

**PRELIMINARY**

# Aerospace Grade Air Core Inductors AE475RAT



- High Q over a wide range of frequencies
- 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<sub>max</sub> 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)

**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)
AE475RAT22N_SZ	22	5,2	135	100	3.2	4.2	3.0
AE475RAT27N_SZ	27	5,2	135	100	2.7	4.0	3.5
AE475RAT33N_SZ	33	5,2	130	100	2.5	4.8	3.0
AE475RAT39N_SZ	39	5,2	135	100	2.1	4.4	3.0
AE475RAT47N_SZ	47	5,2	135	100	2.1	5.6	3.0
AE475RAT56N_SZ	56	5,2	125	100	1.5	6.2	3.0
AE475RAT68N_SZ	68	5,2	120	100	1.5	8.2	2.5
AE475RAT82N_SZ	82	5,2	120	100	1.3	9.4	2.5
AE475RATR10_SZ	100	5,2	115	100	1.2	12.3	1.7
AE475RATR12_SZ	120	5,2	125	100	1.1	17.3	1.5
AE475RATR15_SZ	150	5,2	145	100	0.75	33.0	1.2

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

**AE475RATR15 G SZ**

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

**Testing:** Z = Coilcraft Critical Products Environmental Stress Conditions Testing.

H = Coilcraft Qual + Coilcraft Hi-Rel Burn-in

P = Coilcraft Qual + MIL-STD-981 Class S Group A screening

N = Coilcraft Qual + MIL-STD-981 Class B Group A screening

C = Coilcraft Qual + MIL-STD-981 Class S Group A screening + MIL-STD-981 Class S Group B qualification

W = Coilcraft Qual + MIL-STD-981 Class B Group A screening + MIL-STD-981 Class S Group B qualification

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 8753D or equivalent with a Coilcraft SMD-D test fixture.

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

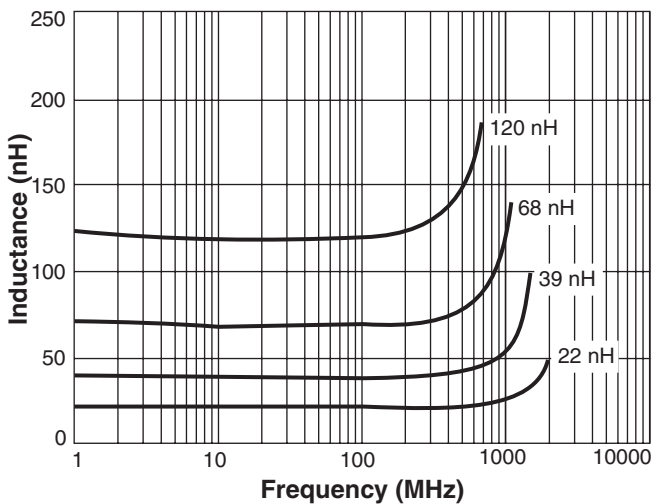
6. Electrical specifications at 25°C.

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

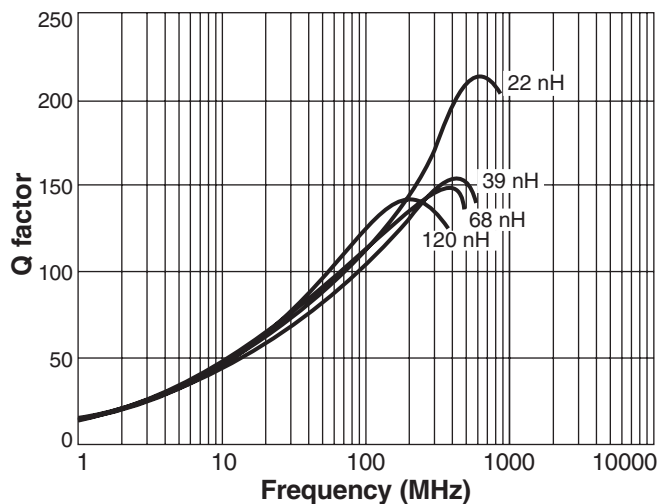
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# AE475RAT Air Core Inductors

## Typical L vs Frequency



## Typical Q vs Frequency



## Current Derating

