

# High-Reliability Power Inductors MS420PJB



- 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** 70 – 85 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

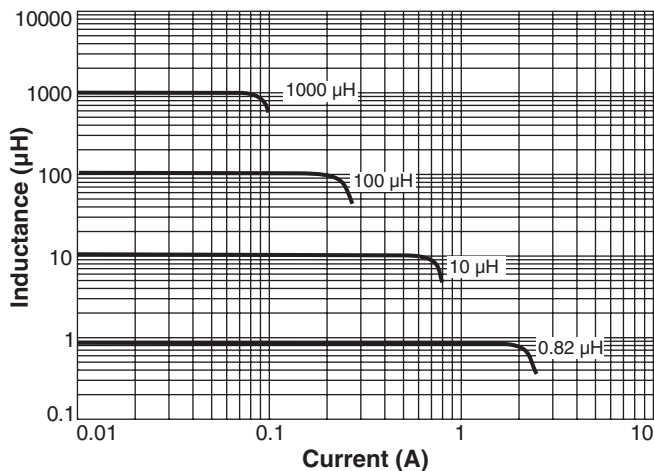
**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

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

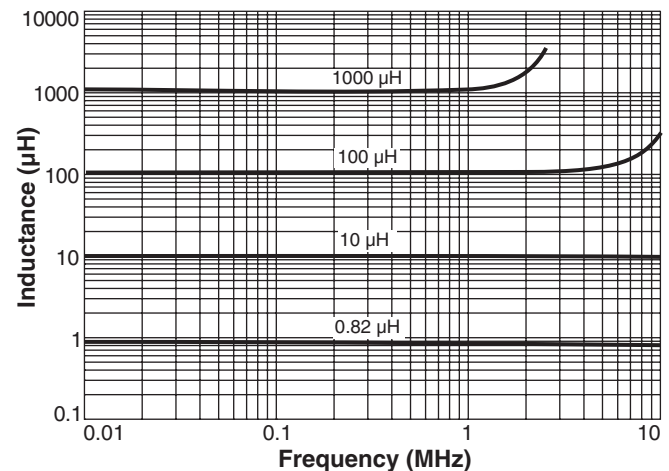
Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing, 1.02 mm pocket depth

**Recommended pick and place nozzle** OD: 5 mm; ID: ≤ 2.5 mm

## Typical L vs Current



## Typical L vs Frequency



# MS420PJB Series (5010)

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>±20% (µH) | DCR max <sup>3</sup><br>(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 |
| MS420PJB471MSZ           | 0.47                                 | 0.038                          | 203                    | 290 | 3.1                   | 3.3      | 3.4      | 1.6                   | 2.2       |
| MS420PJB821MSZ           | 0.82                                 | 0.058                          | 136.5                  | 195 | 2.3                   | 2.5      | 2.6      | 1.0                   | 1.2       |
| MS420PJB152MSZ           | 1.5                                  | 0.072                          | 117.6                  | 168 | 1.7                   | 1.8      | 1.9      | 0.72                  | 1.1       |
| MS420PJB222MSZ           | 2.2                                  | 0.100                          | 100.8                  | 144 | 1.4                   | 1.5      | 1.6      | 0.70                  | 1.0       |
| MS420PJB332MSZ           | 3.3                                  | 0.125                          | 73.5                   | 105 | 1.1                   | 1.2      | 1.3      | 0.69                  | 0.88      |
| MS420PJB472MSZ           | 4.7                                  | 0.175                          | 53.2                   | 76  | 0.95                  | 1.1      | 1.1      | 0.68                  | 0.78      |
| MS420PJB562MSZ           | 5.6                                  | 0.240                          | 52.5                   | 75  | 0.90                  | 0.97     | 1.00     | 0.60                  | 0.74      |
| MS420PJB682MSZ           | 6.8                                  | 0.255                          | 49.7                   | 71  | 0.82                  | 0.90     | 0.93     | 0.59                  | 0.68      |
| MS420PJB103MSZ           | 10                                   | 0.350                          | 35.7                   | 51  | 0.66                  | 0.72     | 0.74     | 0.58                  | 0.64      |
| MS420PJB153MSZ           | 15                                   | 0.500                          | 27.3                   | 39  | 0.55                  | 0.59     | 0.62     | 0.54                  | 0.60      |
| MS420PJB223MSZ           | 22                                   | 0.670                          | 22.4                   | 32  | 0.47                  | 0.51     | 0.53     | 0.37                  | 0.50      |
| MS420PJB333MSZ           | 33                                   | 1.05                           | 18.2                   | 26  | 0.38                  | 0.42     | 0.43     | 0.32                  | 0.44      |
| MS420PJB473MSZ           | 47                                   | 1.45                           | 14.0                   | 20  | 0.31                  | 0.34     | 0.36     | 0.26                  | 0.35      |
| MS420PJB683MSZ           | 68                                   | 2.00                           | 10.5                   | 15  | 0.26                  | 0.29     | 0.30     | 0.20                  | 0.28      |
| MS420PJB104MSZ           | 100                                  | 3.10                           | 8.40                   | 12  | 0.21                  | 0.23     | 0.24     | 0.17                  | 0.22      |
| MS420PJB124MSZ           | 120                                  | 3.50                           | 7.70                   | 11  | 0.20                  | 0.22     | 0.23     | 0.15                  | 0.20      |
| MS420PJB154MSZ           | 150                                  | 4.25                           | 6.30                   | 9.0 | 0.18                  | 0.20     | 0.21     | 0.14                  | 0.18      |
| MS420PJB224MSZ           | 220                                  | 6.25                           | 4.90                   | 7.0 | 0.15                  | 0.16     | 0.17     | 0.12                  | 0.16      |
| MS420PJB334MSZ           | 330                                  | 8.60                           | 3.85                   | 5.5 | 0.12                  | 0.13     | 0.14     | 0.10                  | 0.15      |
| MS420PJB474MSZ           | 470                                  | 12.7                           | 3.15                   | 4.5 | 0.090                 | 0.11     | 0.11     | 0.090                 | 0.12      |
| MS420PJB564MSZ           | 560                                  | 15.7                           | 2.80                   | 4.0 | 0.090                 | 0.10     | 0.10     | 0.080                 | 0.11      |
| MS420PJB684MSZ           | 680                                  | 20.0                           | 2.59                   | 3.7 | 0.090                 | 0.097    | 0.10     | 0.070                 | 0.10      |
| MS420PJB105MSZ           | 1000                                 | 28.0                           | 2.10                   | 3.0 | 0.087                 | 0.096    | 0.10     | 0.060                 | 0.090     |

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

**MS420PJB335MSZ**

**Screening:** Z = Unscreened

H = Coilcraft CP-SA-10001 Group A

1 = EEE-INST-002 (Family 1) Level 1

2 = EEE-INST-002 (Family 1) Level 2

3 = EEE-INST-002 (Family 1) Level 3

4 = MIL-STD-981 (Family 04) Class B

5 = MIL-STD-981 (Family 04) Class S

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.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using an 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.

