

# High-Reliability Air Core Inductors MS475RAT



- High Q over a wide range of frequencies
- High temperature materials allow operation in ambient temperatures up to 155°C.
- Tin-lead (Sn-Pb) terminations ensure the best possible board adhesion

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

**Weight** 80 – 200 mg

**Ambient temperature** –55°C to +125°C with I<sub>max</sub> current

**Maximum part temperature** +155°C (ambient + temp rise).

**Storage temperature** Component: –55°C to +155°C.

Tape and reel 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 typ <sup>3</sup>	Qmin <sup>3</sup>	SRF min <sup>4</sup> (GHz)	DCR max <sup>5</sup> (mOhm)	I <sub>max</sub> (A)
MS475RAT22N_SZ	22	5,2	135	100	3.2	4.2	3.0
MS475RAT27N_SZ	27	5,2	135	100	2.7	4.0	3.5
MS475RAT33N_SZ	33	5,2	130	100	2.5	4.8	3.0
MS475RAT39N_SZ	39	5,2	135	100	2.1	4.4	3.0
MS475RAT47N_SZ	47	5,2	135	100	2.1	5.6	3.0
MS475RAT56N_SZ	56	5,2	125	100	1.5	6.2	3.0
MS475RAT68N_SZ	68	5,2	120	100	1.5	8.2	2.5
MS475RAT82N_SZ	82	5,2	120	100	1.3	9.4	2.5
MS475RATR10_SZ	100	5,2	115	100	1.2	12.3	1.7
MS475RATR12_SZ	120	5,2	125	100	1.1	17.3	1.5
MS475RATR15_SZ	150	5,2	145	100	0.75	33.0	1.2

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

**MS475RATR15GSZ**

**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.

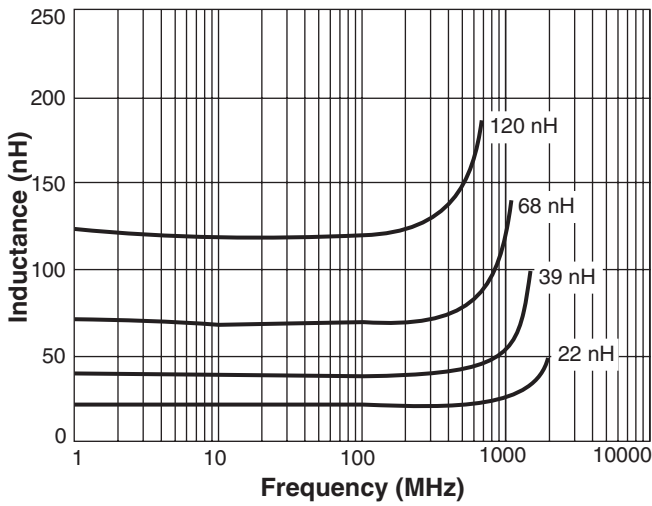
6. Electrical specifications at 25°C.

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

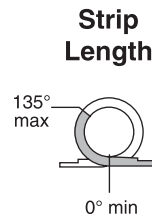
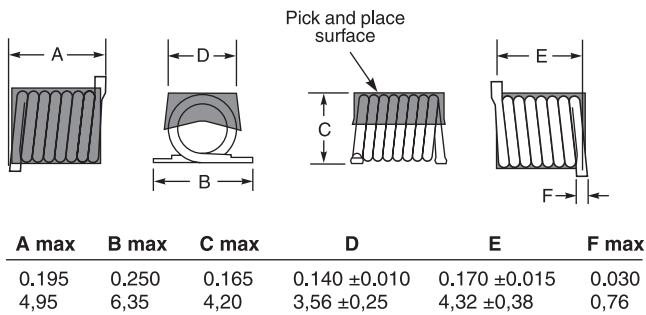
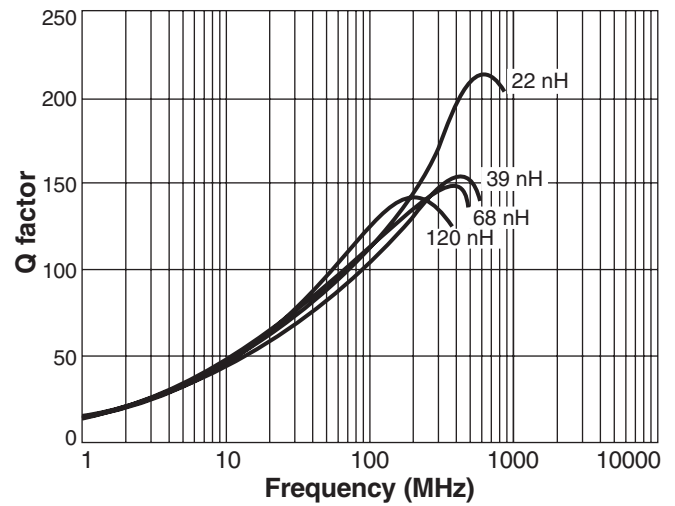
**S-Parameter files**  
ON OUR WEB SITE  
**SPICE models**  
ON OUR WEB SITE

# MS475RAT Air Core Inductors

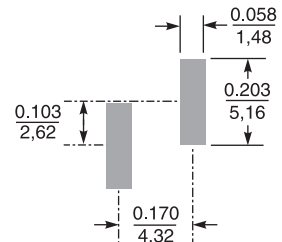
## Typical L vs Frequency



## Typical Q vs Frequency



### Suggested Land Pattern



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