

#### 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.

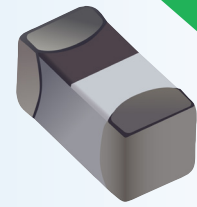
#### Electrical Specifications (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Bourns Part Number	Inductance		Q Min.	Test Frequency (MHz)	SRF (MHz) Min.	DCR (Ω) Max.	Rated Current (mA) Max.	
	L (nH)	Tolerance						
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		±5 %		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	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<sub>A</sub> = 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
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

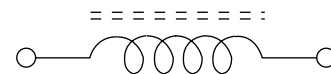
#### General Specifications

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

#### Materials

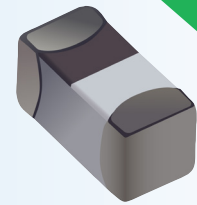
Base Material .....Ceramic  
 Terminal..... Ag/Ni/Sn  
 Packaging .....4,000 pcs. per reel

#### Electrical Schematic

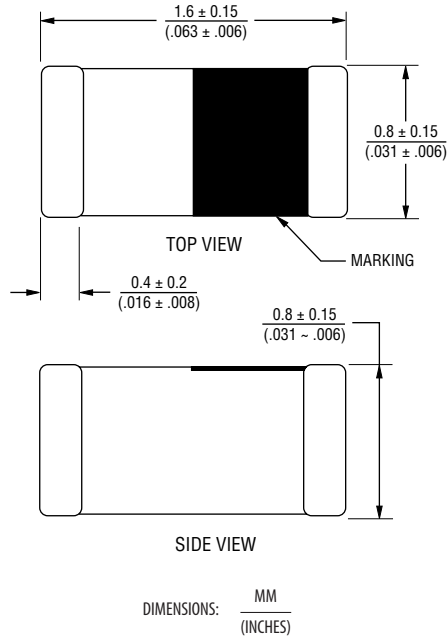


#### How to Order

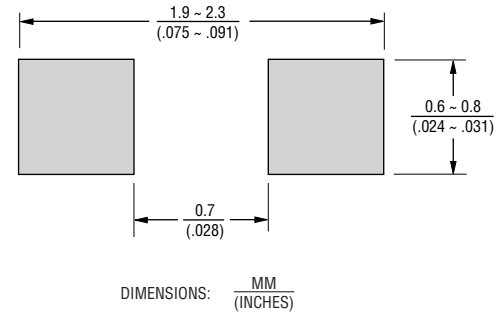
Series \_\_\_\_\_ **CE1608Q - 1N2 D**  
 Value Code \_\_\_\_\_  
 Tolerance \_\_\_\_\_  
 D = ±0.3 nH  
 J = ±5 %



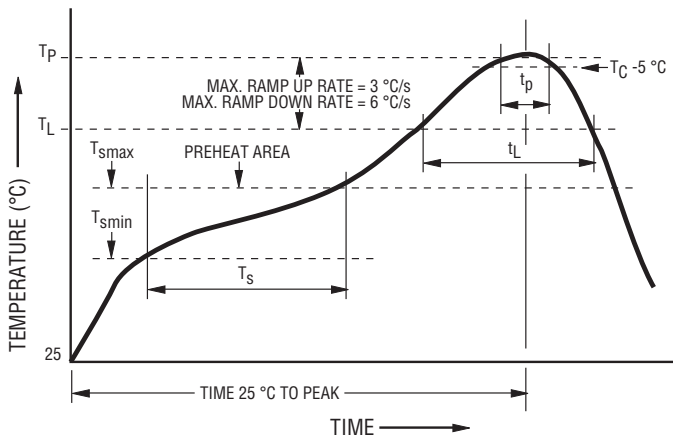
#### Product Dimensions



#### Recommended Layout



#### Soldering Profile

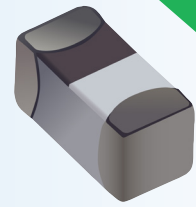


Profile Feature	Pb-Free Assembly
Preheat / Soak: Temperature Min. ( $T_{smin}$ ) Temperature Max. ( $T_{smax}$ ) Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	150 °C 200 °C 60~120 seconds
Ramp Up Rate ( $T_L$ to $T_p$ )	3 °C / second max.
Liquidous Temperature ( $T_L$ ) Time ( $t_L$ ) maintained above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

