Chip Inductors for Critical Applications AR413RAF

- High temperature materials allow operation in ambient temperatures up to 155°C.
- Passes NASA low outgassing specifications
- Standard tin-lead (Sn-Pb) terminations ensure the best possible board adhesion. Note: Nickel barrier termination (tin-lead over tin over nickel over silver-platinum-glass frit, termination code P) is recommended for hand soldering applications.

Part number[1]	Inductance[2] (nH)	Percent tolerance[3]	Q min[4]	SRF min[5] (MHz)	DCR max[6] (Ohms)	Imax[7] (mA)
AR413RAF3N3JPZ	3.3 @ 250 MHz	5	65 @ 1500 MHz	5000	0.025	1000
AR413RAF6N8JPZ	6.8 @ 250 MHz	5	70 @ 1500 MHz	5000	0.05	1000
AR413RAF7N2JPZ	7.2 @ 250 MHz	5	70 @ 1500 MHz	3800	0.05	1000
AR413RAF12NJPZ	12 @ 250 MHz	5	55 @ 700 MHz	3000	0.065	1000
AR413RAF15NJPZ	15 @ 250 MHz	5	55 @ 700 MHz	2200	0.08	1000
AR413RAF18NJPZ	18 @ 250 MHz	5	55 @ 500 MHz	2400	0.09	1000
AR413RAF22NJPZ	22 @ 250 MHz	5	55 @ 500 MHz	2000	0.11	950
AR413RAF27N_PZ	27 @ 250 MHz	5,2	55 @ 500 MHz	1900	0.13	850
AR413RAF33N_PZ	33 @ 200 MHz	5,2	55 @ 350 MHz	1600	0.135	760
AR413RAF39N_PZ	39 @ 200 MHz	5,2	55 @ 350 MHz	1500	0.17	700
AR413RAF47N_PZ	47 @ 200 MHz	5,2,1	55 @ 350 MHz	1200	0.18	660
AR413RAF56N_PZ	56 @ 150 MHz	5,2,1	50 @ 300 MHz	1200	0.18	620
AR413RAF68N_PZ	68 @ 150 MHz	5,2,1	50 @ 300 MHz	1200	0.23	550
AR413RAF82N_PZ	82 @ 150 MHz	5,2,1	40 @ 250 MHz	1000	0.35	500
AR413RAFR10_PZ	100 @ 100 MHz	5,2,1	40 @ 250 MHz	960	0.64	420
AR413RAFR12_PZ	120 @ 100 MHz	5,2,1	40 @ 200 MHz	870	0.55	350
AR413RAFR14_PZ	140 @ 100 MHz	5,2,1	40 @ 200 MHz	880	0.70	320
AR413RAFR15_PZ	150 @ 100 MHz	5,2,1	40 @ 200 MHz	760	0.75	300
AR413RAFR18_PZ	180 @ 50 MHz	5,2,1	40 @ 200 MHz	730	1.02	250
AR413RAFR22_PZ	220 @ 50 MHz	5,2,1	34 @ 100 MHz	600	1.15	250
AR413RAFR24_PZ	240 @ 50 MHz	5,2	32 @ 100 MHz	640	1.15	250
AR413RAFR27_PZ	270 @ 50 MHz	5,2	32 @ 100 MHz	610	1.25	250
AR413RAFR33_PZ	330 @ 25 MHz	5,2	32 @ 100 MHz	500	1.35	250
AR413RAFR39_PZ	390 @ 25 MHz	5,2	32 @ 100 MHz	420	1.45	250
AR413RAFR47_PZ	470 @ 25 MHz	5,2	32 @ 100 MHz	420	1.65	240
AR413RAFR56_PZ	560 @ 25 MHz	5,2	32 @ 100 MHz	380	1.90	240

1. When ordering, specify **tolerance, termination** and **packaging** codes:

AR413RAFR56JPZ

Tolerance: **F** = 1% **G** = 2% **J** = 5%

Termination: **P** = Tin-lead (63/37) over tin over nickel over silver-platinum-glass frit.

Screening: **Z** = Unscreened
H = Coilcraft CP-SA-10001 Group A
1 = EEE-INST-002 (Family 3) Level 1
2 = EEE-INST-002 (Family 3) Level 2
3 = EEE-INST-002 (Family 3) Level 3
4 = MIL-STD-981 (Family 50) Class B
5 = MIL-STD-981 (Family 50) Class S
F = ESCC3201 (F4 operational life performed at 90°C)

- Screening performed to the document's latest revision.
- Lot qualification (Group B) available.
- Custom testing also available.
- Country of origin restrictions available; prefix option G.

2. Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
3. Tolerances in bold are stocked for immediate shipment.
4. Q measured using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
5. SRF measured using an Agilent/HP 8720D network analyzer and a Coilcraft SMD-D test fixture.
6. DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF840 test fixture.
7. Current that causes a 15°C temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
8. Electrical specifications at 25°C.

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

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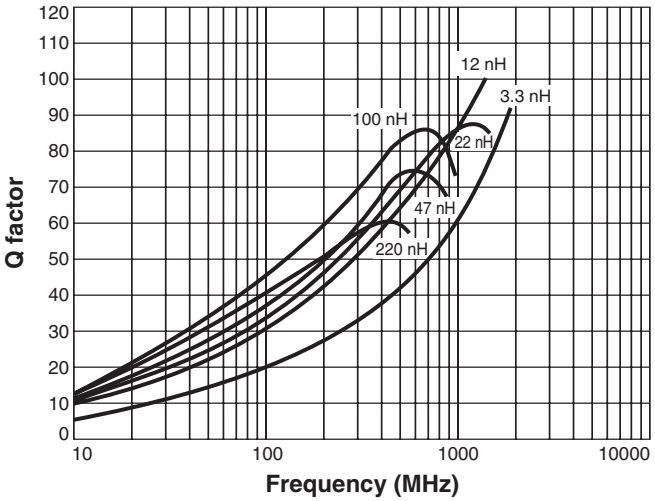
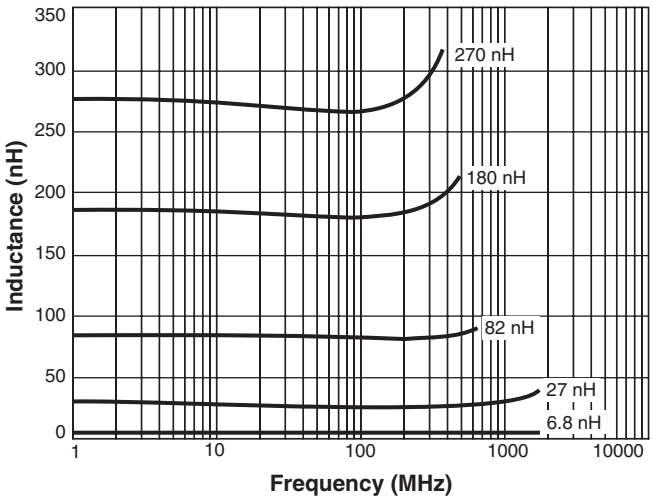
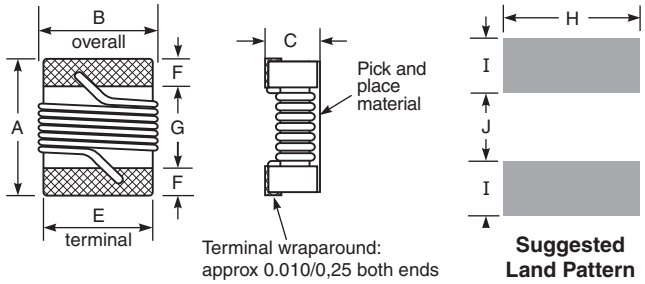
Chip Inductor – AR413RAF Series (2520)

Typical Q vs Frequency



Typical L vs Frequency





A max	B max	C max	E	F	G	H	I	J	
0.105	0.095	0.045	0.080	0.020	0.060	0.100	0.040	0.050	inches
2,67	2,41	1,14	2,03	0,51	1,52	2,54	1,02	1,27	mm

Note: Dimensions are before solder application. For maximum overall dimensions including solder, add 0.006 in / 0.15 mm to A and C.

Core material Ceramic

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

Weight 16.0 – 19.0 mg

Ambient temperature –55°C to +125°C with Irms current

Maximum part temperature +140°C (ambient + temp rise).

Storage temperature Component: –55°C to +140°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) +25 to +125 ppm/°C

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

Packaging 2000/7″ reel; 7500/13″ reel Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.14 mm pocket depth

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

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