 Tolerance _____
 D = ±0.3 nH
 J = ±5 %



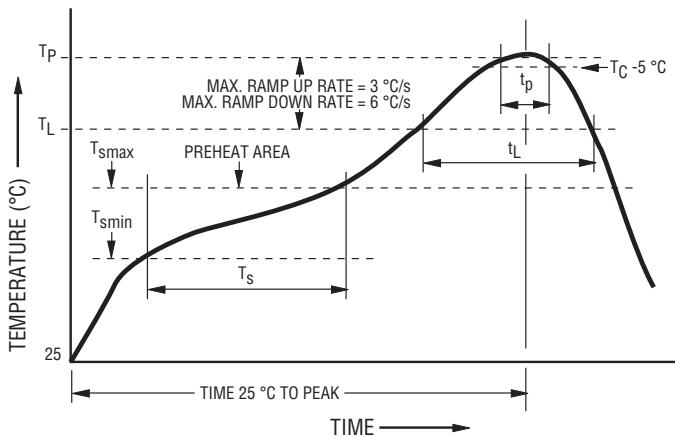
Product Dimensions



Recommended Layout

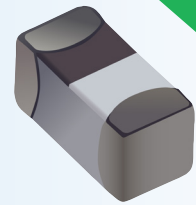


Soldering Profile

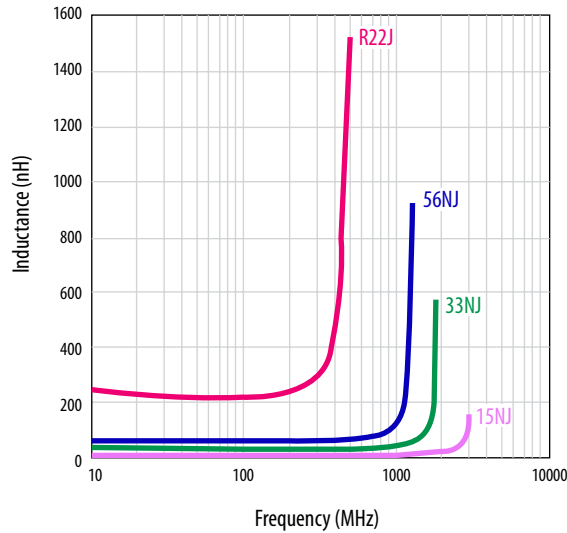


Profile Feature	Pb-Free Assembly
Preheat / Soak:	
Temperature Min. (T_{smin})	150 °C
Temperature Max. (T_{smax})	200 °C
Time (t_s) from (T_{smin} to T_{smax})	60~120 seconds
Ramp Up Rate (T_L to T_p)	3 °C / second max.
Liquidous Temperature (T_L)	217 °C
Time (t_L) maintained above T_L	60~150 seconds
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.

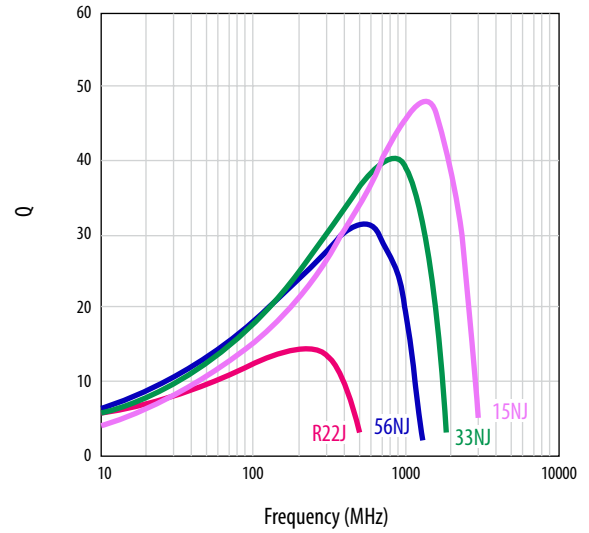
NOTE: The product has been tested under this reflow condition. Deviations from this, especially higher temperatures or longer durations, could impact performance.



