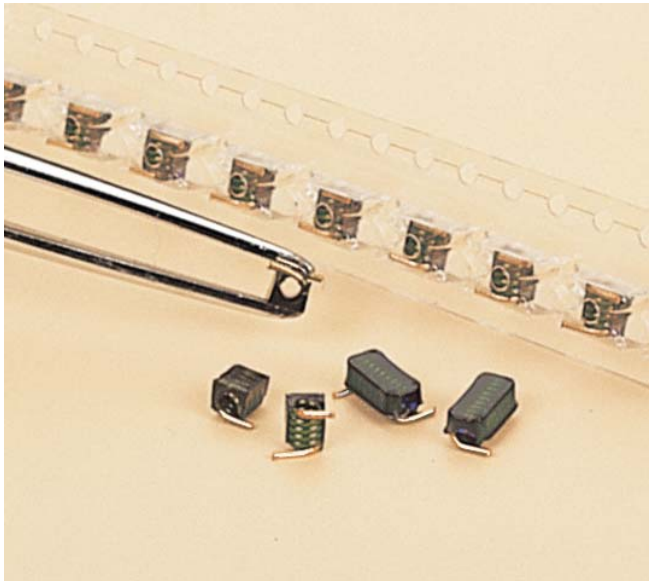
High-Reliability Air Core Inductors

ML439RAT
ML470RAT



- Small air core inductors feature high Q and tight tolerances
- High temperature materials allow operation in ambient temperatures up to 155°C.

Terminations Tin-silver over copper.

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

Storage temperature Component: –55°C to +155°C. Packaging: –40°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)

Enhanced crush-resistant packaging
ML439RAT: 700/7″ reel Plastic tape: 12 mm wide, 0.32 mm thick, 8 mm pocket spacing, 3.3 mm pocket depth
ML470RAT: 500/7″ reel Plastic tape: 16 mm wide, 0.28 mm thick, 8 mm pocket spacing, 3.4 mm pocket depth

PCB washing Only pure water or alcohol recommended

Part number[1]	Turns	L[2] (nH)	Percent tol	Q[3] min	SRF min[4] (GHz)	DCR max[5] (mOhm)	Imax (A)	Weight (mg)
ML439RAT2N5KLZ	1	2.5	10	145	12.5	1.1	4	31
ML439RAT5N0_LZ	2	5.0	5,2	140	6.5	1.8	4	42
ML439RAT8N0_LZ	3	8.0	5,2	140	5.0	2.6	4	52
ML439RAT13N_LZ	4	12.5	5,2	137	3.3	3.4	4	65
ML439RAT19N_LZ	5	18.5	5,2	132	2.5	3.9	4	78
ML470RAT18N_LZ	6	17.5	5,2	100	2.2	4.5	4	100
ML470RAT22N_LZ	7	22.0	5,2	102	2.1	5.2	4	110
ML470RAT28N_LZ	8	28.0	5,2	105	1.8	6.0	4	118
ML470RAT36N_LZ	9	35.5	5,2	112	1.5	6.8	4	133
ML470RAT43N_LZ	10	43.0	5,2	106	1.2	7.9	4	147

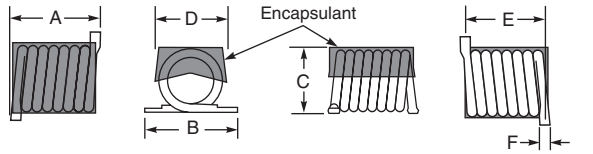
1. When ordering, please specify **tolerance** and **testing** codes:

ML470RAT43N G LZ

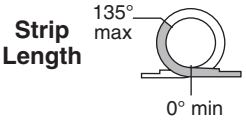
Tolerance: **G** = 2% **J** = 5%
Testing: **Z** = COTS
H = Screening per Coilcraft CP-SA-10001
N = Screening per Coilcraft CP-SA-10003
C = Custom screening (please specify when ordering)

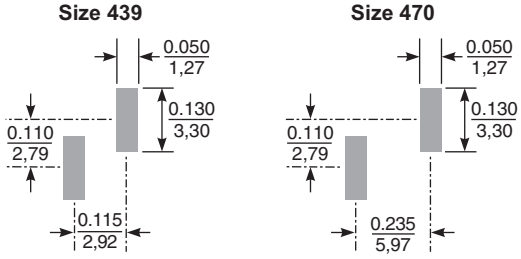
2. Inductance measured at 150 MHz on an Agilent/HP 4286A or equivalent with a Coilcraft SMD-A test fixture and correlation.
3. Q measured at 150 MHz on an Agilent/HP 4291A or equivalent with a 16193-A test fixture or equivalent.
4. SRF measured on an Agilent/HP 8753ES network analyzer or equivalent and a test fixture with an air gap.
5. DCR measured on a Keithley 580 Micro-Ohmmeter or equivalent.
6. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.



