Features

- Miniature size
- High self-resonant frequency
- High current
- Low DCR
- AEC-Q200 compliant
- RoHS compliant* and halogen free**

Applications

- Automotive systems
- Noise filters
- DC power lines

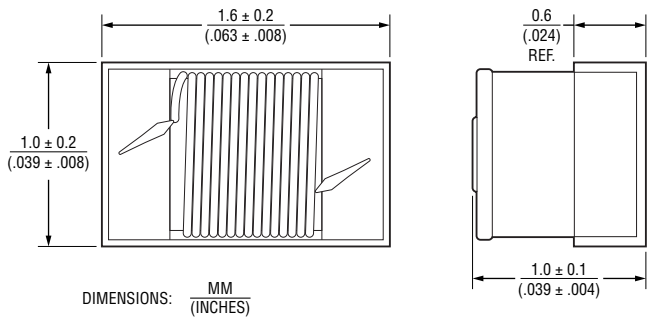
CWF1610A Series – 0603 Chip Inductors

Electrical Specifications @ 25 °C

Bourns Part No.	Inductance L (µH)	Q Typ.	L & Q Test Freq. / Voltage	SRF (MHz) Typ.	DCR (Ω) ±30 %	Irms[2] (mA) Typ.	Isat[3] (mA) Typ.
CWF1610A-R10x[1]	0.10	13	7.9 MHz / 0.5 V	1150	0.063	1400	1700
CWF1610A-R15x	0.15			1050	0.074	1300	1700
CWF1610A-R27x	0.27			1000	0.12	1100	1400
CWF1610A-R33x	0.33			1100	0.13	1000	1300
CWF1610A-R47x	0.47			900	0.18	900	1100
CWF1610A-R56x	0.56			630	0.20	800	1100
CWF1610A-R68x	0.68			510	0.22	750	900
CWF1610A-1R0x	1.0	16		390	0.32	700	860
CWF1610A-1R5x	1.5			160	0.40	600	720
CWF1610A-2R2x	2.2			103	0.56	580	600
CWF1610A-3R3x	3.3			66	0.70	500	500
CWF1610A-4R7x	4.7			51	0.97	420	400
CWF1610A-5R6x	5.6			47	1.10	380	380
CWF1610A-6R8x	6.8			43	1.50	340	340
CWF1610A-8R2x	8.2			40	1.68	300	300
CWF1610A-100x	10	14	2.5 MHz / 0.5 V	36	1.85	280	280
CWF1610A-150x	15			29	2.60	240	240
CWF1610A-180x	18			28	2.90	220	220
CWF1610A-220x	22			24	3.61	200	200

Notes:
1. "x" indicates Inductance Tolerance: K = ±10 %, M = ±20 %.
2. Irms: Heat rated current (Irms) will cause the coil temperature rise ≤40 °C without core loss.
3. Isat: Applying the current to coils, the inductance change shall be less than 20 % of initial value.

Product Dimensions



WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

* RoHS Directive 2015/863, Mar 31, 2015 and Annex.
** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.
Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

Additional Information

Click these links for more information:

PRODUCT | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

General Specifications

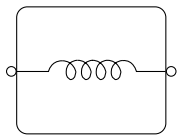
Operating Temperature
..... -55 °C to +125 °C
(Temperature rise included)
Storage Temperature
..... -55 °C to +125 °C
Temperature Rise .. ≤40 °C at rated Irms[1]
Saturation Current
..... Inductance drops ≤20 % at Isat
Moisture Sensitivity Level 1
ESD Classification (HBM) ..... N/A

Note 1: Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

Materials

Core ..... Ferrite
Wire ..... Enameled copper
Terminal Finish ..... Sn
Packaging ..... 4000 pcs. per 7-inch reel

Electrical Schematic

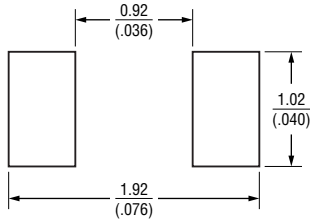


How to Order

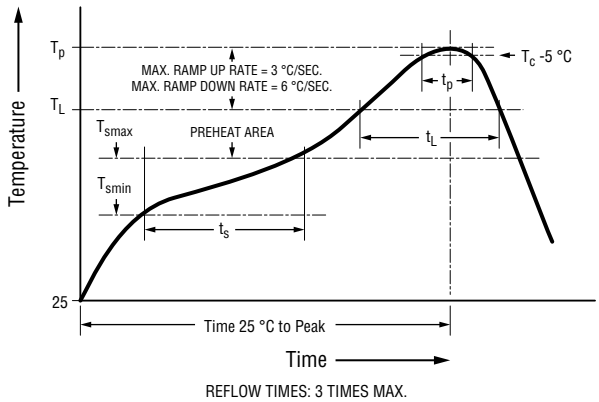
CWF1610A - R10 K

Model
Value Code (see table)
Tolerance
K = ±10 %
M = ±20 %

Recommended Layout



Soldering Profile

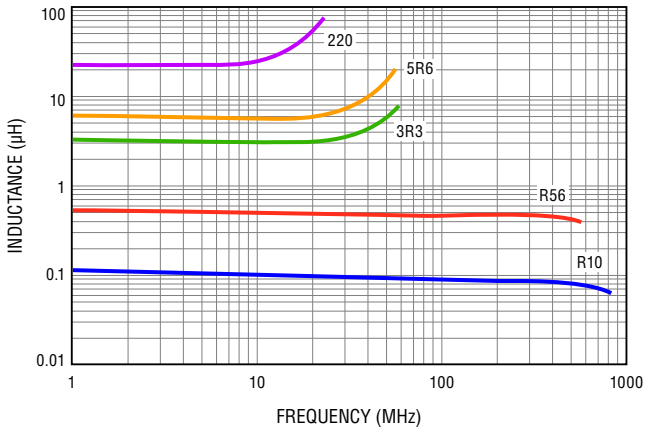


REFLOW TIMES: 3 TIMES MAX.

