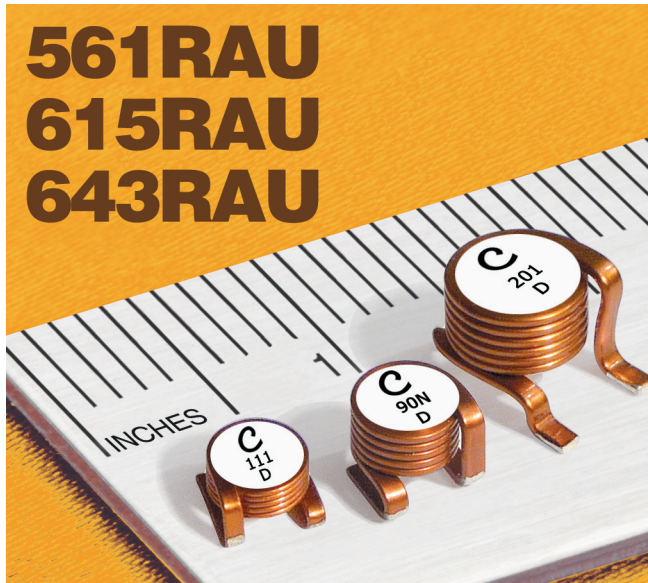


# High-Reliability Air Core Inductors

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** RoHS compliant tin-silver over copper

**Ambient temperature** –55°C to +125°C with Irms current, +125°C to +155°C with derated current

**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 <sup>1</sup>	Inductance <sup>2</sup> ±20% (nH)	Q <sup>3</sup> min	Q test freq (MHz)	SRF min <sup>4</sup> (MHz)	DCR (mOhm)		Irms (A) <sup>5</sup>		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 **testing** code:

ML643RAU251MLZ

**Testing:** Z = COTS

H = Screening per Coilcraft  
CP-SA-10001

N = Screening per Coilcraft  
CP-SA-10003

C = Custom screening (please  
specify when ordering)

2. Inductance measured at 1.0 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 a Coilcraft CCF1244 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.

