

**PRELIMINARY**

# Aerospace Grade Chip Inductors AE450RAC



- Magnetically shielded chip inductors
- Provides high performance in transmit and receive filters
- 29 inductance values from 1.0 – 1000  $\mu\text{H}$

This robust version of Coilcraft's standard 1812FS series features high temperature materials that pass NASA low outgassing specifications and allow operation in ambient temperatures up to 155°C. The leach-resistant base metalization with tin-lead (Sn-Pb) terminations ensures the best possible board adhesion.

Part number <sup>1</sup>	L <sup>2</sup> ( $\mu\text{H}$ )	% tol	Q <sup>3</sup> min	DCR max <sup>4</sup> (Ohms)	SRF typ <sup>5</sup> (MHz)	Isat <sup>6</sup> (mA)	I <sub>max</sub> (mA)
AE450RAC102_SZ	1.0	10,5	30	0.070	320	3100	2950
AE450RAC122_SZ	1.2	10,5	35	0.110	280	2800	2600
AE450RAC152_SZ	1.5	10,5	20	0.105	200	2100	2850
AE450RAC222_SZ	2.2	10,5	30	0.120	175	1800	2700
AE450RAC242_SZ	2.4	10,5	25	0.175	160	1900	2050
AE450RAC272_SZ	2.7	10,5	30	0.200	165	1400	2100
AE450RAC332_SZ	3.3	10,5	33	0.185	160	1400	1900
AE450RAC392_SZ	3.9	10,5	32	0.195	145	1300	1700
AE450RAC472_SZ	4.7	10,5	28	0.15	125	1000	1800
AE450RAC562_SZ	5.6	10,5	35	0.40	110	1000	1650
AE450RAC682_SZ	6.8	10,5	35	0.35	110	850	1450
AE450RAC103_SZ	10	10,5	35	0.55	90	710	1400
AE450RAC153_SZ	15	10,5	40	0.75	75	680	1150
AE450RAC223_SZ	22	10,5	45	0.85	15	600	855
AE450RAC333_SZ	33	10,5	45	1.1	10	540	820
AE450RAC393_SZ	39	10,5	45	1.1	9.8	500	710
AE450RAC473_SZ	47	10,5	45	1.2	8.0	390	645
AE450RAC683_SZ	68	10,5	45	1.8	22.0	260	650
AE450RAC104_SZ	100	10,5	45	2.5	4.5	260	520
AE450RAC154_SZ	150	10,5	40	3.8	3.4	220	475
AE450RAC224_SZ	220	10,5	45	5.4	3.0	180	390
AE450RAC274_SZ	270	10,5	35	6.5	2.0	150	350
AE450RAC334_SZ	330	10,5	45	6.8	3.0	150	310
AE450RAC394_SZ	390	10,5	35	7.6	2.6	140	310
AE450RAC474_SZ	470	10,5	35	8.7	2.1	130	280
AE450RAC564_SZ	560	10,5	20	11.2	1.60	110	280
AE450RAC684_SZ	680	10,5	25	12.7	1.90	100	250
AE450RAC824_SZ	820	10,5	25	16.8	1.45	90	210
AE450RAC105_SZ	1000	10,5	30	19.5	1.68	90	160

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

**AE450RAC105JSZ**

**Tolerance:** J = 5% K = 10%

**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 100 kHz, 0.1 Vrms, 0 Adc using a Coilcraft SMD-A fixture in an Agilent/HP 4263B impedance analyzer.

3. Q measured at 1 MHz on an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.

4. DCR measured on a micro-ohmmeter and a Coilcraft CCF840 test fixture.

5. SRF measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.

6. Current that causes a 40°C temperature rise from 25°C ambient.

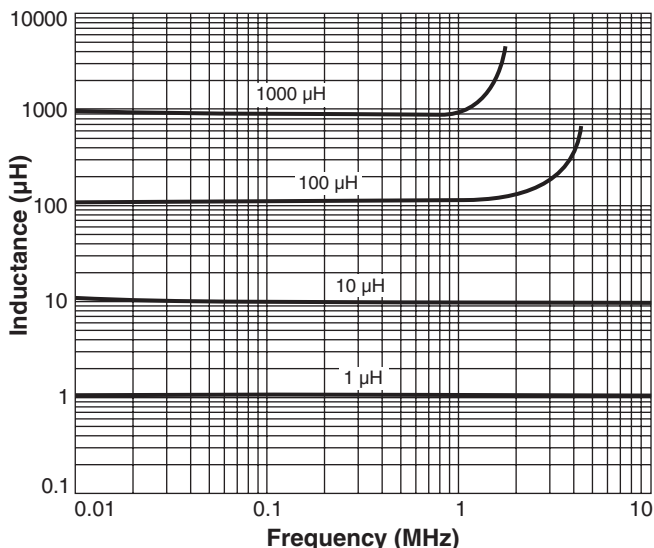
7. Electrical specifications at 25°C.