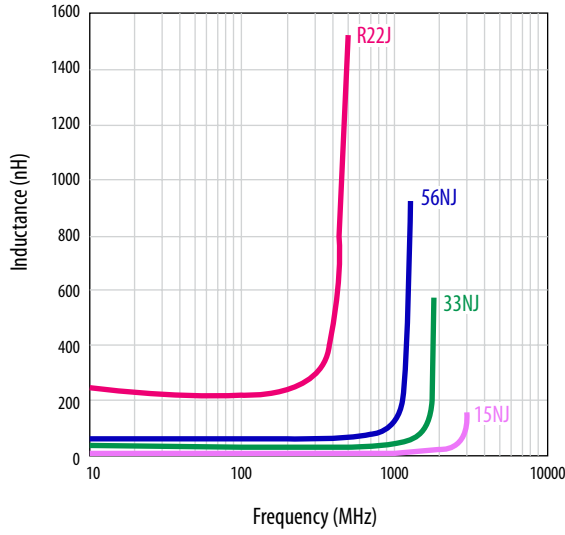
NOTE: The product has been tested under this reflow condition. Deviations from this, especially higher temperatures or longer durations, could impact performance.

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

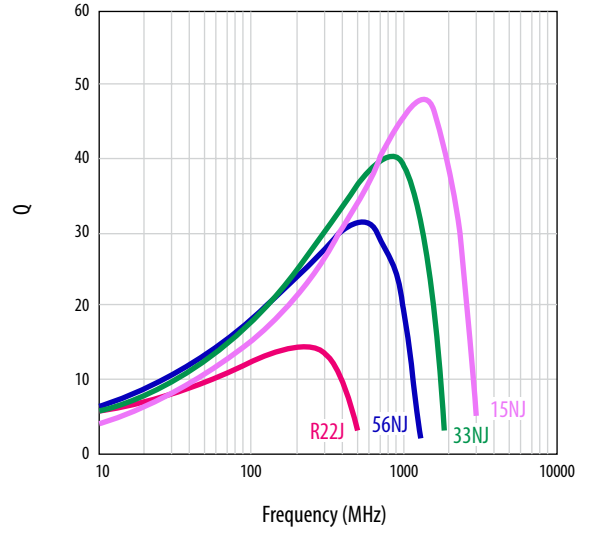
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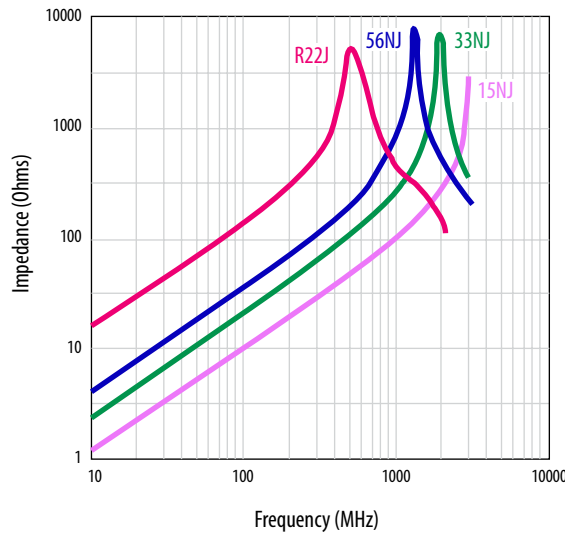
**Inductance vs. Frequency**