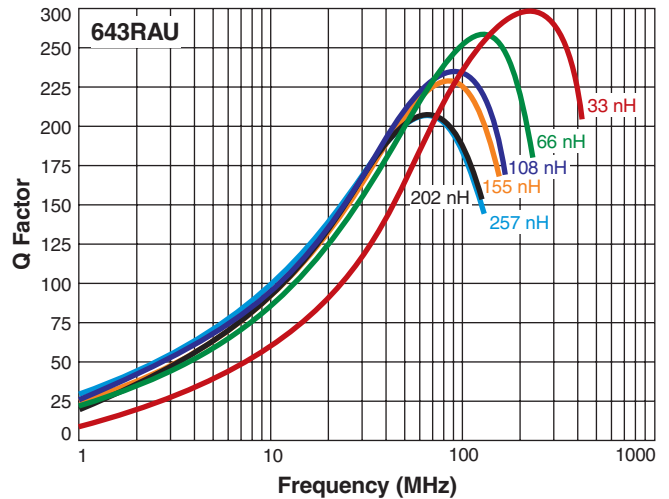
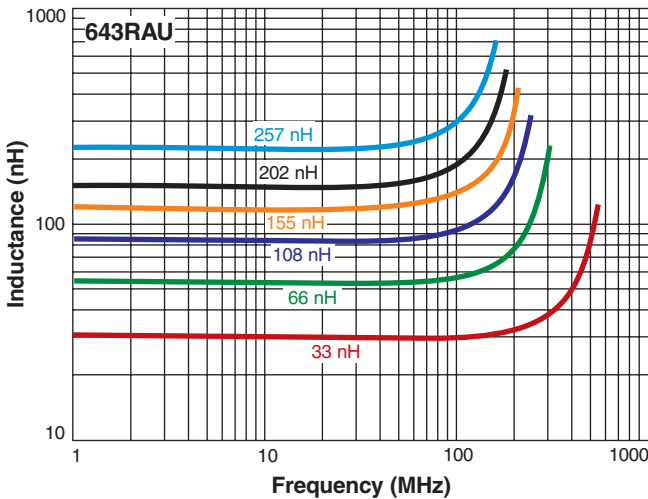
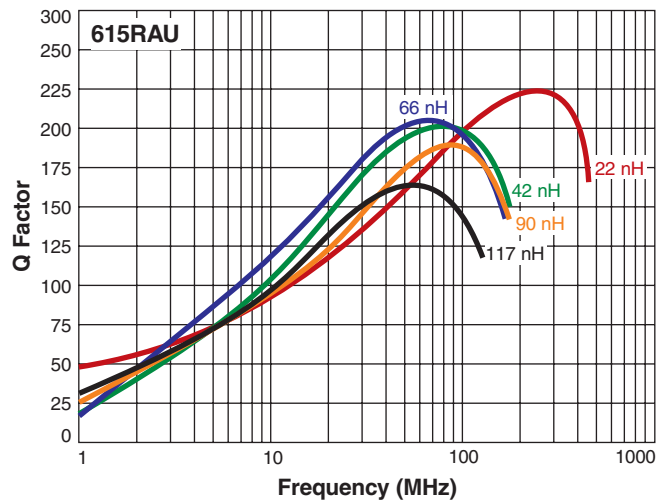
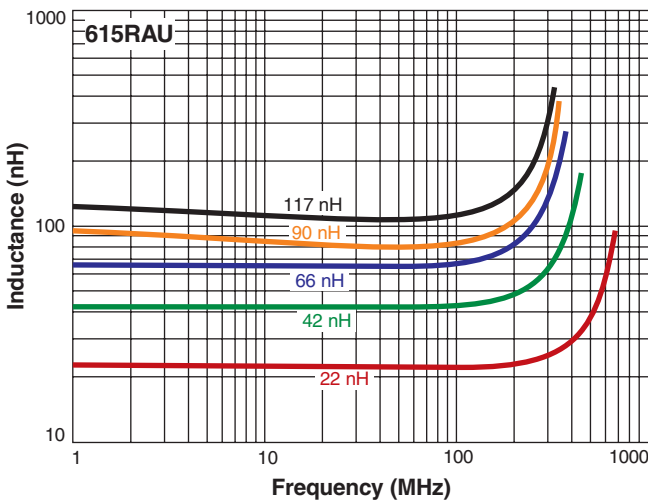
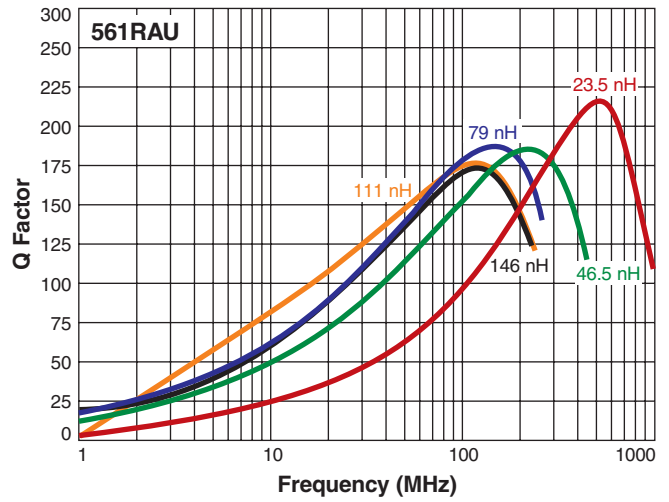
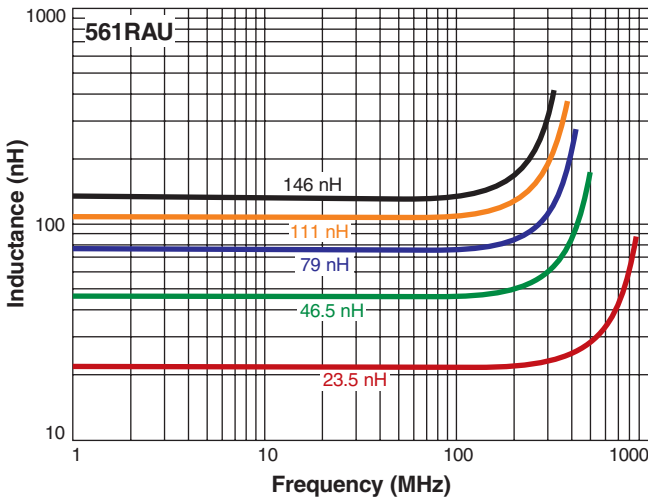
6. Electrical specifications at 25°C.

