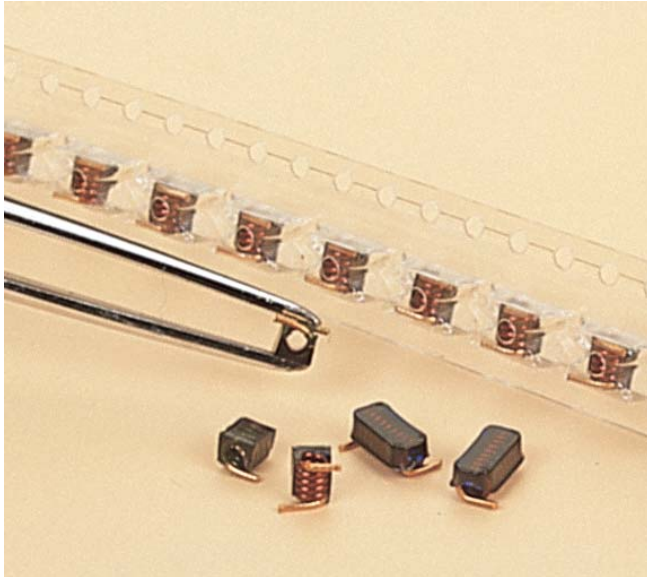


Outgassing Compliant Air Core Inductors AE439RAT AE470RAT



- High temperature materials allow operation in ambient temperatures up to 155°C.
- Passes NASA low outgassing specifications
- Tin-lead (Sn-Pb) terminations ensures the best possible board adhesion

Terminations Tin-lead (63/37) over copper

Ambient temperature -55°C to +125°C with I_{max} 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)

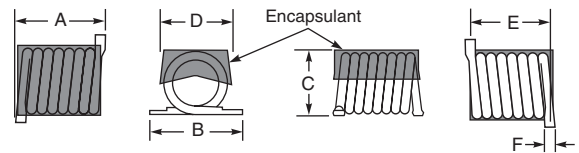
Enhanced crush-resistant packaging

AE439RAT: 700/7" reel Plastic tape: 12 mm wide, 0.32 mm thick, 8 mm pocket spacing, 3.3 mm pocket depth

AE470RAT: 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)	I _{max} (A)	Weight (mg)
AE439RAT2N5KSZ	1	2.5	10	145	12.5	1.1	4	31
AE439RAT5N0_SZ	2	5.0	5,2	140	6.5	1.8	4	42
AE439RAT8N0_SZ	3	8.0	5,2	140	5.0	2.6	4	52
AE439RAT13N_SZ	4	12.5	5,2	137	3.3	3.4	4	65
AE439RAT19N_SZ	5	18.5	5,2	132	2.5	3.9	4	78
AE470RAT18N_SZ	6	17.5	5,2	100	2.2	4.5	4	100
AE470RAT22N_SZ	7	22.0	5,2	102	2.1	5.2	4	110
AE470RAT28N_SZ	8	28.0	5,2	105	1.8	6.0	4	118
AE470RAT36N_SZ	9	35.5	5,2	112	1.5	6.8	4	133
AE470RAT43N_SZ	10	43.0	5,2	106	1.2	7.9	4	147



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

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

AE470RAT43N G SZ

Tolerance: G = 2% J = 5%

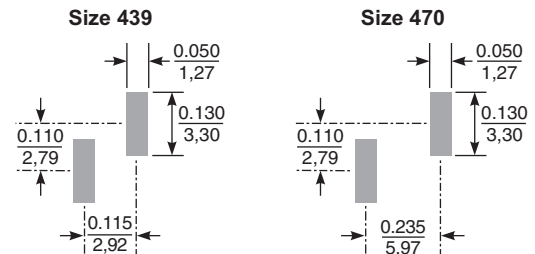
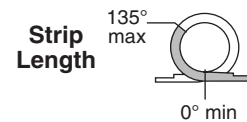
Testing: Z = COTS

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 8722ES 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.



