



# Shielded Power Inductors – MSS5131



- 5.1 × 5.1 mm footprint; 3.1mm high shielded inductors
- Low DCR and excellent current handling

**Designer's Kit C362** contains 3 of each value

**Core material** Ferrite

**Core and winding loss** See [www.coilcraft.com/coreloss](http://www.coilcraft.com/coreloss)

**Terminations** RoHS compliant matte tin over nickel over phos bronze (current production) or gold over nickel over phos bronze (prior production). Other terminations available at additional cost.

**Weight** 0.20 – 0.24 g

**Ambient temperature** –40°C to +85°C with (40°C rise) Irms current.

**Maximum part temperature** +125°C (ambient + temp rise). **Derating.**

**Storage temperature** Component: –40°C to +125°C.

Tape and reel packaging: –40°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)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

**Packaging** 600/7" reel, 2500/13" reel; Plastic tape: 12 mm wide, 0.35 mm thick, 8 mm pocket spacing, 3.25 mm pocket depth

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>±20% (µH) | DCR<br>max<br>(Ohms) | SRF<br>typ <sup>3</sup><br>(MHz) | Isat (A) <sup>4</sup> |             |             | Irms (A) <sup>5</sup> |              |
|--------------------------|--------------------------------------|----------------------|----------------------------------|-----------------------|-------------|-------------|-----------------------|--------------|
|                          |                                      |                      |                                  | 10%<br>drop           | 20%<br>drop | 30%<br>drop | 20°C<br>rise          | 40°C<br>rise |
| MSS5131-222ML_           | 2.2                                  | 0.020                | 65.0                             | 1.76                  | 2.08        | 2.30        | 2.00                  | 3.30         |
| MSS5131-332ML_           | 3.3                                  | 0.028                | 60.0                             | 1.33                  | 1.58        | 1.73        | 1.60                  | 2.90         |
| MSS5131-472ML_           | 4.7                                  | 0.038                | 48.0                             | 1.08                  | 1.32        | 1.42        | 1.40                  | 2.50         |
| MSS5131-562ML_           | 5.6                                  | 0.042                | 44.0                             | 1.00                  | 1.20        | 1.30        | 1.30                  | 2.30         |
| MSS5131-682ML_           | 6.8                                  | 0.050                | 42.0                             | 0.98                  | 1.14        | 1.24        | 1.20                  | 2.16         |
| MSS5131-822ML_           | 8.2                                  | 0.058                | 40.0                             | 0.90                  | 1.04        | 1.18        | 1.10                  | 2.00         |
| MSS5131-103ML_           | 10                                   | 0.070                | 38.0                             | 0.85                  | 0.98        | 1.13        | 1.00                  | 1.90         |
| MSS5131-123ML_           | 12                                   | 0.080                | 35.0                             | 0.72                  | 0.85        | 0.94        | 0.97                  | 1.60         |
| MSS5131-153ML_           | 15                                   | 0.100                | 32.0                             | 0.67                  | 0.78        | 0.86        | 0.94                  | 1.50         |
| MSS5131-183ML_           | 18                                   | 0.120                | 26.0                             | 0.61                  | 0.72        | 0.79        | 0.89                  | 1.40         |
| MSS5131-223ML_           | 22                                   | 0.145                | 22.0                             | 0.54                  | 0.64        | 0.70        | 0.87                  | 1.30         |
| MSS5131-273ML_           | 27                                   | 0.161                | 19.0                             | 0.48                  | 0.56        | 0.62        | 0.85                  | 1.20         |
| MSS5131-333ML_           | 33                                   | 0.200                | 18.0                             | 0.44                  | 0.52        | 0.58        | 0.80                  | 1.10         |
| MSS5131-393ML_           | 39                                   | 0.215                | 17.0                             | 0.42                  | 0.50        | 0.55        | 0.74                  | 1.00         |
| MSS5131-473ML_           | 47                                   | 0.270                | 16.0                             | 0.38                  | 0.46        | 0.51        | 0.71                  | 0.95         |
| MSS5131-563ML_           | 56                                   | 0.280                | 15.0                             | 0.34                  | 0.42        | 0.47        | 0.70                  | 0.90         |
| MSS5131-683ML_           | 68                                   | 0.368                | 12.5                             | 0.31                  | 0.38        | 0.42        | 0.66                  | 0.85         |
| MSS5131-823ML_           | 82                                   | 0.420                | 12.0                             | 0.27                  | 0.32        | 0.35        | 0.62                  | 0.80         |
| MSS5131-104ML_           | 100                                  | 0.580                | 11.5                             | 0.26                  | 0.30        | 0.33        | 0.55                  | 0.69         |
| MSS5131-124ML_           | 120                                  | 0.610                | 11.0                             | 0.23                  | 0.27        | 0.30        | 0.51                  | 0.62         |
| MSS5131-154ML_           | 150                                  | 0.820                | 10.0                             | 0.21                  | 0.26        | 0.28        | 0.47                  | 0.58         |
| MSS5131-184ML_           | 180                                  | 1.00                 | 9.0                              | 0.19                  | 0.23        | 0.25        | 0.43                  | 0.54         |
| MSS5131-224ML_           | 220                                  | 1.10                 | 8.0                              | 0.18                  | 0.21        | 0.23        | 0.39                  | 0.50         |
| MSS5131-274ML_           | 270                                  | 1.43                 | 7.5                              | 0.15                  | 0.18        | 0.20        | 0.35                  | 0.45         |
| MSS5131-334ML_           | 330                                  | 1.58                 | 6.8                              | 0.13                  | 0.17        | 0.19        | 0.32                  | 0.42         |
| MSS5131-394ML_           | 390                                  | 1.80                 | 5.4                              | 0.12                  | 0.15        | 0.16        | 0.30                  | 0.38         |

