

High-Reliability Air Core Inductors

ML561RAU
ML615RAU
ML643RAU



- Excellent Q factors – up to 180 at 100 MHz!
- Current handling as high as 57 Amps
- Inductance values from 22 to 257 nH

Terminations Tin-silver over copper

Ambient temperature –55°C to +125°C with Irms current

Maximum part temperature +155°C (ambient + temp rise).

Storage temperature Component: –55°C to +155°C.

Packaging: –55°C to +80°C

Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Temperature Coefficient of Inductance (TCL) +5 to +70 ppm/°C

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

Part number ¹	Inductance ² ±20% (nH)	Q ³ min	Q test freq (MHz)	SRF min ⁴ (MHz)	DCR (mOhm)		Irms (A) ⁵		Weight (g)
					typ	max	20°C rise	40°C rise	
ML561RAU23NMLZ	23.5	70	100	720	1.05	1.20	18.0	26.0	0.49
ML561RAU46NMLZ	46.5	110	100	400	1.50	1.62	17.9	25.5	0.65
ML561RAU79NMLZ	79.0	110	50	400	1.95	2.11	17.8	25.0	0.82
ML561RAU111MLZ	111	120	50	360	2.53	2.73	15.7	22.0	0.98
ML561RAU141MLZ	146	110	50	350	3.08	3.33	14.1	19.3	1.23
ML615RAU22NMLZ	22.0	150	100	640	0.48	0.55	40.5	57.0	2.20
ML615RAU42NMLZ	42.0	160	50	440	0.70	0.77	38.0	52.0	2.70
ML615RAU66NMLZ	66.0	160	50	400	0.90	0.99	35.0	48.0	3.20
ML615RAU90NMLZ	90.0	140	50	320	1.10	1.21	33.0	45.0	3.70
ML615RAU111MLZ	117	140	50	320	1.30	1.43	32.0	44.0	4.20
ML643RAU33NMLZ	33	180	100	790	0.63	0.74	32.5	43.0	1.60
ML643RAU66NMLZ	66	150	50	370	0.90	1.00	31.5	42.5	2.30
ML643RAU111MLZ	108	150	50	300	1.20	1.34	31.0	42.0	3.10
ML643RAU151MLZ	155	150	50	280	1.44	1.60	29.4	39.7	3.60
ML643RAU201MLZ	202	150	50	255	1.70	1.82	26.3	35.8	4.40
ML643RAU251MLZ	257	150	50	245	1.94	2.15	24.9	34.5	5.00

1. When ordering, please specify **screening** code:

ML643RAU251MLZ

Screening: Z = Unscreened

Y = Unscreened (SLDC Option A)

W = Unscreened (SLDC Option B)

H = Coilcraft CP-SA-10001 Group A

G = Coilcraft CP-SA-10001 Group A (SLDC Option A)

D = Coilcraft CP-SA-10001 Group A (SLDC Option B)

1/2/3 = EEE-INST-002 (Family 1) Level 1/2/3

4/5 = MIL-STD-981 (Family 04) Class B=4, Class S=5

F = ESCC3201 (F4 operational life performed at 105°C)

- Screening performed to the document's latest revision.

- Lot qualification (Group B) available.

- Testing T and U have been replaced with more detailed codes 4, 5, and 1, 2, 3, respectively. Codes T and U can still be used, if necessary. Custom testing also available.

2. Inductance measured at 1 MHz, 0.1 Vrms, 0 A using an Agilent/HP HP4291A impedance analyzer with an Agilent/HP 16193A test fixture or equivalents.

3. Q measured at specified frequency using an Agilent/HP 4291A impedance analyzer or equivalent and an Agilent 16092A (or equivalent) test fixture.

