

# High-Reliability Power Inductors MS512PJB



- 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** 395 – 544 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

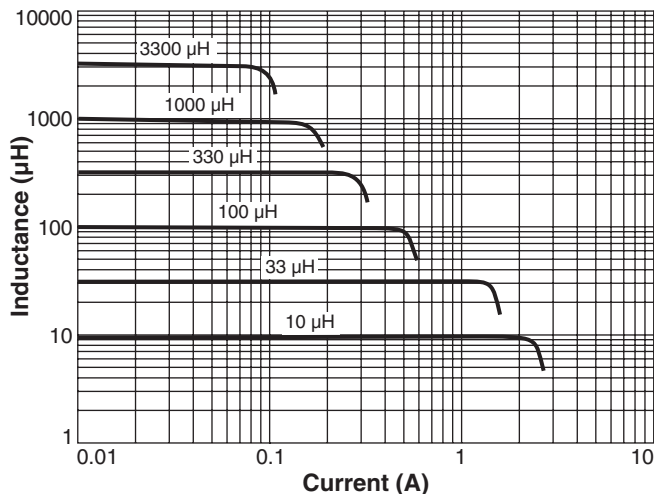
**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Enhanced crush-resistant packaging** 350/7" reel

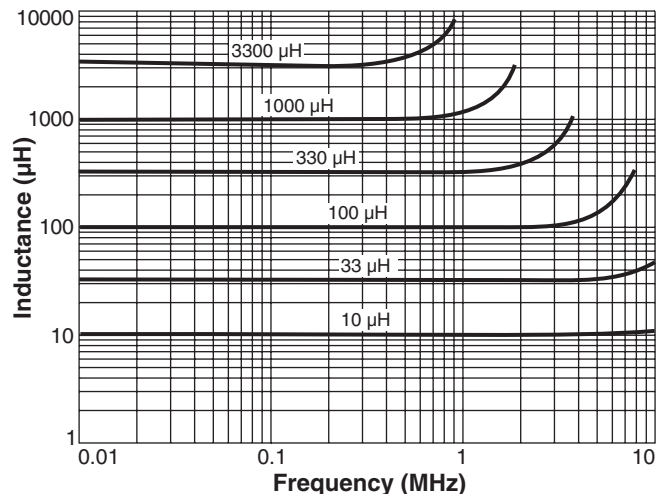
Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing, 3.68 mm pocket depth

