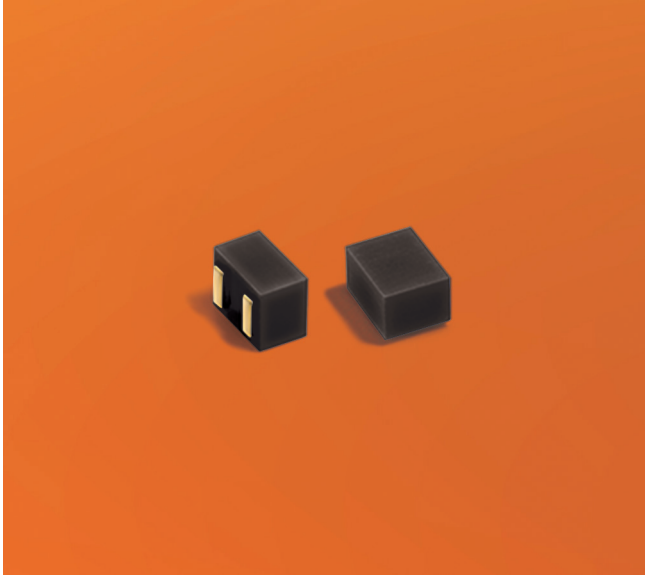


# Molded Chip Inductors AE312RBA



- Exceptional Q and high SRFs, DCR and current carrying characteristics
- Outstanding self-resonant frequency
- Passes NASA low outgassing (Outgassing meets ASTM E595)
- Fits standard 0603 footprint

**Core material** Ceramic

**Weight** 3.5 – 8.0 mg

**Terminations** Gold over nickel. (Tin-lead (63/37) and tin-silver-copper are also available.)

**Ambient temperature**  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  with  $I_{\text{max}}$  current

**Maximum part temperature**  $+155^{\circ}\text{C}$  (ambient + temp rise)

**Storage temperature** Component:  $-55^{\circ}\text{C}$  to  $+155^{\circ}\text{C}$ .

Packaging:  $-55^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$

**Resistance to soldering heat** Max three 40 second reflows at  $+260^{\circ}\text{C}$ , parts cooled to room temperature between cycles

**Temperature Coefficient of Inductance (TCL)**  $+25$  to  $+155$  ppm/ $^{\circ}\text{C}$

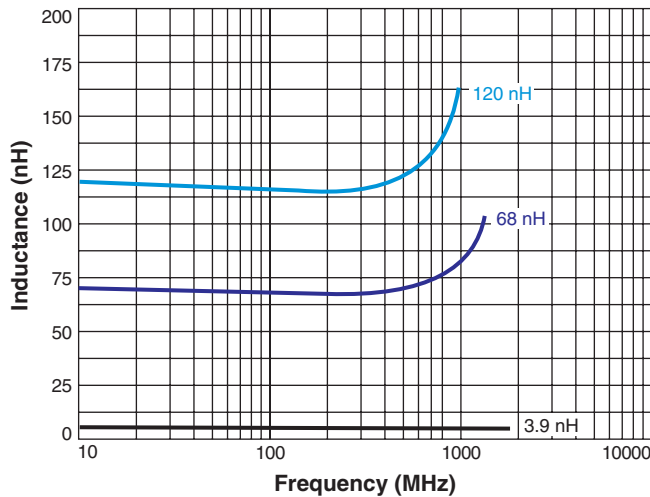
**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at  $<30^{\circ}\text{C}$  / 85% relative humidity)

**Enhanced crush-resistant packaging** 2000 per 7" reel

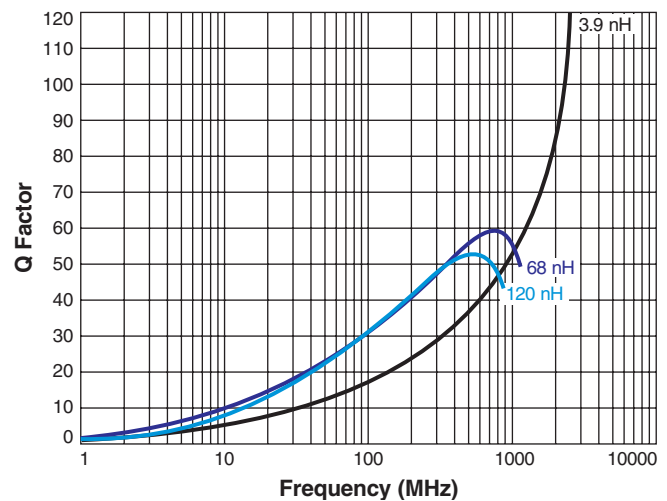
Paper tape: 8 mm wide, 1.0 mm thick, 4 mm pocket spacing

