Outgassing Compliant Power Inductors AE590PNB

- High current, low DCR shielded power inductors
- Passes NASA low outgassing specifications
- High temperature materials allow operation in ambient temperatures up to 165°C.
- Tin-lead (Sn-Pb) terminations for the best possible board adhesion

Core material Ferrite

Terminations Tin-lead (63/37) over tin over nickel over phos bronze.

Weight: 2.1 g – 3.7 g

Ambient temperature –55°C to +105°C with Irms current

Maximum part temperature +155°C (ambient + temp rise)

Storage temperature Component: –55C to +155°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

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

Enhanced crush-resistant packaging 500/13″ reel; Plastic tape: 24 mm wide, 0.35 mm thick, 16 mm pocket spacing, 6.6 mm pocket depth

Part number[1]	Inductance[2] (µH)	DCR[3] (mOhms) typ	DCR[3] (mOhms) max	SRF[4] (MHz) min	SRF[4] (MHz) typ	Isat (A)[5] 10% drop	Isat (A)[5] 20% drop	Isat (A)[5] 30% drop	Irms (A)[6] 20°C rise	Irms (A)[6] 40°C rise
AE590PNB102NSZ	1.0 ±30%	5.8	6.5	70	100	19.12	21.18	22.76	6.00	8.00
AE590PNB152NSZ	1.5 ±30%	8.8	9.8	56	80.0	14.44	16.40	17.64	5.30	7.60
AE590PNB222NSZ	2.2 ±30%	11.5	12.8	39	55.0	12.32	14.00	15.08	5.20	7.30
AE590PNB332NSZ	3.3 ±30%	12.6	14.0	29	42.0	10.88	12.22	13.12	5.00	7.00
AE590PNB472MSZ	4.7 ±20%	13.9	15.5	27	38.0	9.92	11.10	12.00	4.50	7.00
AE590PNB562MSZ	5.6 ±20%	14.9	16.6	21	30.0	8.54	9.60	10.38	4.00	6.40
AE590PNB682MSZ	6.8 ±20%	16.6	18.5	19.0	27.0	7.80	8.80	9.44	3.80	5.90
AE590PNB822MSZ	8.2 ±20%	20.2	22.5	18.0	26.0	6.44	7.38	7.98	3.40	4.80
AE590PNB103MSZ	10 ±20%	21.5	23.9	15.0	22.0	6.00	6.92	7.48	3.00	4.00
AE590PNB123MSZ	12 ±20%	24.5	27.3	14.0	20.0	5.68	6.56	7.08	2.80	3.70
AE590PNB153MSZ	15 ±20%	30.7	34.2	12.6	18.0	5.34	6.04	6.54	2.60	3.50
AE590PNB183MSZ	18 ±20%	35.4	39.4	11.2	16.0	4.82	5.54	6.00	2.50	3.30
AE590PNB223MSZ	22 ±20%	36.6	40.7	10.5	15.0	4.42	5.04	5.44	2.30	3.10
AE590PNB273MSZ	27 ±20%	51.3	57.0	9.0	13.0	3.78	4.32	4.68	2.10	2.90
AE590PNB333MSZ	33 ±20%	54.9	61.0	8.7	12.4	3.50	4.00	4.34	2.00	2.70
AE590PNB393MSZ	39 ±20%	58.0	64.5	8.4	12.0	3.32	3.80	4.14	1.90	2.60
AE590PNB473MSZ	47 ±20%	80.1	89.0	8.0	11.6	2.84	3.26	3.54	1.85	2.50
AE590PNB563MSZ	56 ±20%	82.5	91.7	7.3	10.5	2.64	3.04	3.28	1.75	2.40
AE590PNB683MSZ	68 ±20%	94.5	105.0	7.0	10.0	2.46	2.82	3.04	1.70	2.30
AE590PNB823MSZ	82 ±20%	131.6	146.3	6.0	8.6	2.24	2.54	2.74	1.60	2.20
AE590PNB104MSZ	100 ±20%	141.8	157.6	5.5	7.8	2.06	2.34	2.54	1.50	2.10
AE590PNB124KSZ	120 ±10%	193.3	214.8	4.8	6.8	1.84	2.08	2.28	1.38	1.85
AE590PNB154KSZ	150 ±10%	215.4	239.4	4.5	6.4	1.64	1.90	2.06	1.20	1.66
AE590PNB184KSZ	180 ±10%	254.2	282.5	4.3	6.1	1.46	1.70	1.84	1.14	1.58
AE590PNB224KSZ	220 ±10%	314.1	349.0	3.9	5.5	1.30	1.48	1.60	1.00	1.42
AE590PNB274KSZ	270 ±10%	368.8	409.8	3.0	4.3	1.18	1.38	1.48	0.90	1.45
AE590PNB334KSZ	330 ±10%	481.3	534.8	2.8	4.0	1.04	1.20	1.30	0.84	1.16
AE590PNB394KSZ	390 ±10%	517.5	575.0	2.5	3.6	1.00	1.16	1.28	0.78	1.08
AE590PNB474KSZ	470 ±10%	721.2	801.4	2.1	3.0	0.906	1.00	1.10	0.70	0.96
AE590PNB564KSZ	560 ±10%	773.1	859.0	2.0	2.8	0.872	0.980	1.02	0.64	0.88
AE590PNB684KSZ	680 ±10%	867.6	964.0	1.8	2.6	0.782	0.886	0.956	0.58	0.80
AE590PNB824KSZ	820 ±10%	1158	1287	1.7	2.5	0.692	0.784	0.854	0.53	0.73
AE590PNB105KSZ	1000 ±10%	1273	1415	1.6	2.4	0.588	0.672	0.726	0.48	0.68

