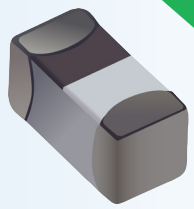
BOURNS®

CE0603M SERIES

Multilayer Chip Inductors



*RoHS COMPLIANT

Features

- 0603 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® CE0603M 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 0.3 mm.

The CE0603M Series features high SRF values of up to 20,000 MHz with inductance ranges from 0.6 to 75 nH and tight tolerances. With a DCR specification ranging from 0.07 to 10 Ω, rated current values from 100 to 850 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					
CE0603M-0N6_	0.6	±0.1 nH, ±0.2 nH, ±0.3 nH	14	500	20,000	0.07	850
CE0603M-0N7_	0.7				20,000	0.08	800
CE0603M-0N8_	0.8				18,000	0.08	800
CE0603M-0N9_	0.9				18,000	0.10	750
CE0603M-1N0_	1.0				17,000	0.10	750
CE0603M-1N1_	1.1				17,000	0.10	750
CE0603M-1N2_	1.2				17,000	0.10	750
CE0603M-1N3_	1.3	±0.1 nH, ±0.2 nH, ±0.3 nH			17,000	0.15	600
CE0603M-1N4_	1.4				16,000	0.15	600
CE0603M-1N5_	1.5				15,000	0.15	600
CE0603M-1N6_	1.6				15,000	0.15	600
CE0603M-1N7_	1.7				15,000	0.15	600
CE0603M-1N8_	1.8				15,000	0.15	600
CE0603M-1N9_	1.9				12,500	0.15	600
CE0603M-2N0_	2.0				12,500	0.15	600
CE0603M-2N1_	2.1				11,000	0.15	600
CE0603M-2N2_	2.2				11,000	0.15	600
CE0603M-2N3_	2.3				10,000	0.20	500

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

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* 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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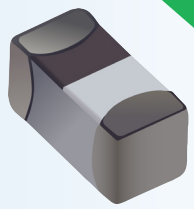

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Electrical Specifications (@ T_A = 25 °C Unless Otherwise Noted) - Continued

Bourns Part Number	Inductance		Q Min.	Test Frequency (MHz)	SRF (MHz) Min.	DCR (Ω) Max.	Rated Current (mA) Max.
	L (nH)	Tolerance** (%)					
CE0603M-2N4_	2.4	±0.1 nH, ±0.2 nH, ±0.3 nH	14	500	10,000	0.20	500
CE0603M-2N5_	2.5				10,000	0.20	500
CE0603M-2N6_	2.6				10,000	0.20	500
CE0603M-2N7_	2.7				10,000	0.20	500
CE0603M-2N8_	2.8				9,500	0.20	500
CE0603M-2N9_	2.9				9,500	0.20	500
CE0603M-3N0_	3.0				9,500	0.25	450
CE0603M-3N1_	3.1				8,000	0.25	450
CE0603M-3N2_	3.2				8,000	0.25	450
CE0603M-3N3_	3.3				8,000	0.25	450
CE0603M-3N4_	3.4				7,000	0.25	450
CE0603M-3N5_	3.5				7,000	0.25	450
CE0603M-3N6_	3.6				6,000	0.30	400
CE0603M-3N7_	3.7				6,000	0.30	400
CE0603M-3N8_	3.8				6,000	0.30	400
CE0603M-3N9_	3.9				5,700	0.30	400
CE0603M-4N0_	4.0				5,300	0.40	350
CE0603M-4N1_	4.1				5,300	0.40	350
CE0603M-4N2_	4.2				5,300	0.40	350
CE0603M-4N3_	4.3	±0.3 nH, ±3 %, ±5 %			5,300	0.40	350
CE0603M-4N7_	4.7				4,400	0.40	350
CE0603M-5N1_	5.1				4,200	0.40	350
CE0603M-5N6_	5.6				4,000	0.40	350
CE0603M-6N2_	6.2	±3 %, ±5 %			4,000	0.60	300
CE0603M-6N8_	6.8				3,900	0.60	300
CE0603M-7N5_	7.5				3,700	0.60	300
CE0603M-8N2_	8.2				3,600	0.70	250
CE0603M-9N1_	9.1				3,300	0.70	250
CE0603M-10N_	10				3,200	0.70	250
CE0603M-11N_	11				2,900	0.80	250
CE0603M-12N_	12		12		2,900	0.70	250
CE0603M-13N_	13				2,600	0.80	250
CE0603M-15N_	15				2,600	0.70	250
CE0603M-16N_	16				2,200	0.95	200
CE0603M-18N_	18				2,200	0.80	200
CE0603M-20N_	20				2,200	2.30	150
CE0603M-22N_	22				2,200	1.90	150
CE0603M-24N_	24				2,000	2.30	140
CE0603M-27N_	27				2,000	2.30	140
CE0603M-30N_	30		9		1,700	2.95	120
CE0603M-33N_	33			300	1,700	2.95	120