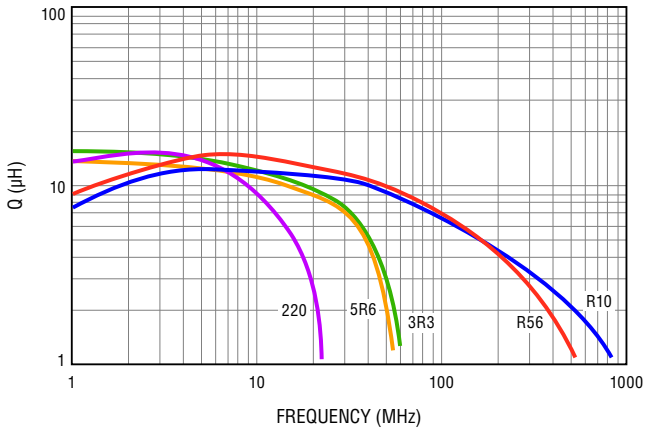
Profile Feature	Pb Free Assembly
Preheat - Temperature Min. (T_{smin}) - Temperature Max. (T_{smax}) - Time(t_s) from T_{smin} to T_{smax}	 150 °C 200 °C 60-120 seconds
Ramp-up Rate (T_L to T_p)	3 °C/second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L	217 °C 60-150 seconds
Reflow temperature	260 °C
Time (t_p) at T_c - 5 °C (T_p should be equal to or less than 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.

Typical Curves

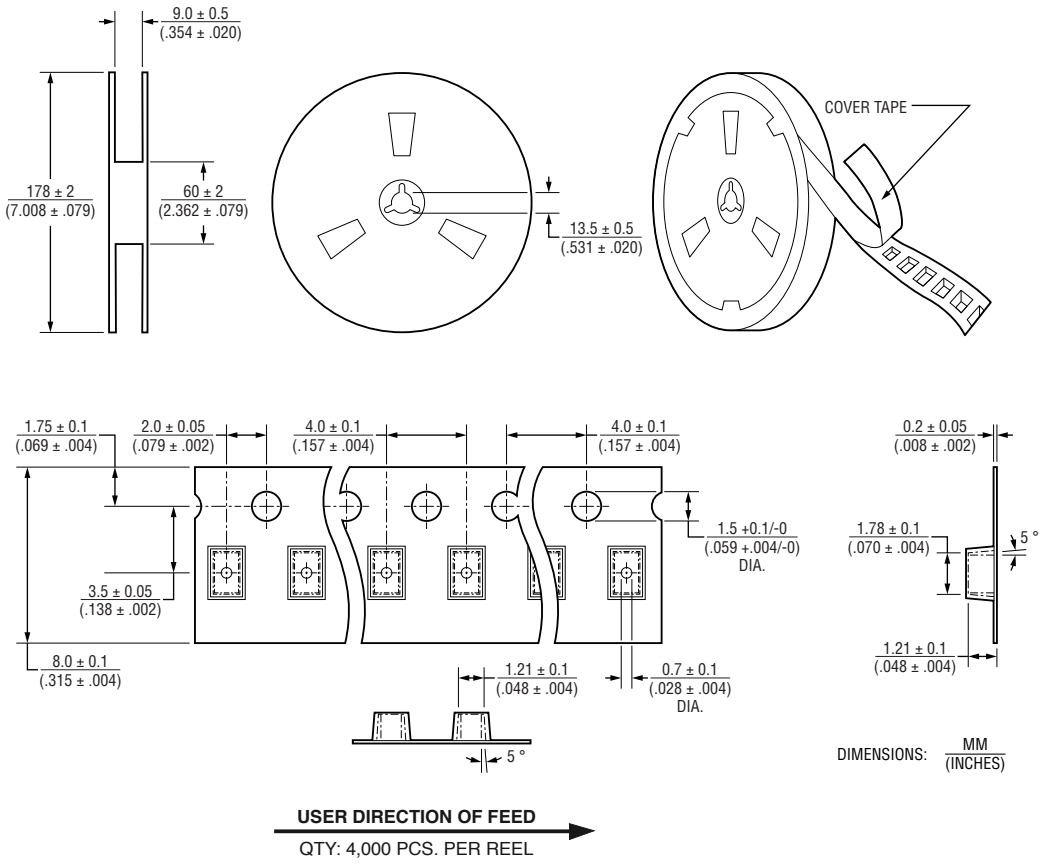
Inductance vs. Frequency



Q vs. Frequency



Packaging Specifications



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