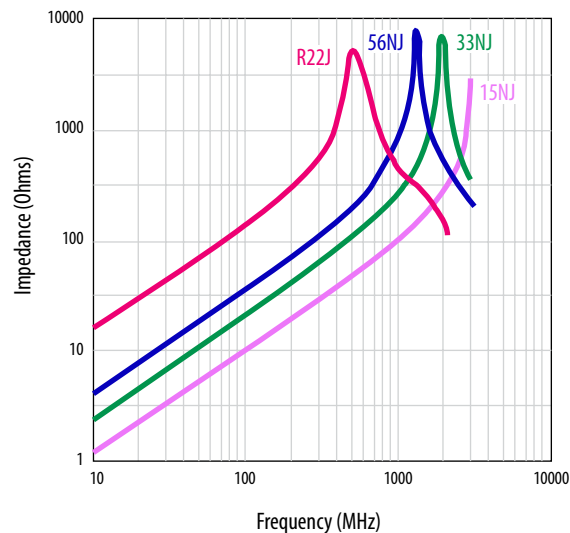
Inductance vs. Frequency



Typical Q vs. Frequency

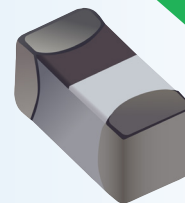


Impedance vs. Frequency

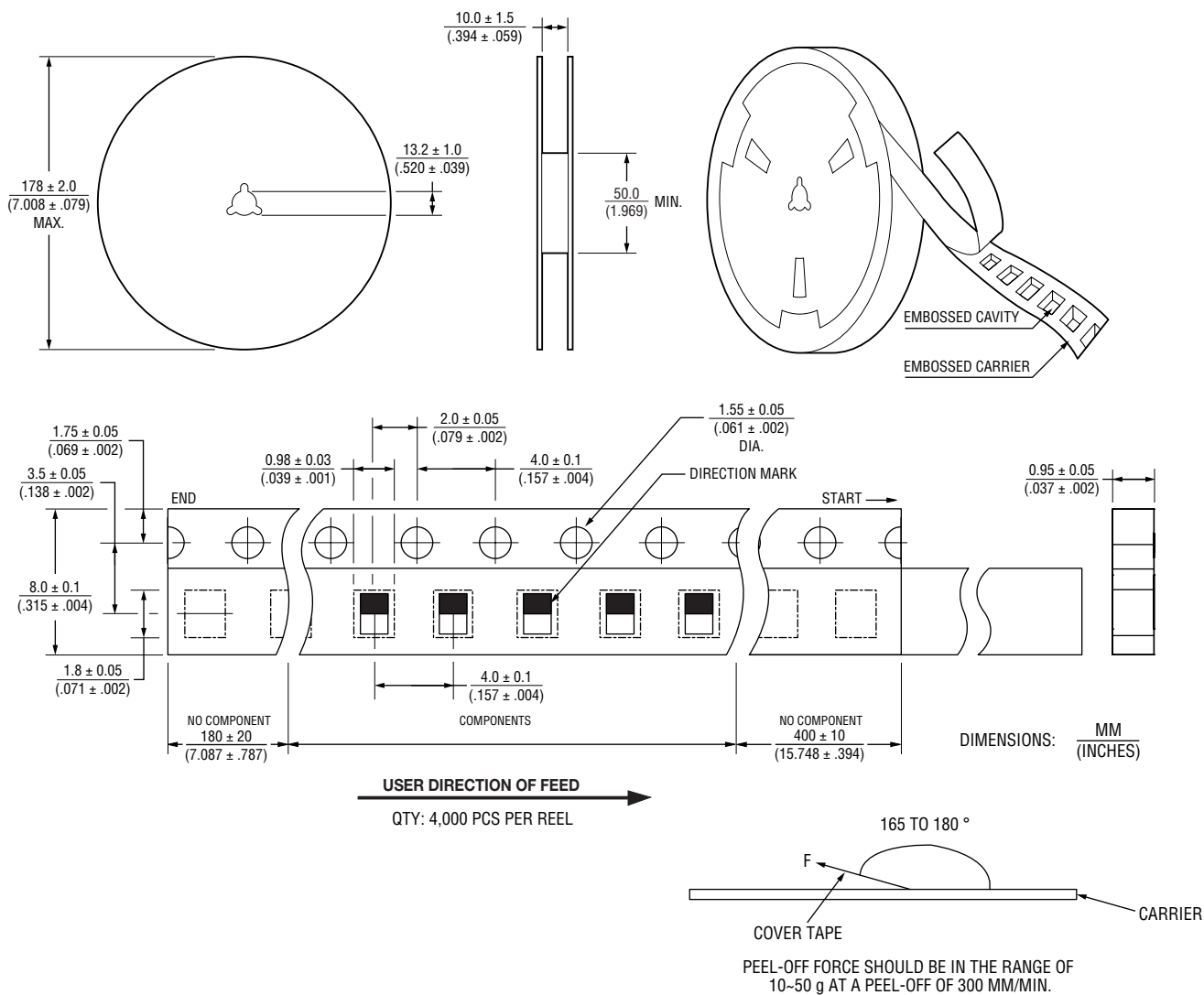


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Packaging Specifications



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