1. Please specify **termination** and **packaging** codes:

MSS5131-394MLC

**Termination:** L = RoHS compliant matte tin over nickel over phos bronze (current production) or gold over nickel over phos bronze (prior production).

**Special order:**

**T** = RoHS tin-silver-copper (95.5/4/0.5) over gold over nickel over phos bronze or **S** = non-RoHS tin-lead (63/37) over gold over nickel over phos bronze.

**Packaging:** C = 7" machine-ready reel EIA-481 embossed plastic tape (600 per full reel).

**B = Less than full reel** In tape, but not machine-ready. To have a leader and trailer added (\$25 charge), use code letter C instead.

**D = 13" machine-ready reel** EIA-481 embossed plastic tape. Factory order only, not stocked (2500 per reel per full reel).

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4263B LCR meter or equivalent.
3. SRF measured using Agilent/HP 4191A or equivalent.
4. DC current at 25°C that causes the specified inductance drop from its value without current. [Click for temperature derating information.](#)
5. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. [Click for temperature derating information.](#)
6. Electrical specifications at 25°C. Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

**SPICE models**  
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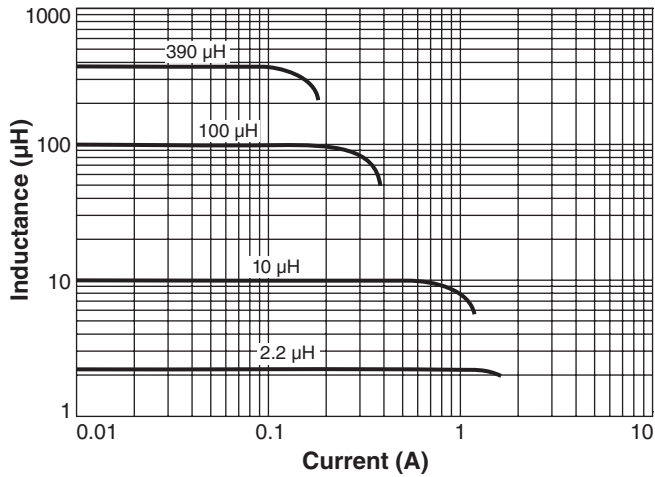
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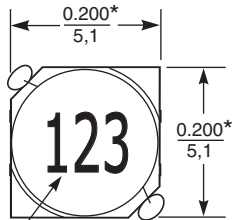
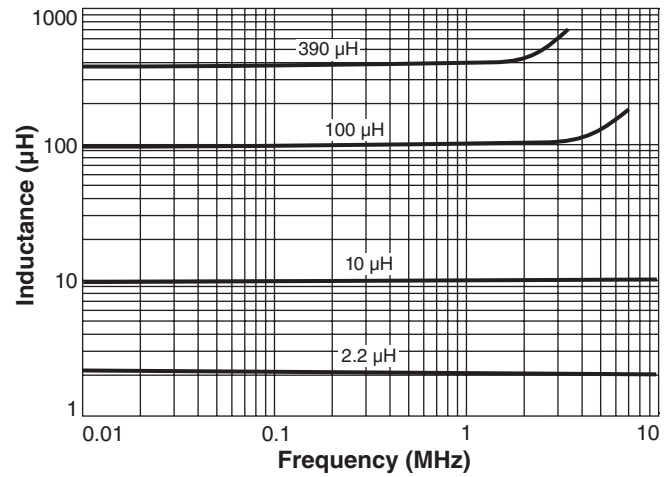


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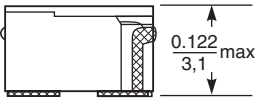
## Typical L vs Current



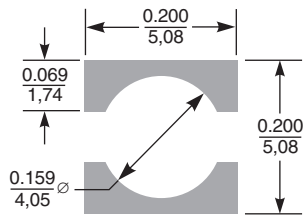
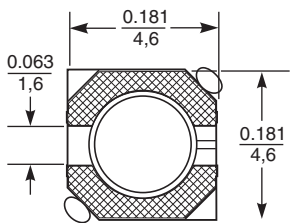
## Typical L vs Frequency



Dash number



\*Dimensions are of the case not including the termination. For maximum overall dimensions including the termination, add 0.035 in / 0,9 mm.



**Recommended Land Pattern**

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



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