**Typical Q vs. Frequency**

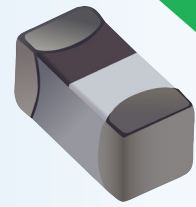


**Impedance vs. Frequency**

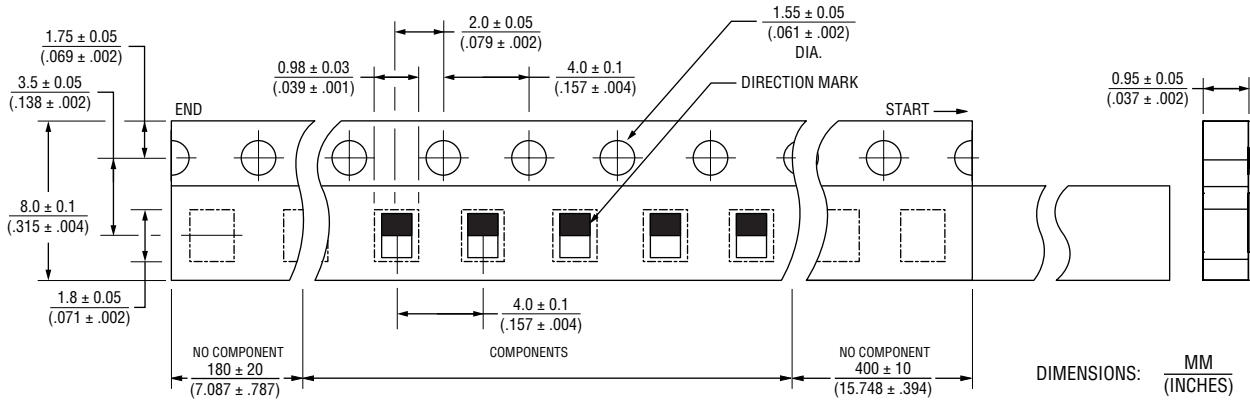
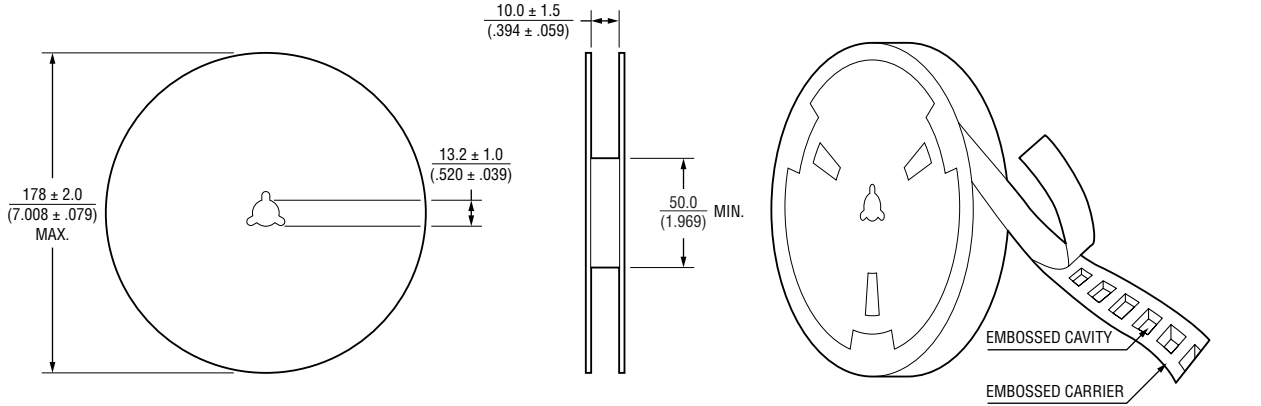


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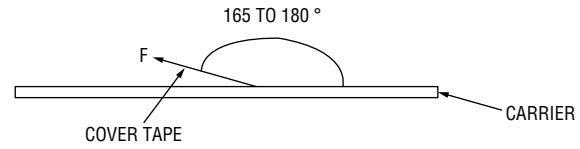
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**Packaging Specifications**



**USER DIRECTION OF FEED** →  
QTY: 4,000 PCS PER REEL



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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