Suggested Land Patterns

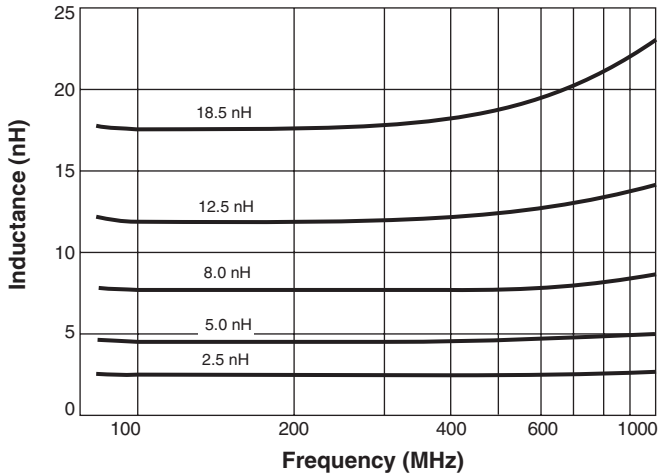
Dimensions are in $\frac{\text{inches}}{\text{mm}}$

S-Parameter files
ON OUR WEB SITE OR CD

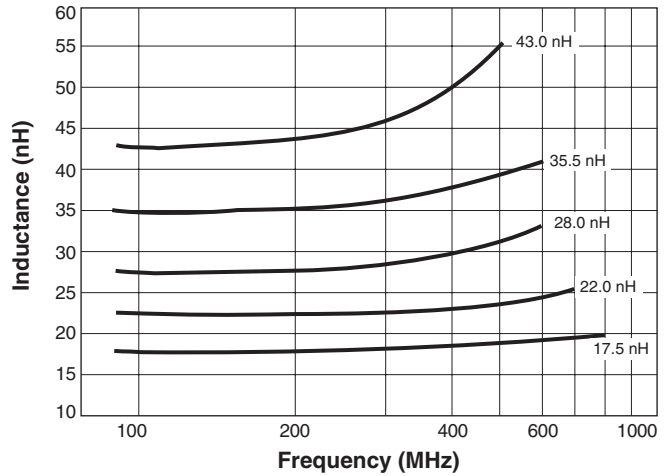
SPICE models
ON OUR WEB SITE OR CD

AE439RAT/AE470RAT Air Core Inductors

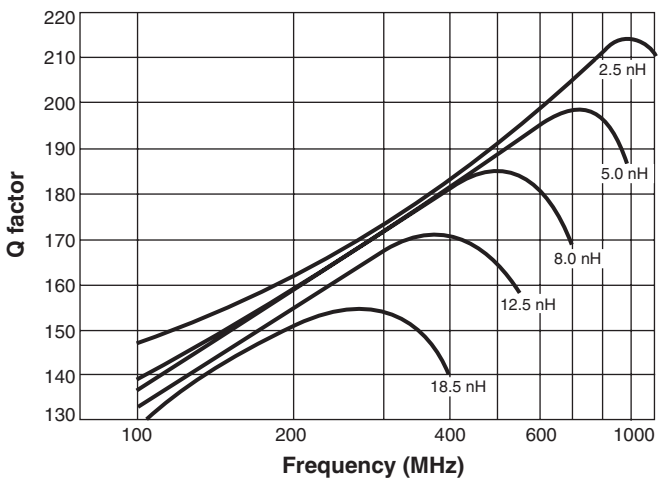
L vs Frequency – AE439RAT



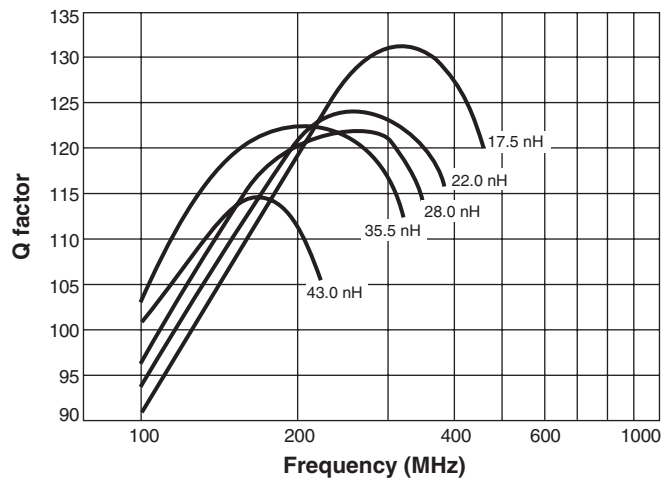
L vs Frequency – AE470RAT



Q vs Frequency – AE439RAT



Q vs Frequency – AE470RAT



Typical Current Derating

