

# 200°C Air Core Inductors AT475RAT



- High Q over a wide range of frequencies
- Special materials allow operation in ambient temperatures as low as  $-60^{\circ}\text{C}$  and up to  $200^{\circ}\text{C}$ .
- Passes NASA low outgassing specifications

**Terminations** Tin-lead (63/37) over copper

**Ambient temperature**  $-60^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$  with  $I_{\text{max}}$  current

**Maximum part temperature**  $+200^{\circ}\text{C}$  (ambient + temp rise).

**Storage temperature** Component:  $-60^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$ .  
Tape and reel packaging:  $-55^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$

**Resistance to soldering heat** Max three 40 second reflows at  $+260^{\circ}\text{C}$ , parts cooled to room temperature between cycles

**Temperature Coefficient of Inductance (TCL)**  $+5$  to  $+70$  ppm/ $^{\circ}\text{C}$

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at  $<30^{\circ}\text{C}$  / 85% relative humidity)

**Enhanced crush-resistant packaging** 500 per 7" reel  
Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing, 4.2 mm pocket depth

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance	Q <sup>3</sup> typ	Q <sup>3</sup> min	SRF min <sup>4</sup> (GHz)	DCR max <sup>5</sup> (mOhm)	I <sub>max</sub> (A)
AT475RAT22N_SZ	22	5,2	135	100	3.2	4.2	3.0
AT475RAT27N_SZ	27	5,2	135	100	2.7	4.0	3.5
AT475RAT33N_SZ	33	5,2	130	100	2.5	4.8	3.0
AT475RAT39N_SZ	39	5,2	135	100	2.1	4.4	3.0
AT475RAT47N_SZ	47	5,2	135	100	2.1	5.6	3.0
AT475RAT56N_SZ	56	5,2	125	100	1.5	6.2	3.0
AT475RAT68N_SZ	68	5,2	120	100	1.5	8.2	2.5
AT475RAT82N_SZ	82	5,2	120	100	1.3	9.4	2.5
AT475RATR10_SZ	100	5,2	115	100	1.2	12.3	1.7
AT475RATR12_SZ	120	5,2	125	100	1.1	17.3	1.5
AT475RATR15_SZ	150	5,2	145	100	0.75	33.0	1.2

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

**AT475RATR15GSZ**

**Tolerance:** G = 2% J = 5%

**Testing:** Z = Unscreened

H = Group A screening per Coilcraft CP-SA-10001

T = Screening per MIL-STD-981

U = Screening per EEE-INST-002

F = Screening per ESCC 3201

All screening performed to the document's latest revision

Custom screening also available

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 16193A test fixture or equivalent.

4. SRF measured on an Agilent/HP 8753ES or equivalent with a Coilcraft CCF1268 test fixture.

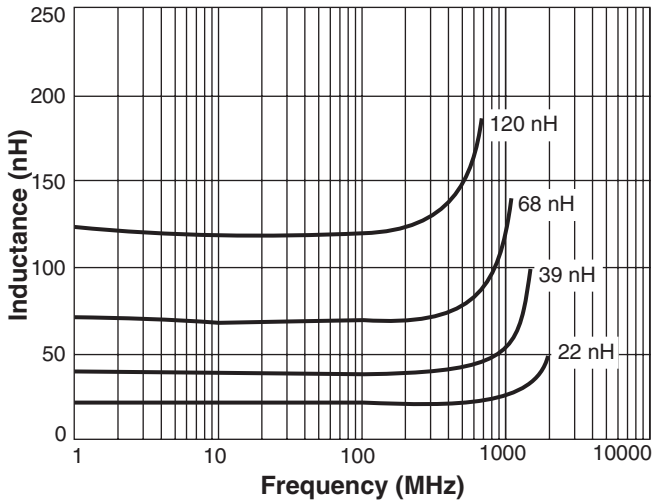
5. DCR measured on a Keithley 580 Micro-Ohmmeter or equivalent.

6. Electrical specifications at  $25^{\circ}\text{C}$ .

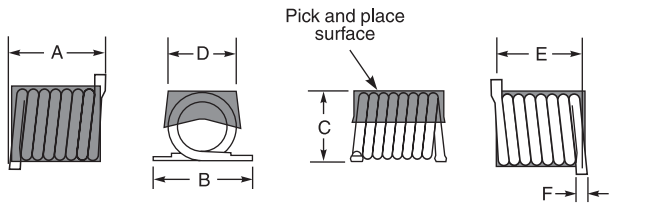
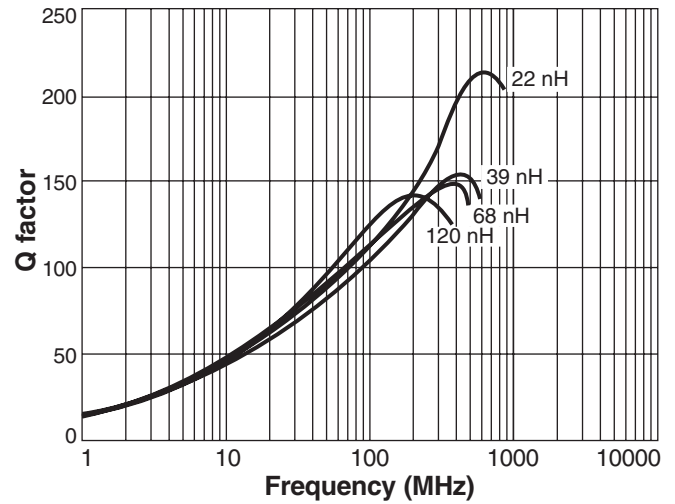
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

# AT475RAT Air Core Inductors

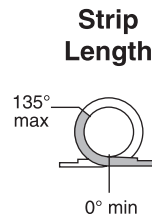
## Typical L vs Frequency



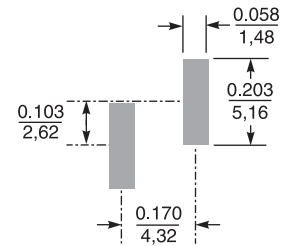
## Typical Q vs Frequency



A max	B max	C max	D	E	F max
0,195	0,250	0,165	0,140 ±0,010	0,170 ±0,015	0,030
4,95	6,35	4,20	3,56 ±0,25	4,32 ±0,38	0,76



### Suggested Land Pattern



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