

PRELIMINARY

Aerospace Grade Chip Inductors AE235RAH

- High SRF, excellent Q values and low DCR
- 20 inductance values from 1.5 nH to 56 nH
- Comparable with other industry standards
- Ideal for use in high-frequency telecommunications equipment and in resonance circuits such as voltage-controlled oscillators.
- Excellent current handling makes them perfect for power-amplifier applications.

This robust version of Coilcraft's standard 0402ME 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 ¹	Inductance ² (nH)	Percent tolerance	Q ³ nom	Q typ at 300 MHz	Q typ at 800 MHz	Q typ at 1.5 GHz	SRF min ⁴ (GHz)	DCR max ⁵ (Ohms)	Imax (mA)
AE235RAH1N5JSZ	1.5	5	10	30	55	65	18.0	0.03	1500
AE235RAH2N7JSZ	2.7	5	20	40	67	85	15.0	0.05	1200
AE235RAH3N9JSZ	3.9	5	25	35	58	82	10.0	0.07	1000
AE235RAH4N3JSZ	4.3	5	25	35	58	90	10.0	0.07	1000
AE235RAH4N7JSZ	4.7	5	25	40	65	85	8.0	0.07	1000
AE235RAH5N1JSZ	5.1	5	25	35	60	78	8.0	0.12	800
AE235RAH6N2GSZ	6.2	2	25	40	63	80	8.0	0.09	950
AE235RAH6N8GSZ	6.8	2	25	45	70	90	6.0	0.09	950
AE235RAH7N5GSZ	7.5	2	25	38	58	75	6.0	0.13	850
AE235RAH9N1GSZ	9.1	2	25	40	62	85	5.5	0.14	800
AE235RAH10NGSZ	10	2	25	38	60	75	5.5	0.17	750
AE235RAH12NGSZ	12	2	30	40	60	80	5.5	0.14	750
AE235RAH15NGSZ	15	2	30	40	60	80	5.0	0.16	700
AE235RAH18NGSZ	18	2	25	40	63	80	4.5	0.27	500
AE235RAH22NGSZ	22	2	25	35	55	73	4.0	0.30	500
AE235RAH27NGSZ	27	2	25	35	55	60	3.5	0.52	400
AE235RAH33NGSZ	33	2	25	35	55	60	3.2	0.63	380
AE235RAH39NGSZ	39	2	25	35	55	62	3.0	0.70	350
AE235RAH47NGSZ	47	2	25	34	52	60	2.9	1.08	270
AE235RAH56NGSZ	56	2	25	36	53	50	2.8	1.17	210

1. When ordering, please specify **testing** code:

AE235RAH56NGSZ

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

- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
- Q measured using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
- SRF measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.
- DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF840 test fixture.
- 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 per 7" reel
Paper tape: 8 mm wide, 0.68 mm thick, 2 mm pocket spacing



CRITICAL PRODUCTS & SERVICES

These parts are preproduction products for electrical evaluation only.
Specification subject to change without notice.

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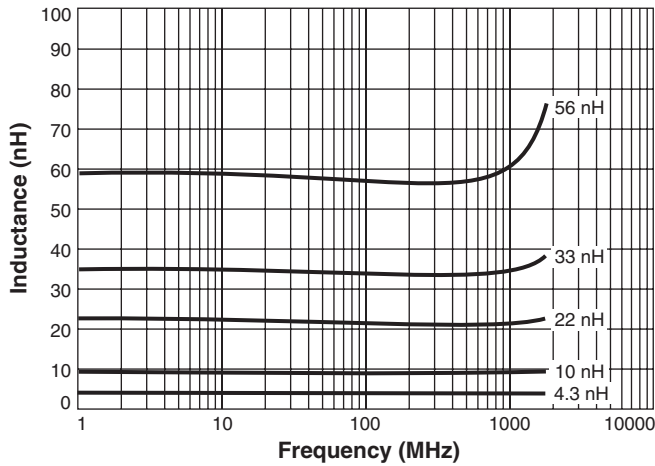
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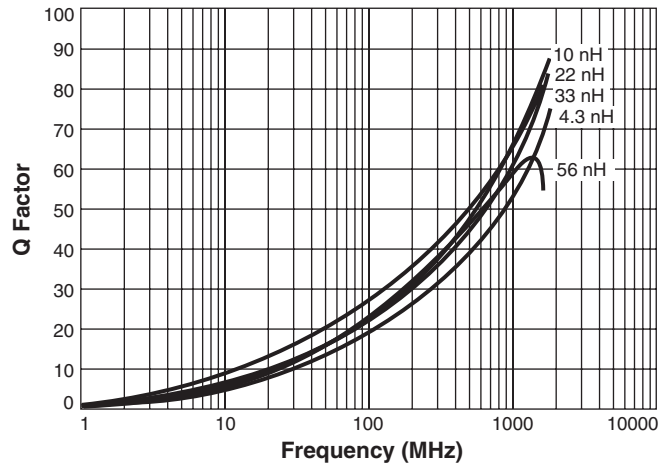
PRELIMINARY

AE235RAH Series (0402)

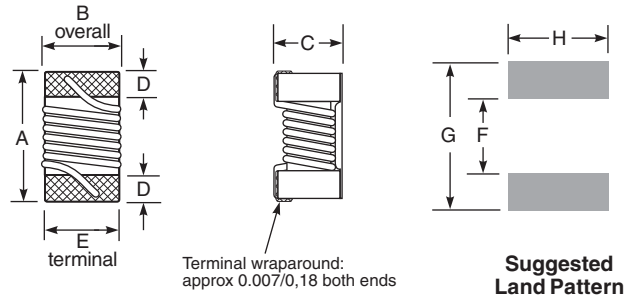
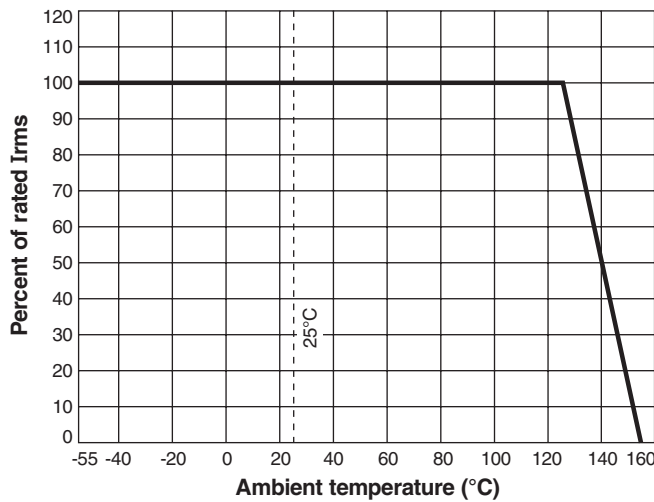
Typical L vs Frequency



Typical Q vs Frequency



Irms Derating



A	B	C	D	E
0.039 ±0.004	0.024 ±0.004	0.020 ±0.004	0.008 ±0.004	0.020 ±0.004
1,0 ±0,1	0,61 ±0,1	0,51 ±0,1	0,2 ±0,1	0,5 ±0,1
F	G	H		
0.020	0.047	0.026		
0,5	1,2	0,65		

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