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

# Air Core Inductors – ML561RAU, ML615RAU, ML643RAU

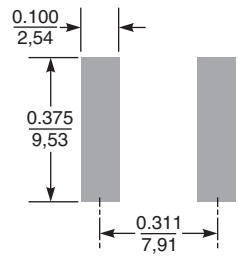
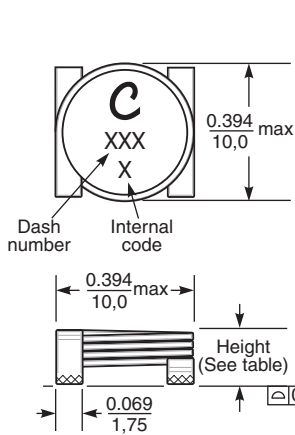
L vs Frequency

Q vs Frequency

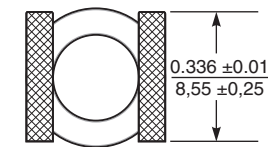


# Air Core Inductors – ML561RAU, ML615RAU, ML643RAU

## ML561RAU

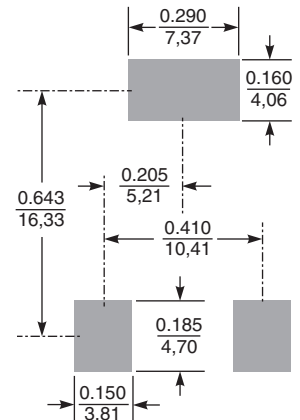
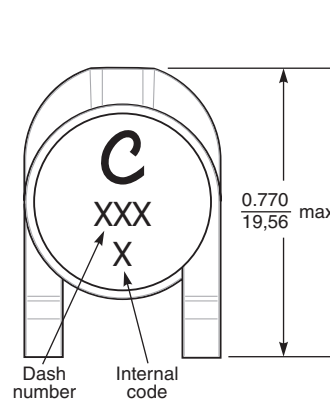


Recommended Land Pattern

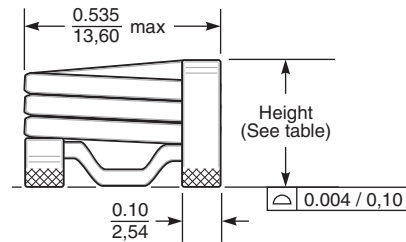


Part number	Height	
	inches	mm
561RAU23N	0.142	3,60
561RAU46N	0.161	4,10
561RAU79N	0.189	4,80
561RAU111	0.220	5,60
561RAU141	0.240	6,10

## ML643RAU

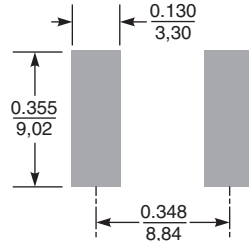
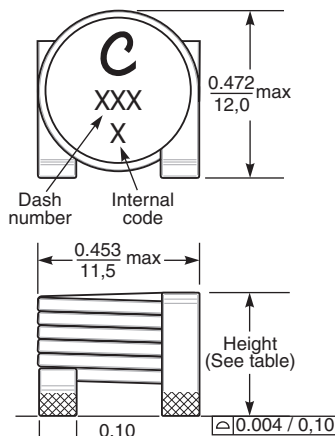


Recommended Land Pattern

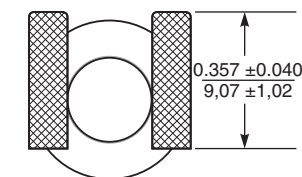


Part number	Height	
	inches	mm
643RAU33N	0.236	5,99
643RAU66N	0.279	7,09
643RAU111	0.327	8,31
643RAU151	0.362	9,19
643RAU201	0.409	10,4
643RAU251	0.449	11,4

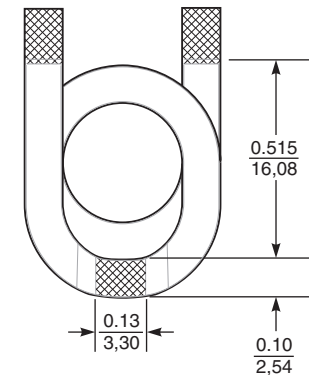
## ML615RAU



Recommended Land Pattern



Part number	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



### Enhanced crush resistant Packaging

- ML561RAU23N 250/7" reel
  - ML561RAU46N 250/7" reel
  - ML561RAU79N 200/7" reel
  - ML561RAU111 175/7" reel
  - ML561RAU141 150/7" reel
- Plastic tape: 24 mm wide, 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, 20 mm pocket spacing

- ML643RAU33N 500/13" reel
  - ML643RAU66N 450/13" reel
  - ML643RAU111 400/13" reel
  - ML643RAU151 350/13" reel
  - ML643RAU201 350/13" reel
  - ML643RAU251 250/13" reel
- Plastic tape: 44 mm wide, 20 mm pocket spacing

All dimensions are in inches/mm.