4. SRF measured using an Agilent/HP 8753 network analyzer or equivalent and a Coilcraft CCF1199 test fixture.

5. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings

6. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



CRITICAL PRODUCTS & SERVICES

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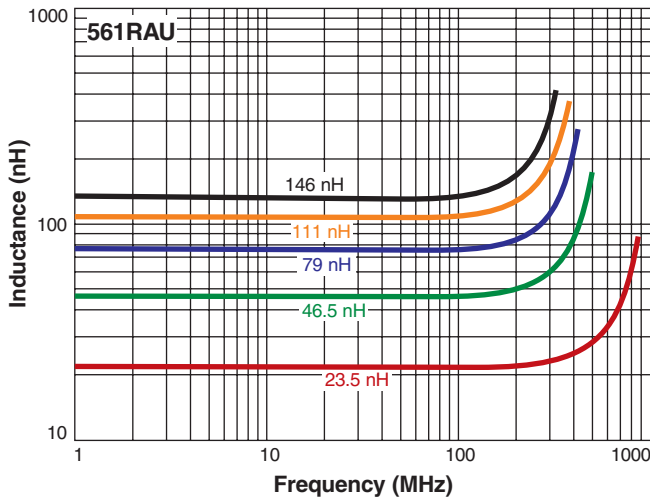
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Document ML893-1 Revised 12/20/23

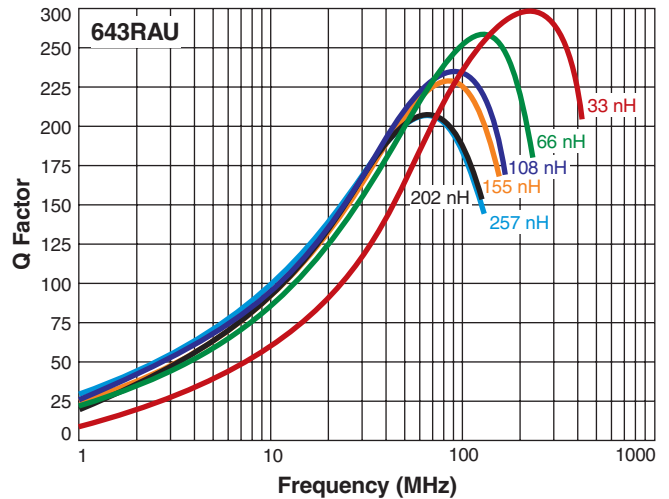
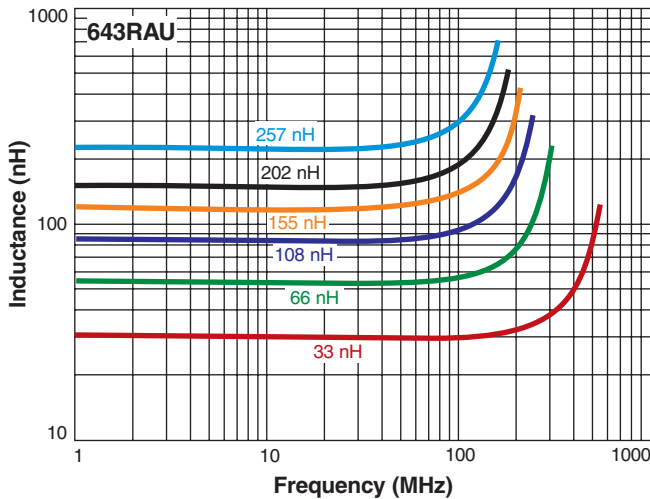
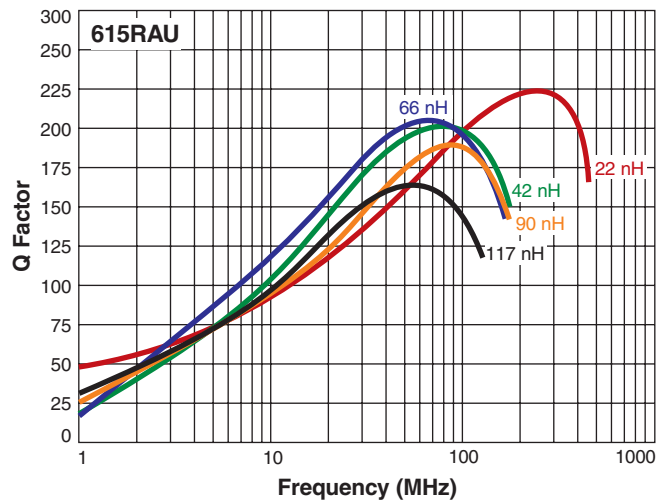
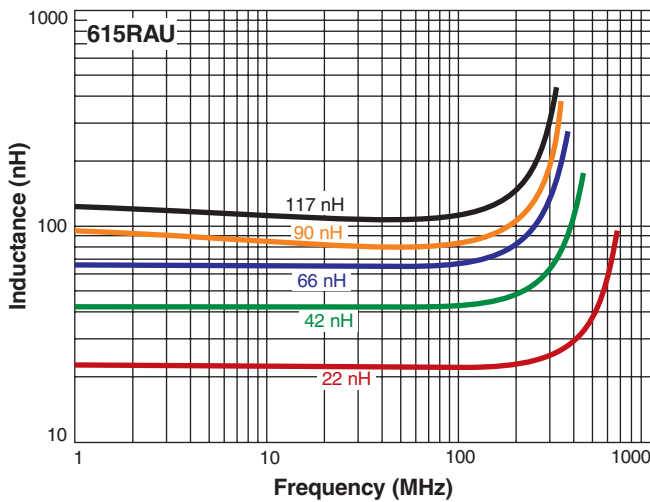
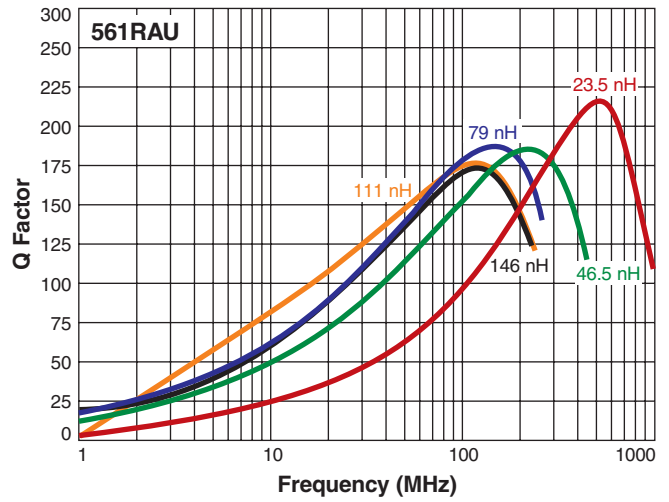
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Air Core Inductors – ML561RAU, ML615RAU, ML643RAU