Size	A max	B max	C max	D	E	F max
439	0.155 3,94	0.175 4,45	0.124 3,15	0.125 ±0.010 3,18 ±0,25	0.115 ±0.010 2,92 ±0,25	0.029 0,74
470	0.270 6,86	0.175 4,45	0.124 3,15	0.125 ±0.010 3,18 ±0,25	0.230 ±0.015 5,84 ±0,38	0.029 0,74





Suggested Land Patterns

Dimensions are in inches / mm

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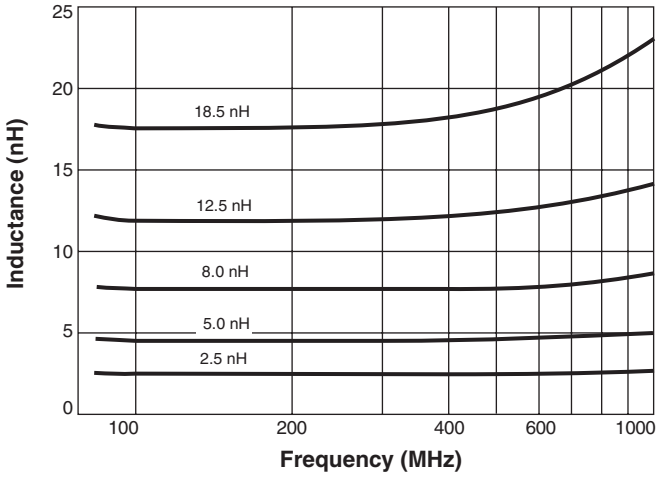
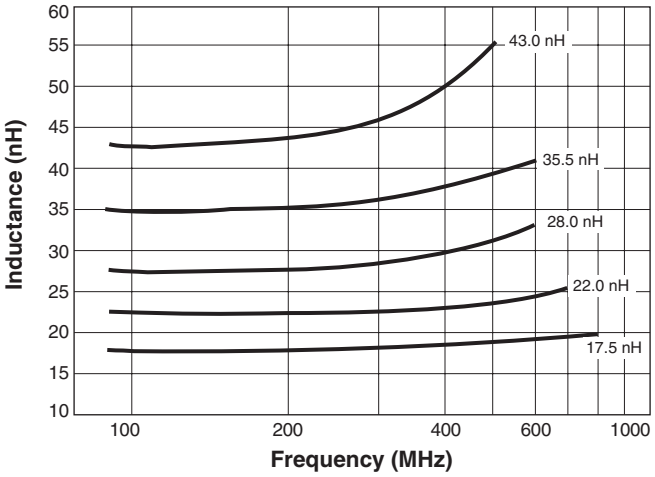
ML439RAT/ML470RAT Air Core Inductors

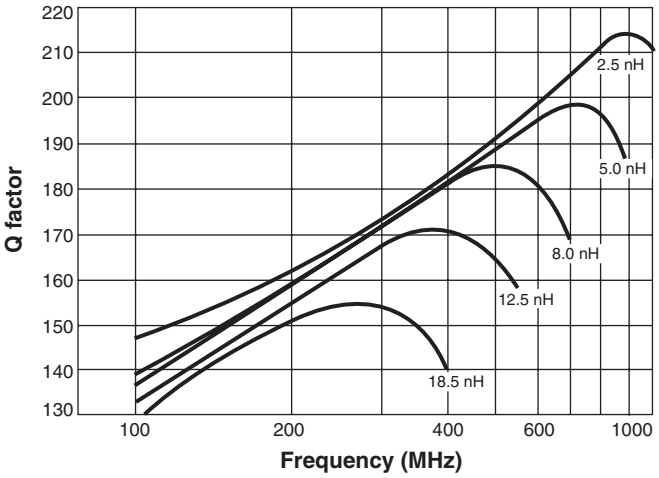
L vs Frequency – ML439RAT



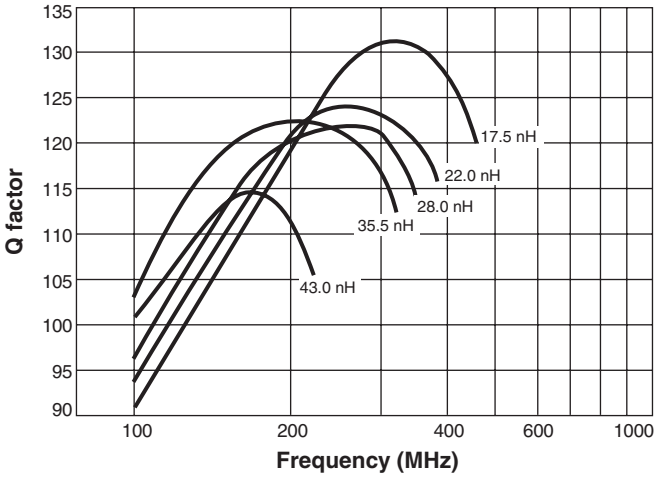
L vs Frequency – ML470RAT



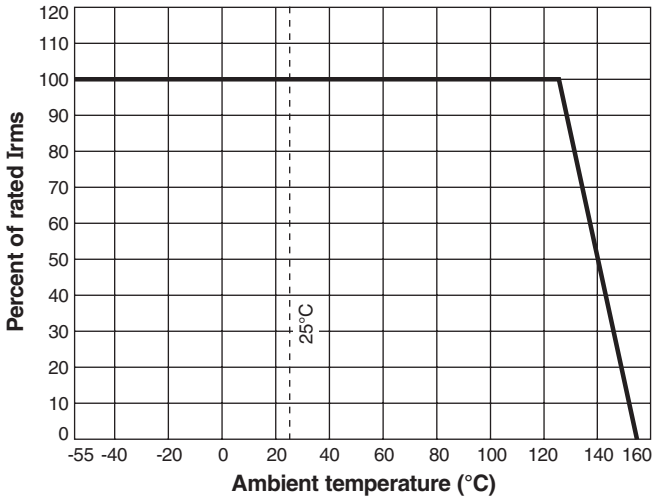
Q vs Frequency – ML439RAT



Q vs Frequency – ML470RAT



Typical Current Derating



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