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

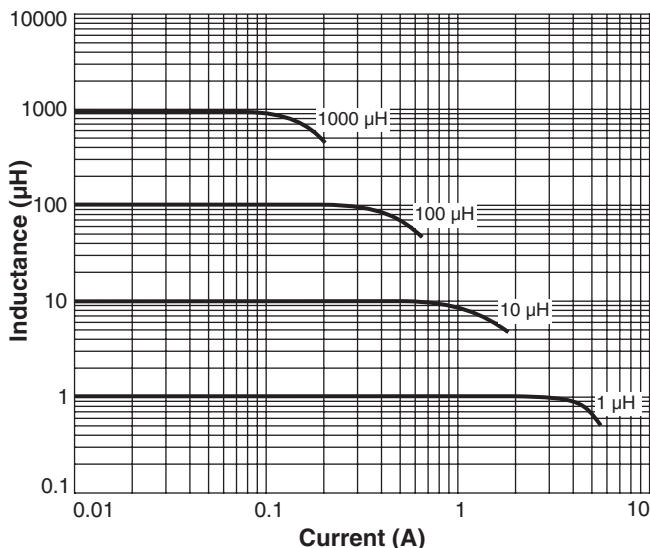
**PRELIMINARY**

# AE450RAC Series (1812)

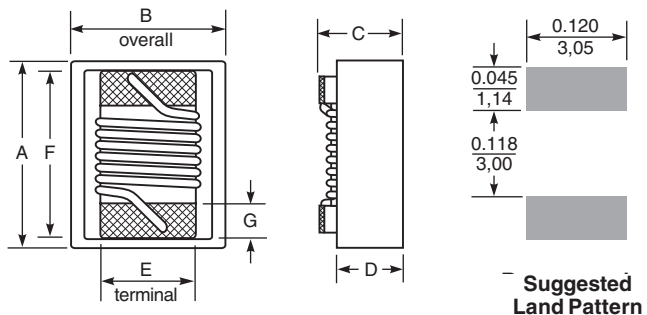
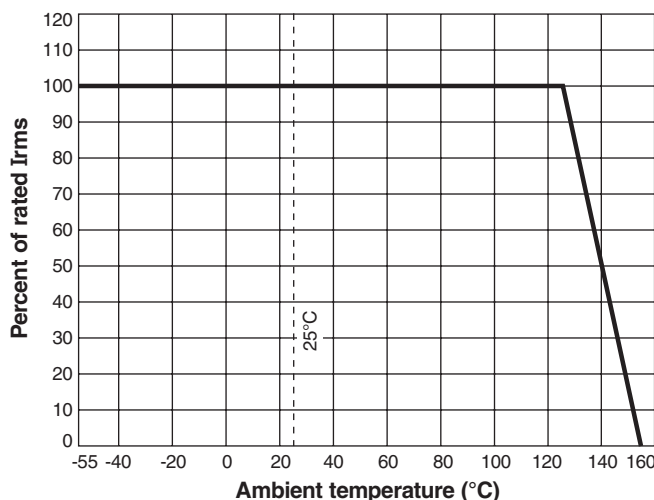
## Typical L vs Frequency



## Typical L vs Current



## Current Derating



A max	B max	C max	D ref	E ref	F ref	G
0.231	0.196	0.150	0.107	0.100	0.178	0.025 inches
5,87	4,98	3,81	2,72	2,54	4,52	0,64 mm

All dimensions are without solder applied to the terminations. For maximum dimensions with solder, add 0.006 inches / 0,152 mm.

**Core material** Ceramic/Ferrite

**Terminations** Tin-lead (63/37) over silver-platinum-glass frit

**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)** +200 to +700 ppm/°C

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Enhanced crush-resistant packaging** 600 per 7" reel  
Plastic tape: 12 mm wide, 0.25 mm thick, 8 mm pocket spacing, 3.9 mm pocket depth