L vs Frequency



Q vs Frequency



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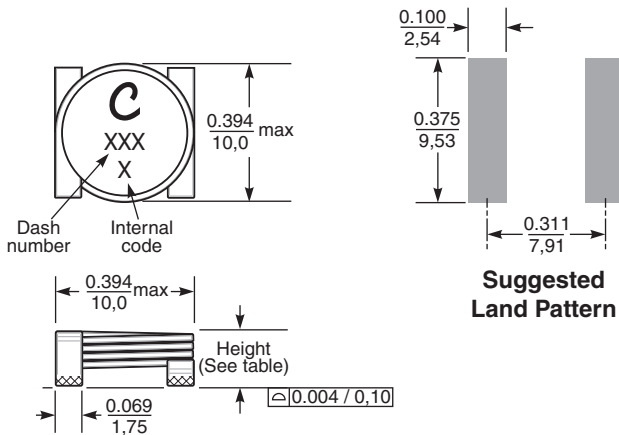
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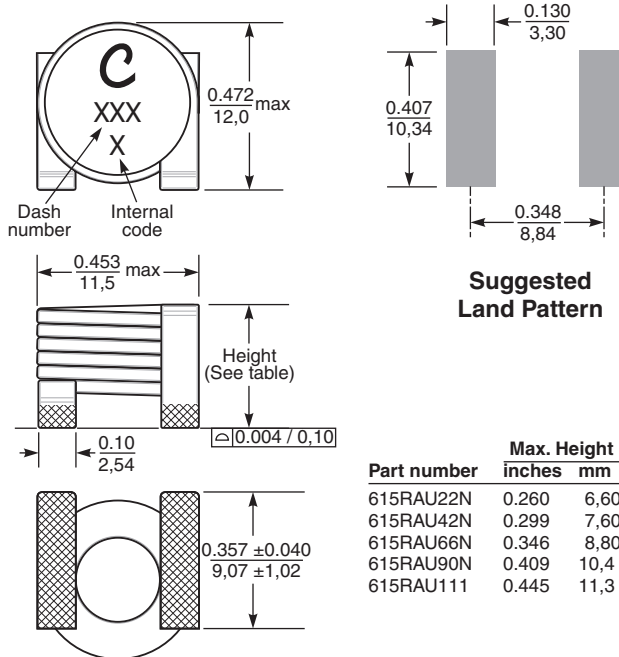
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ML561RAU