Note: Underscore indicates Inductance Tolerance Code:
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G = ±2 %, H = ±3 %, J = ±5 %

Continued on page 3

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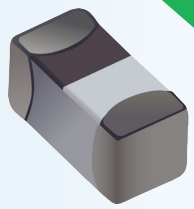

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Electrical Specifications (@ T_A = 25 °C Unless Otherwise Noted) - Continued

Bourns Part Number	Inductance		Q Min.	Test Frequency (MHz)	SRF (MHz) Min.	DCR (Ω) Max.	Rated Current (mA) Max.
	L (nH)	Tolerance** (%)					
CE0603M-36N_	36	±3 %, ±5 %	9	300	1,500	3.00	120
CE0603M-39N_	39				1,500	3.00	120
CE0603M-43N_	43				1,300	3.60	100
CE0603M-47N_	47				1,300	3.60	100
CE0603M-51N_	51				1,200	3.90	100
CE0603M-56N_	56				1,200	3.90	100
CE0603M-62N_	62		8		1,100	8.00	100
CE0603M-68N_	68				1,100	8.00	100
CE0603M-75N_	75				1,000	10.00	100

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 ..... 15,000 pcs. per reel

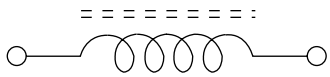
How to Order

CE0603M - 1N2 P

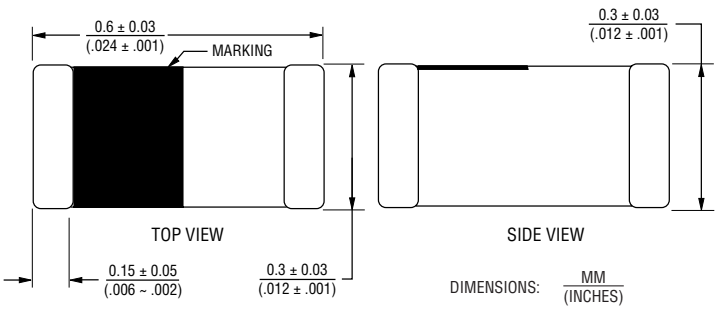
Series
Value Code
Tolerance

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

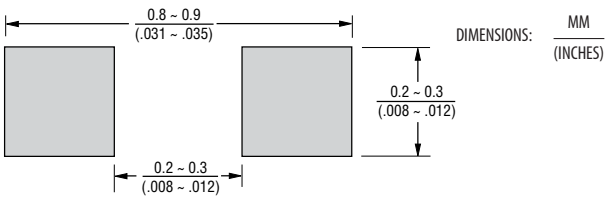
Electrical Schematic



Product Dimensions



Recommended Layout



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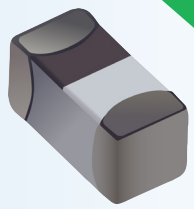

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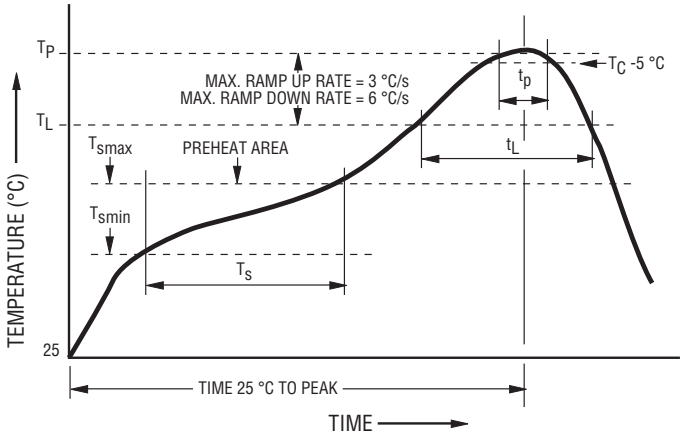
Soldering Profile



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

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.