**Recommended pick and place nozzle** OD: 6.2 mm; ID: ≤ 3.1 mm

## Typical L vs Current



## Typical L vs Frequency



# MS512PJB Series (6235)

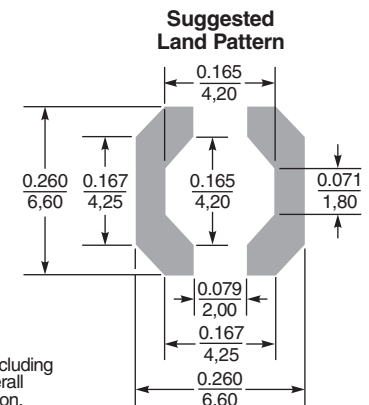
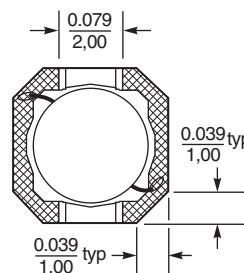
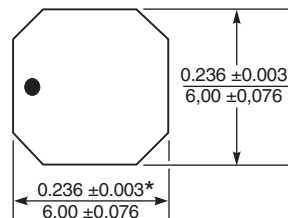
| Part number <sup>1</sup> | Inductance <sup>2</sup><br>±20% (µH) | DCR <sup>3</sup><br>max<br>(Ohms) | SRF<br>(MHz) <sup>4</sup> |      | Isat (A) <sup>5</sup> |             |             | Irms (A) <sup>6</sup> |              |
|--------------------------|--------------------------------------|-----------------------------------|---------------------------|------|-----------------------|-------------|-------------|-----------------------|--------------|
|                          |                                      |                                   | min                       | typ  | 10%<br>drop           | 20%<br>drop | 30%<br>drop | 20°C<br>rise          | 40°C<br>rise |
| MS512PJB682MSZ           | 6.8                                  | 0.075                             | 39                        | 55   | 2.6                   | 2.7         | 2.8         | 1.0                   | 1.5          |
| MS512PJB822MSZ           | 8.2                                  | 0.095                             | 34                        | 48   | 2.5                   | 2.6         | 2.7         | 1.0                   | 1.5          |
| MS512PJB103MSZ           | 10.0                                 | 0.100                             | 26                        | 37   | 2.3                   | 2.4         | 2.5         | 1.0                   | 1.4          |
| MS512PJB123MSZ           | 12.0                                 | 0.110                             | 20                        | 29   | 1.9                   | 2.2         | 2.3         | 1.0                   | 1.4          |
| MS512PJB153MSZ           | 15.0                                 | 0.125                             | 18                        | 25   | 1.9                   | 2.0         | 2.0         | 0.97                  | 1.4          |
| MS512PJB183MSZ           | 18.0                                 | 0.140                             | 17                        | 24   | 1.7                   | 1.8         | 1.9         | 0.96                  | 1.3          |
| MS512PJB223MSZ           | 22.0                                 | 0.145                             | 17                        | 24   | 1.6                   | 1.7         | 1.7         | 0.88                  | 1.3          |
| MS512PJB333MSZ           | 33.0                                 | 0.180                             | 11                        | 16   | 1.3                   | 1.4         | 1.5         | 0.80                  | 1.0          |
| MS512PJB473MSZ           | 47.0                                 | 0.245                             | 9.0                       | 13   | 1.1                   | 1.2         | 1.2         | 0.64                  | 0.92         |
| MS512PJB563MSZ           | 56.0                                 | 0.280                             | 8.4                       | 12   | 1.0                   | 1.0         | 1.1         | 0.60                  | 0.86         |
| MS512PJB683MSZ           | 68.0                                 | 0.345                             | 7.6                       | 10.8 | 0.90                  | 0.94        | 0.96        | 0.58                  | 0.80         |
| MS512PJB823MSZ           | 82.0                                 | 0.315                             | 7.0                       | 10.0 | 0.46                  | 0.52        | 0.55        | 0.58                  | 0.76         |
| MS512PJB104MSZ           | 100.0                                | 0.375                             | 6.3                       | 9.0  | 0.46                  | 0.52        | 0.54        | 0.56                  | 0.72         |
| MS512PJB124MSZ           | 120.0                                | 0.435                             | 5.8                       | 8.3  | 0.44                  | 0.48        | 0.51        | 0.48                  | 0.64         |
| MS512PJB154MSZ           | 150.0                                | 0.535                             | 5.1                       | 7.3  | 0.37                  | 0.43        | 0.45        | 0.42                  | 0.58         |
| MS512PJB224MSZ           | 220.0                                | 0.72                              | 4.0                       | 5.6  | 0.31                  | 0.36        | 0.37        | 0.36                  | 0.51         |
| MS512PJB334MSZ           | 330.0                                | 1.02                              | 3.0                       | 4.4  | 0.26                  | 0.29        | 0.30        | 0.32                  | 0.44         |
| MS512PJB474MSZ           | 470.0                                | 1.58                              | 2.5                       | 3.6  | 0.22                  | 0.25        | 0.26        | 0.29                  | 0.40         |
| MS512PJB564MSZ           | 560.0                                | 1.75                              | 2.2                       | 3.1  | 0.20                  | 0.22        | 0.23        | 0.26                  | 0.37         |
| MS512PJB684MSZ           | 680.0                                | 1.97                              | 2.0                       | 2.8  | 0.17                  | 0.19        | 0.21        | 0.22                  | 0.32         |
| MS512PJB824MSZ           | 820.0                                | 2.70                              | 1.8                       | 2.5  | 0.16                  | 0.18        | 0.19        | 0.21                  | 0.26         |
| MS512PJB105MSZ           | 1000.0                               | 3.20                              | 1.5                       | 2.2  | 0.14                  | 0.17        | 0.18        | 0.19                  | 0.24         |
| MS512PJB155MSZ           | 1500.0                               | 4.60                              | 1.3                       | 1.9  | 0.12                  | 0.13        | 0.14        | 0.15                  | 0.21         |
| MS512PJB185MSZ           | 1800.0                               | 5.42                              | 1.2                       | 1.7  | 0.11                  | 0.12        | 0.13        | 0.14                  | 0.18         |
| MS512PJB225MSZ           | 2200.0                               | 6.40                              | 1.0                       | 1.5  | 0.090                 | 0.11        | 0.11        | 0.13                  | 0.18         |
| MS512PJB335MSZ           | 3300.0                               | 8.90                              | 0.8                       | 1.1  | 0.080                 | 0.090       | 0.10        | 0.11                  | 0.14         |
| MS512PJB475MSZ           | 4700.0                               | 14.0                              | 0.66                      | 0.94 | 0.070                 | 0.077       | 0.084       | 0.095                 | 0.12         |
| MS512PJB565MSZ           | 5600.0                               | 16.4                              | 0.6                       | 0.86 | 0.070                 | 0.080       | 0.085       | 0.080                 | 0.10         |
| MS512PJB685MSZ           | 6800.0                               | 21.4                              | 0.56                      | 0.80 | 0.070                 | 0.075       | 0.080       | 0.070                 | 0.095        |
| MS512PJB825MSZ           | 8200.0                               | 24.0                              | 0.49                      | 0.70 | 0.062                 | 0.070       | 0.078       | 0.065                 | 0.090        |
| MS512PJB106MSZ           | 10000.0                              | 29.0                              | 0.43                      | 0.61 | 0.059                 | 0.067       | 0.074       | 0.060                 | 0.075        |

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

**MS512PJB106MSZ**

- Screening:** **Z** = Unscreened  
**Y** = Unscreened (SLDC Option A)  
**W** = Unscreened (SLDC Option B)  
**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** = 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.

- Inductance tested at 100 kHz, 0.1 Vrms using an Agilent/HP 4192A.
  - DCR measured on a micro-ohmmeter.
  - SRF measured using an Agilent/HP 8753ES or equivalent.
  - DC current at 25°C that causes the specified inductance drop from its value without current.
  - Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
  - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



\* Dimensions are of the case not including the termination. For maximum overall dimensions including the termination, add 0.010 inches / 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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