

PRELIMINARY

Aerospace Grade Chip Inductors AE235RAL

- High current ratings – up to 1.8 A
- Ideal for power amplifiers in TDMA, CDMA, GSM and other wireless applications
- Perfect for use as an RF choke for the power supply, the LC tank between amplifier and antenna and in the amplifier bias circuit.
- Excellent Q factors
- Outstanding self-resonant frequency
- Tight inductance tolerance
- High temperature materials allow operation in ambient temperatures up to 155°C.
- Passes NASA low outgassing specifications
- Leach-resistant base metalization with tin-lead (Sn-Pb) terminations ensures the best possible board adhesion

Part number ¹	Inductance ² (nH)	Percent tolerance	900 MHz		1.7 GHz		SRF min ⁴ (MHz)	DCR typ ⁵ (Ohms)	I _{max} (mA)
			L typ	Q typ ³	L typ	Q typ ³			
AE235RAL0N8XJSZ	0.78	5	0.79	35	0.76	55	16300	0.018	1860
AE235RAL1N9X_SZ	1.9	5,2	1.83	50	1.81	73	13200	0.022	1700
AE235RAL3N4X_SZ	3.4	5,2	3.36	51	3.33	93	10000	0.030	1500
AE235RAL3N5X_SZ	3.5	5,2	3.51	58	3.55	82	9500	0.040	1400
AE235RAL5N8X_SZ	5.8	5,2	5.76	56	5.70	83	4900	0.045	1300
AE235RAL6N2X_SZ	6.2	5,2	6.17	57	6.28	81	4900	0.055	1150
AE235RAL8N2X_SZ	8.2	5,2	8.15	58	8.19	82	4100	0.060	1100

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

AE235RAL8N2XGSZ

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 250 MHz using a Coilcraft SMD-F test fixture and Coilcraft-provided correlation pieces with an Agilent/HP 4286 impedance analyzer.
 3. Q measured using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
 4. For SRF >6 GHz, measured using an Agilent/HP 8722ES network analyzer and a Coilcraft SMD-D test fixture. For SRF ≤6 GHz, measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.
 5. DCR measured on a micro-ohmmeter.
 6. Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

Core material Ceramic

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

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: –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) +25 to +155 ppm/°C

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

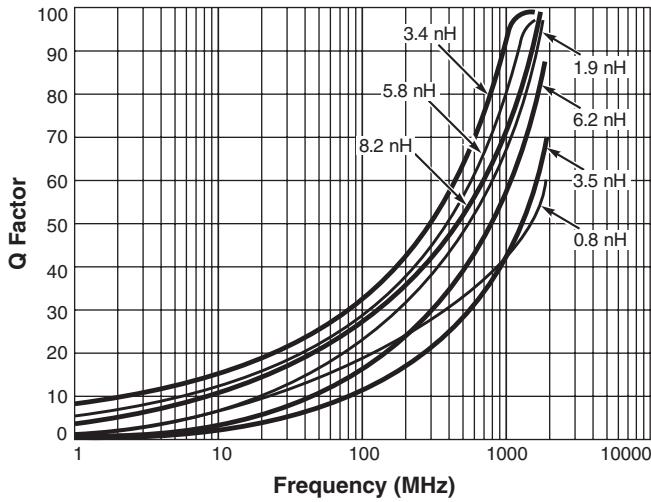
Enhanced crush-resistant packaging 2000/7" reel
Paper tape: 8 mm wide, 0.68 mm thick, 2 mm pocket spacing,

COILCRAFT ACCURATE
PRECISION REPEATABLE
MEASUREMENTS
SEE INDEX **TEST FIXTURES**

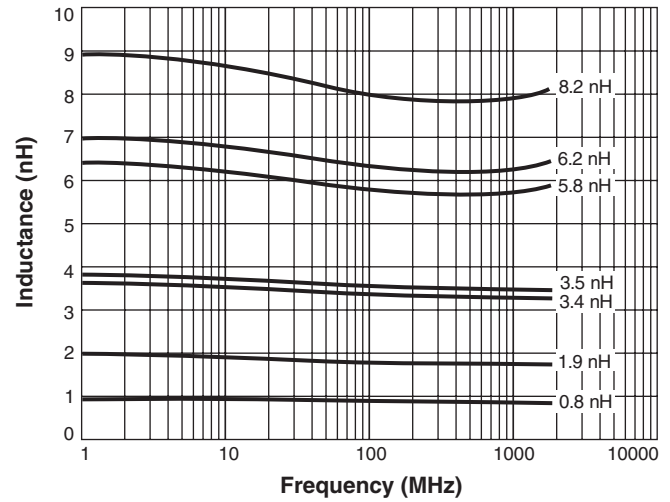
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AE235RAL Series (0402)

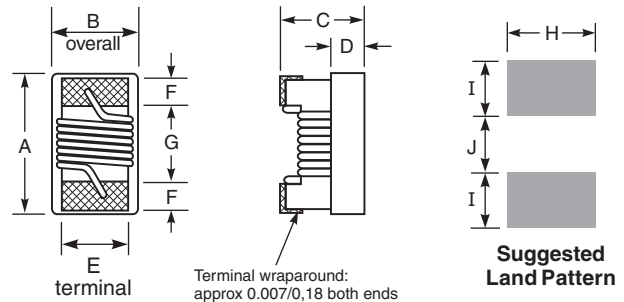
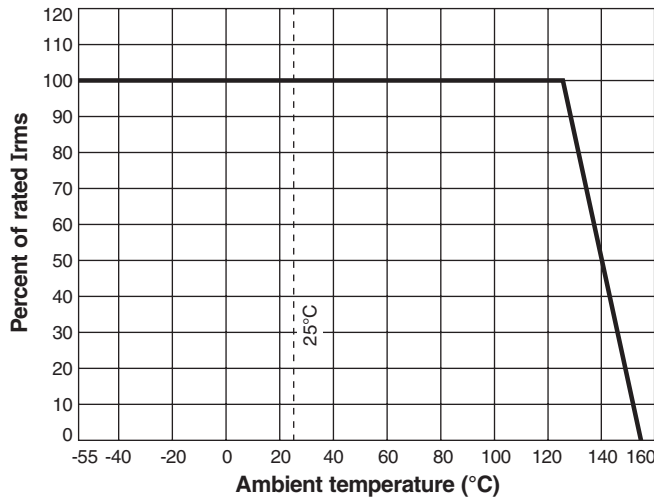
Typical Q vs Frequency



Typical L vs Frequency



Current Derating



A	B	C	D	E	F	G	H	I	J
max	max	max	ref						
0,047	0,025	0,026	0,010	0,020	0,009	0,022	0,026	0,014	0,018
1,19	0,64	0,66	0,25	0,51	0,23	0,56	0,66	0,36	0,46