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

## Typical L vs Frequency



## Typical Q vs Frequency



# AE312RBA Molded Chip Inductors (0603)

Part number <sup>1</sup>	Inductance <sup>2</sup> ±5% (nH)	Q min <sup>3</sup>	SRF min <sup>4</sup> (MHz)	DCR max <sup>5</sup> (Ohms)	I <sub>max</sub> (mA)
AE312RBA2N2JAZ <sup>7</sup>	2.2 @ 250	11.6	5000	0.122	700
AE312RBA3N9JAZ	3.9 @ 250	16.0	5000	0.096	700
AE312RBA6N8JAZ	6.8 @ 250	24.6	5000	0.122	700
AE312RBA10NJAZ	10 @ 250	29	5000	0.135	700
AE312RBA12NJAZ	12 @ 250	27	3120	0.185	620
AE312RBA15NJAZ	15 @ 250	28	2850	0.210	600
AE312RBA18NJAZ	18 @ 250	33	2652	0.235	600
AE312RBA27NJAZ	27 @ 250	32	2160	0.270	530
AE312RBA39NJAZ	39 @ 250	33	2235	0.321	460
AE312RBA47NJAZ	47 @ 200	35	2006	0.345	440
AE312RBA56NJAZ	56 @ 200	32	1420	0.395	420
AE312RBA68NJAZ	68 @ 200	34	1375	0.421	410
AE312RBA82NJAZ <sup>7</sup>	82 @ 150	30	1581	0.565	400
AE312RBA12JAZ <sup>7</sup>	120 @ 150	31.5	1062	0.839	270
AE312RBA15JAZ <sup>7</sup>	150 @ 150	29	1160	0.92	250
AE312RBA20JAZ <sup>7</sup>	200 @ 100	26	1040	1.96	170
AE312RBA22JAZ <sup>7</sup>	220 @ 100	26	1045	2.14	160
AE312RBA27JAZ <sup>7</sup>	270 @ 100	28	867	2.16	150
AE312RBA30JAZ <sup>7</sup>	300 @ 100	23	850	3.07	120
AE312RBA39JAZ <sup>7</sup>	390 @ 100	27	748	4.14	100

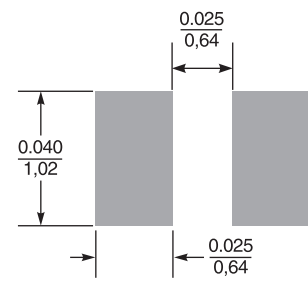
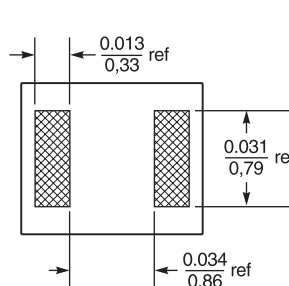
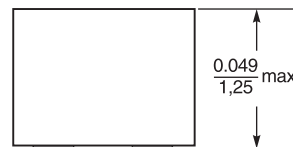
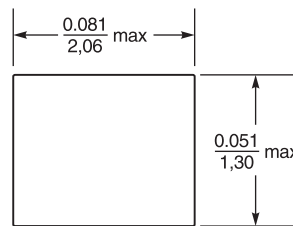
1. When ordering, specify **termination and screening** codes:

**AE312RBA39JAZ**

**Termination:** **A** = Gold over nickel over moly-mag  
**C** = Tin-lead (63/37) over gold over nickel over moly-mag.  
**F** = Tin-silver-copper (95.5/4/0.5) over gold over nickel over moly-mag.

**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.  
 • Testing T and U have been replaced with more detailed codes 4, 5, and 1, 2, 3, respectively. Codes T and U can still be used, if necessary. Custom testing also available.  
 • Country of origin restrictions available; prefix option G or F.

- Inductance measured using a Coilcraft SMD-A test fixture and Coilcraft-provided correlation pieces with an Agilent/HP 4286A impedance analyzer or equivalent.
- Q measured at the same frequency as inductance using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents.
- SRF measured using an Agilent/HP 8753ES network analyzer and a Coilcraft CCF1232 test fixture.
- DCR measured on a Keithley 580 micro-ohmmeter and a Coilcraft CCF1010 test fixture.
- Electrical specifications at 25°C.
- Part is not compliant with MIL-STD-981 Family 50, Class S due to wire gauge. Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



\* Height dimension is before optional solder application. For maximum height dimensions including solder, add 0.006 in / 0.152 mm.

**Suggested Land Pattern**

Dimensions are in  $\frac{\text{inches}}{\text{mm}}$