

# High-Reliability Power Inductors MS416PJB



- High temperature materials allow operation in ambient temperatures up to 155°C.
- Special construction allows it to pass vibration testing to 80 G and shock testing to 1000 G.
- Tin-lead (Sn-Pb) termination for the best possible board adhesion

**Core material** Ferrite

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

**Weight** 60 – 81 mg

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

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

**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

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

**Enhanced crush-resistant packaging** 1000/7" reel

Plastic tape: 12 mm wide, 0.25 mm thick, 8 mm pocket spacing, 1.32 mm pocket depth

**Recommended pick and place nozzle** OD: 4 mm; ID: ≤ 2 mm

Part number <sup>1</sup>	Inductance <sup>2</sup> (µH)	DCR max <sup>3</sup> (Ohms)	SRF (MHz) <sup>4</sup>		Isat (A) <sup>5</sup>			Irms (A) <sup>6</sup>	
			min	typ	10% drop	20% drop	30% drop	20°C rise	40°C rise
MS416PJB331MSZ	0.33±20%	0.023	262	375	5.2	5.4	5.6	2.2	3.0
MS416PJB681MSZ	0.68±20%	0.055	154	220	3.5	3.6	3.7	1.4	1.9
MS416PJB102NLZ	1.0±30%	0.060	126	180	2.8	2.9	3.0	1.4	1.9
MS416PJB152MSZ	1.5±20%	0.070	98	140	2.6	2.7	2.8	1.3	1.8
MS416PJB222MSZ	2.2±20%	0.100	80	115	2.3	2.4	2.5	1.0	1.4
MS416PJB332MSZ	3.3±20%	0.100	70	100	1.3	1.4	1.4	1.2	1.6
MS416PJB472MSZ	4.7±20%	0.175	49	70	1.6	1.7	1.8	0.88	1.2
MS416PJB562MSZ	5.6±20%	0.260	42	60	1.5	1.6	1.6	0.68	0.88
MS416PJB682MSZ	6.8±20%	0.340	38	55	1.3	1.3	1.4	0.64	0.78
MS416PJB103MSZ	10±20%	0.350	28	40	0.98	1.0	1.1	0.44	0.60
MS416PJB153MSZ	15±20%	0.550	21	30	0.79	0.82	0.84	0.42	0.58
MS416PJB223MSZ	22±20%	0.600	17	25	0.74	0.78	0.79	0.42	0.56
MS416PJB333MSZ	33±20%	0.825	15	22	0.45	0.47	0.48	0.37	0.49
MS416PJB473MSZ	47±20%	1.40	13	19	0.35	0.37	0.38	0.32	0.42
MS416PJB683MSZ	68±20%	1.70	10	15	0.30	0.32	0.33	0.28	0.37
MS416PJB104MSZ	100±20%	2.40	8.0	12	0.24	0.26	0.27	0.24	0.32
MS416PJB124MSZ	120±20%	3.30	8.0	11.5	0.23	0.24	0.25	0.22	0.29
MS416PJB154MSZ	150±20%	3.50	7.0	10.0	0.21	0.22	0.23	0.20	0.26
MS416PJB184MSZ	180±20%	5.00	5.6	8.0	0.18	0.19	0.20	0.18	0.23
MS416PJB224MSZ	220±20%	5.20	4.9	7.0	0.15	0.16	0.17	0.17	0.22
MS416PJB334MSZ	330±20%	7.20	4.9	7.0	0.14	0.14	0.15	0.14	0.18
MS416PJB474MSZ	470±20%	10.0	2.8	4.0	0.10	0.11	0.12	0.10	0.14
MS416PJB564MSZ	560±20%	12.5	2.5	3.5	0.10	0.105	0.115	0.090	0.11
MS416PJB684MSZ	680±20%	13.5	2.0	3.0	0.10	0.105	0.110	0.090	0.11
MS416PJB824MSZ	820±20%	20.0	2.0	3.0	0.090	0.095	0.095	0.080	0.10
MS416PJB105MSZ	1000±20%	21.5	2.0	3.0	0.080	0.090	0.095	0.080	0.10
MS416PJB155MSZ	1500±20%	35.0	1.7	2.5	0.090	0.090	0.090	0.070	0.090
MS416PJB185MSZ	1800±20%	36.0	1.4	2.0	0.079	0.085	0.087	0.060	0.080
MS416PJB225MSZ	2200±20%	40.0	0.70	1.0	0.079	0.083	0.085	0.060	0.070
MS416PJB335MSZ	3300±20%	76.0	0.66	0.95	0.074	0.078	0.080	0.040	0.050

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

**MS416PJB335MSZ**

**Screening: Z** = Unscreened

**H** = Coilcraft CP-SA-10001 Group A

**G** = Coilcraft CP-SA-10001 Group A (SLDC Option A)

**D** = Coilcraft CP-SA-10001 Group A (SLDC Option B)

**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 using an Agilent/HP 4192A. Inductance at 1 MHz is the same for parts with SRF ≥10 MHz.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using Agilent/HP 8753ES or equivalent.

