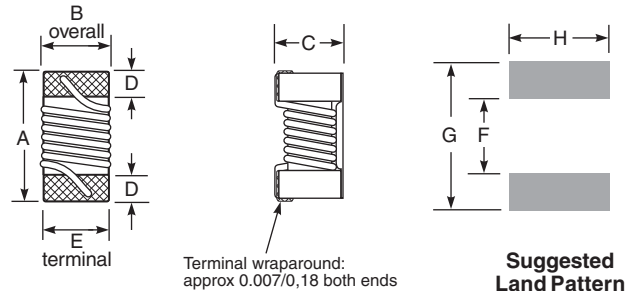


PRELIMINARY

Aerospace Grade Chip Inductors AE312RAH

- High SRF, excellent Q values and low DCR
- 45 inductance values from 2.2 nH to 470 nH, some not found in any of our other 0603 series
- Comparable with other industry standards

This robust version of Coilcraft's standard 0603ME 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.



A	B	C	D	E
0.063 ±0.008	0.031 ±0.008	0.031 ±0.008	0.012 ±0.004	0.031 ±0.006
1,6 ±0,2	0,8 ±0,2	0,8 ±0,2	0,3 ±0,1	0,8 ±0,15
F	G	H		
0.027	0.075	0.035 inches		
0,7	1,9	0,9 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

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

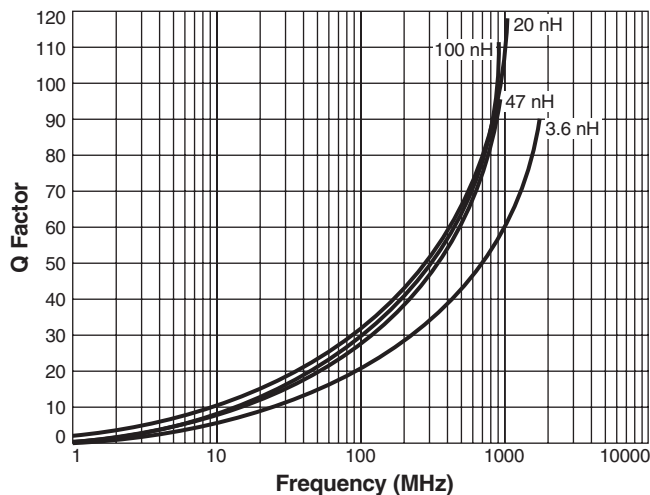
Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Temperature Coefficient of Inductance (TCL) +25 to +155 ppm/°C

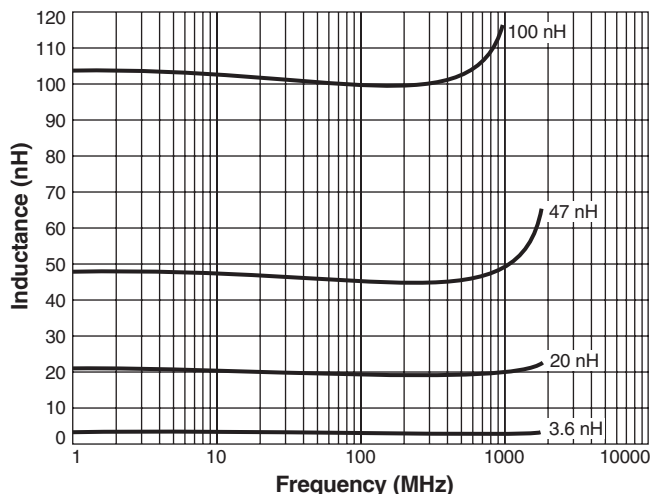
Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

Enhanced crush-resistant packaging 2000 per 7" reel. Paper tape: 8 mm wide, 1 mm thick, 4 mm pocket spacing