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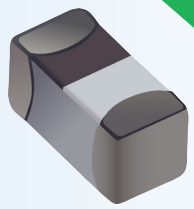

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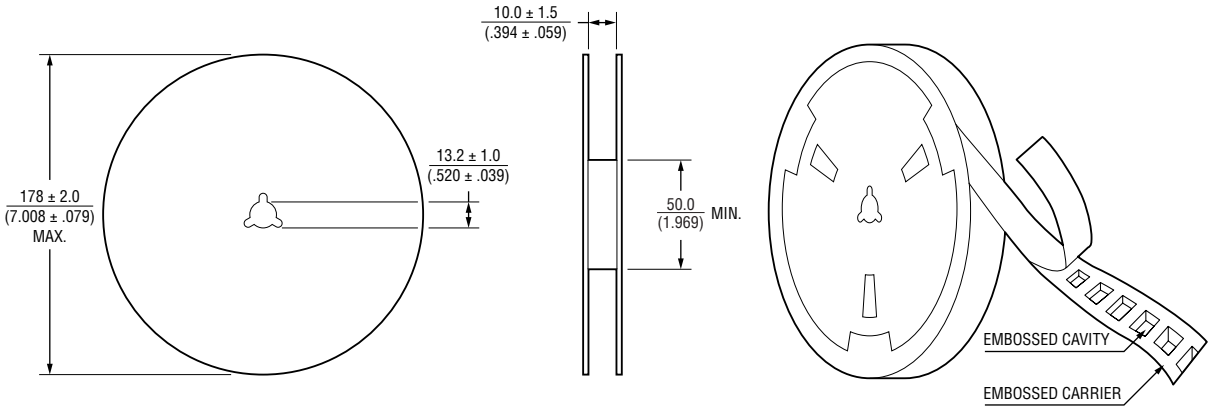
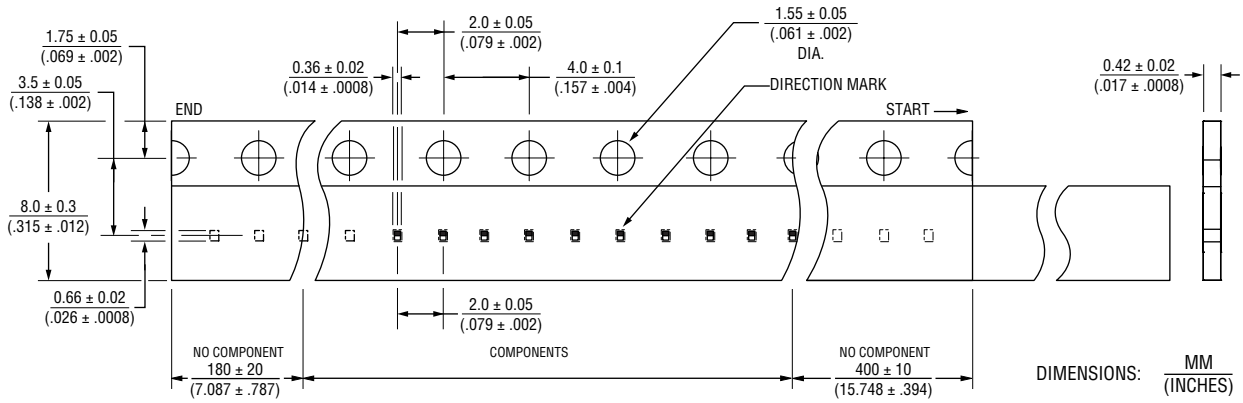
Packaging Specifications

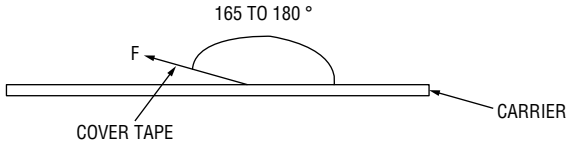




USER DIRECTION OF FEED

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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