5. DC current at 25°C that causes the specified inductance drop from its value without current.

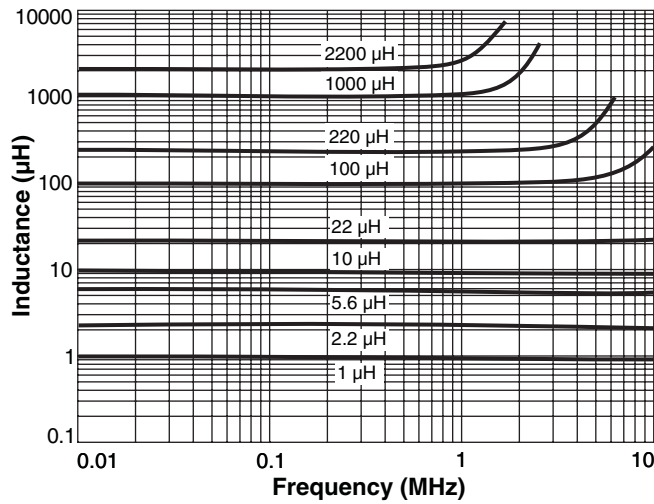
6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.

7. Electrical specifications at 25°C.

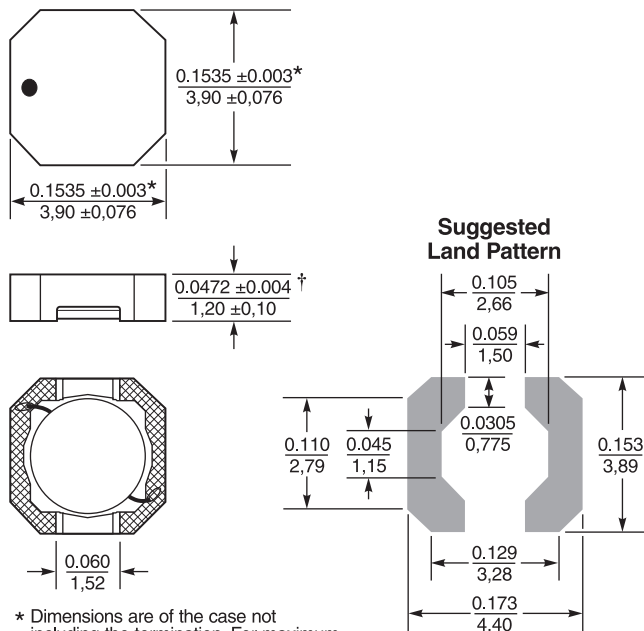
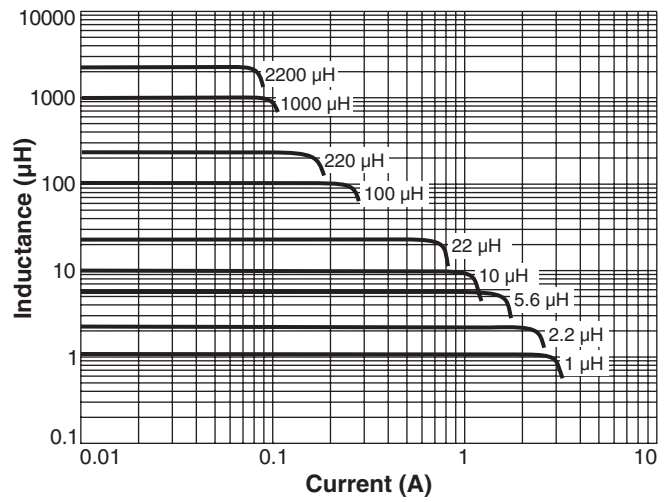
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

# MS416PJB Series (4012)

## Typical L vs Frequency



## Typical L vs Current



\* Dimensions are of the case not including the termination. For maximum overall dimensions including the termination, add 0.010 in / 0,254 mm.

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

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



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