Part number	Max. Height	
	inches	mm
561RAU23N	0.142	3,60
561RAU46N	0.161	4,10
561RAU79N	0.189	4,80
561RAU111	0.220	5,60
561RAU141	0.240	6,10

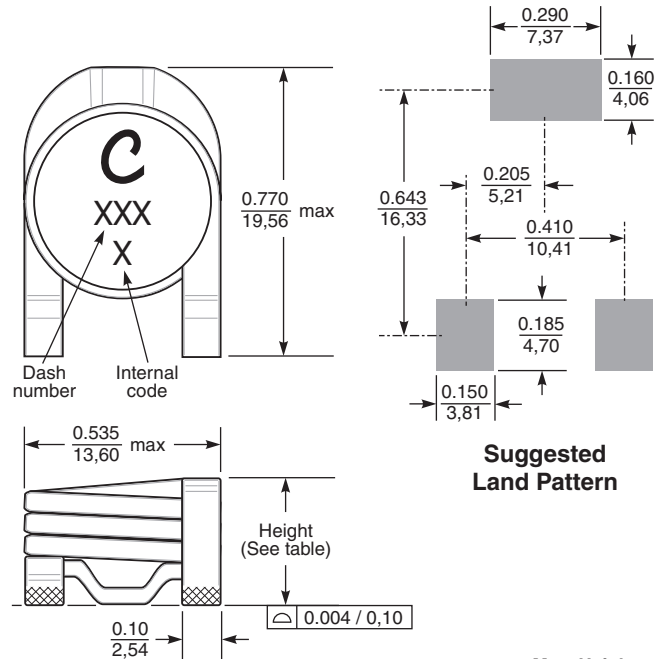
ML615RAU



Part number	Max. Height	
	inches	mm
615RAU22N	0.260	6,60
615RAU42N	0.299	7,60
615RAU66N	0.346	8,80
615RAU90N	0.409	10,4
615RAU111	0.445	11,3

All dimensions are in $\frac{\text{inches}}{\text{mm}}$.

ML643RAU



Part number	Max. Height	
	inches	mm
643RAU33N	0.236	5,99
643RAU66N	0.279	7,09
643RAU111	0.327	8,31
643RAU151	0.362	9,19
643RAU201	0.409	10,4
643RAU251	0.449	11,4

Enhanced crush resistant Packaging

- ML561RAU23N** 1000/13" reel
- ML561RAU46N** 900/13" reel
- ML561RAU79N** 800/13" reel
- Plastic tape: 24 mm wide, 0.35 mm thick, 16 mm pocket spacing
- ML561RAU111** 700/13" reel
- ML561RAU141** 600/13" reel
- Plastic tape: 24 mm wide, 0.40 mm thick, 16 mm pocket spacing
- ML615RAU22N** 450/13" reel
- ML615RAU42N** 400/13" reel
- ML615RAU66N** 350/13" reel
- ML615RAU90N** 300/13" reel
- ML615RAU111** 250/13" reel
- Plastic tape: 24 mm wide, 0.50 mm thick, 20 mm pocket spacing
- ML643RAU33N** 500/13" reel
- ML643RAU66N** 450/13" reel
- ML643RAU111** 400/13" reel
- ML643RAU151** 350/13" reel
- ML643RAU201** 300/13" reel
- ML643RAU251** 250/13" reel
- Plastic tape: 44 mm wide, 0.50 mm thick, 20 mm pocket spacing

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