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

AE590PNB824KSZ

Screening: Z = Unscreened
H = Coilcraft CP-SA-10001 Group A
1/2/3 = EEE-INST-002 (Family 1) Level 1/2/3
4/5 = MIL-STD-981 (Family 04) Class B=4, Class S=5
F = ESCC3201 (F4 operational life performed at 105°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 options G or F.

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4263B LCR meter or equivalent.
3. DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.
4. SRF measured using an Agilent/HP 8753D network analyzer.
5. DC current at which the inductance drops the specified amount from its value without current.
6. Current that causes the specified temperature rise from 25°C ambient.
7. Electrical specifications at 25°C.

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

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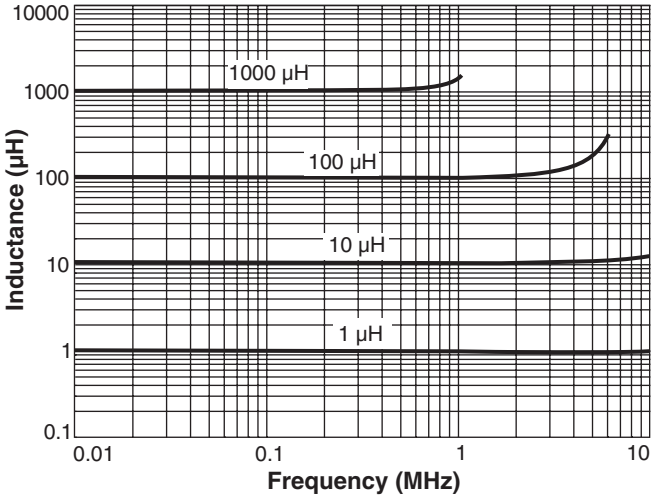
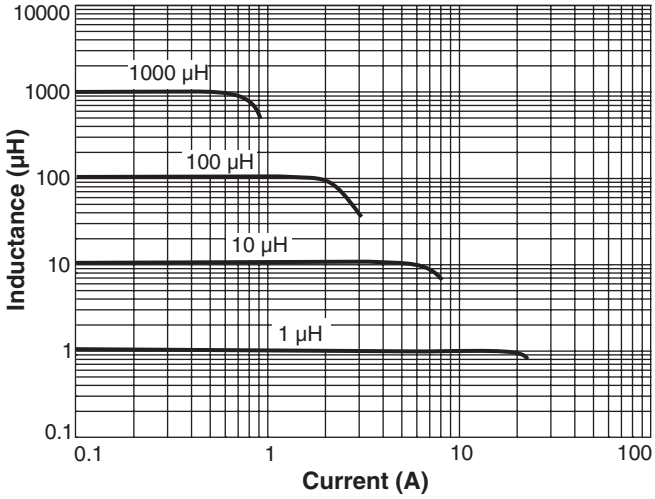
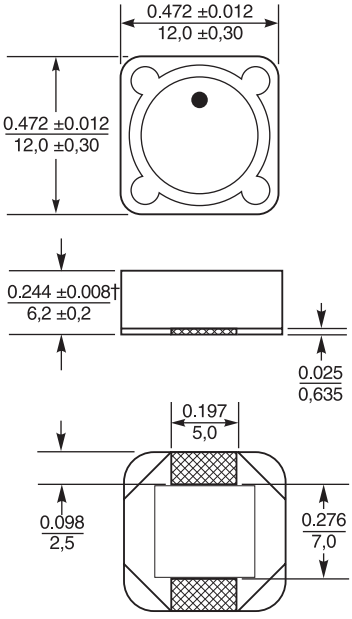
AE590PNB Series

Typical L vs Frequency

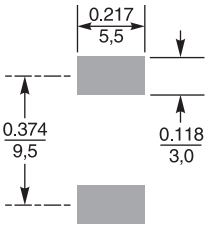


Typical L vs Current





Suggested Land Pattern



† Height dimension is after mounting. For maximum height dimension before mounting, add 0.006 in / 0,152 mm.

Dimensions are in inches / mm

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