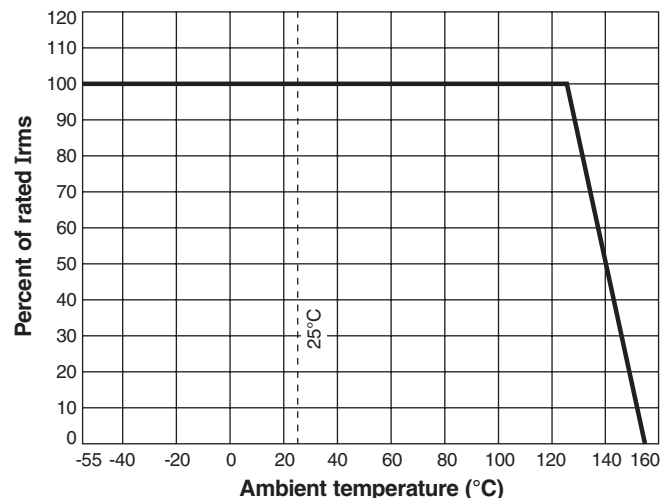
Typical Q vs Frequency



Typical L vs Frequency



Irms Derating



PRELIMINARY**AE312RAH Series (0603)**

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 (MHz)	DCR max ⁵ (Ohms)	I _{max} (mA)
AE312RAH2N2JSZ	2.2	5	29	39	60	83	13500	0.024	2500
AE312RAH3N6JSZ	3.6	5	25	45	75	95	6000	0.059	1600
AE312RAH3N9JSZ	3.9	5	35	45	75	95	6000	0.059	1600
AE312RAH4N3JSZ	4.3	5	35	45	75	95	6000	0.059	1600
AE312RAH4N7JSZ	4.7	5	35	39	64	88	6000	0.047	1600
AE312RAH5N6JSZ	5.6	5	35	45	75	95	6000	0.082	1400
AE312RAH6N2JSZ	6.2	5	35	45	75	95	6000	0.082	1400
AE312RAH6N8JSZ	6.8	5	35	45	80	100	6000	0.082	1400
AE312RAH7N5JSZ	7.5	5	35	45	80	100	6000	0.090	1300
AE312RAH8N2JSZ	8.2	5	26	50	84	122	6000	0.052	1250
AE312RAH8N7JSZ	8.7	5	22	41	68	96	6000	0.097	1100
AE312RAH9N5JSZ	9.5	5	24	43	73	103	6000	0.099	1100
AE312RAH10NJSZ	10	5	35	45	80	100	6000	0.11	1100
AE312RAH11NJSZ	11	5	35	45	80	100	6000	0.11	1100
AE312RAH12NJSZ	12	5	35	50	85	100	6000	0.13	1050
AE312RAH13NJSZ	13	5	35	50	85	100	6000	0.13	1050
AE312RAH15NJSZ	15	5	40	55	90	105	6000	0.13	1400
AE312RAH16NJSZ	16	5	40	55	90	105	5500	0.16	1000
AE312RAH18NJSZ	18	5	40	55	90	105	5500	0.16	1000
AE312RAH20NJSZ	20	5	40	55	90	105	4900	0.16	1000
AE312RAH22NJSZ	22	5	40	55	90	105	4600	0.17	950
AE312RAH24NJSZ	24	5	40	50	85	95	3800	0.21	950
AE312RAH27NJSZ	27	5	40	50	85	95	3700	0.22	750
AE312RAH30NJSZ	30	5	40	50	85	90	3300	0.23	650
AE312RAH33NJSZ	33	5	40	50	85	90	3200	0.23	650
AE312RAH36NJSZ	36	5	40	50	85	90	2900	0.26	600
AE312RAH39NJSZ	39	5	40	50	85	90	2800	0.26	600
AE312RAH43NJSZ	43	5	40	50	85	75	2700	0.27	600
AE312RAH47NJSZ	47	5	38	50	85	75	2600	0.29	550
AE312RAH51NJSZ	51	5	38	50	85	75	2500	0.33	550
AE312RAH56NJSZ	56	5	38	50	85	75	2400	0.35	530
AE312RAH62NJSZ	62	5	38	50	85	75	2300	0.43	450
AE312RAH68NJSZ	68	5	38	50	85	75	2200	0.38	520
AE312RAH72NJSZ	72	5	34	50	80	60	2100	0.56	470
AE312RAH75NJSZ	75	5	34	50	80	60	2050	0.56	450
AE312RAH82NJSZ	82	5	34	50	80	55	2000	0.60	400
AE312RAH91NJSZ	91	5	34	45	80	55	1900	0.64	400
AE312RAHR10JSZ	100	5	34	45	75	50	1800	0.68	380
AE312RAHR11JSZ	110	5	32	45	75	50	1350	1.2	350
AE312RAHR12JSZ	120	5	32	45	75	50	1600	1.3	310
AE312RAHR13JSZ	130	5	32	45	75	50	1450	1.4	250
AE312RAHR15JSZ	150	5	32	45	70	—	1400	1.5	240
AE312RAHR16JSZ	160	5	32	45	65	—	1350	2.1	210
AE312RAHR18JSZ	180	5	25	45	60	—	1300	2.2	200
AE312RAHR47GSZ	470	2	28	—	—	—	650	6.0	120

1. When ordering, please specify **testing** code:**AE312RAHR47GSZ****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 MHz, 0.1 Vrms, 0 Adc using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.

3. Q measured at 100 MHz using an Agilent/HP4291A with Agilent/HP 16193 test fixture.

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

5. DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF858 test fixture.

8. Electrical specifications at 25°C.

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