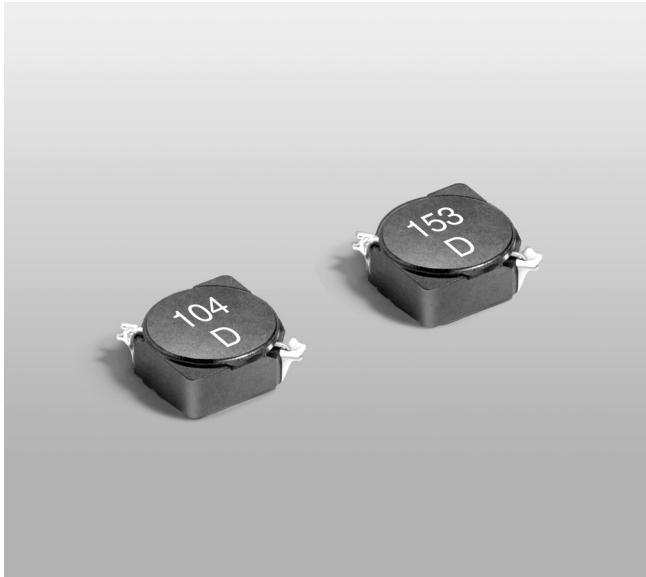




# Shielded Power Inductors – MSS7331



- 7.0 × 7.0 mm footprint; 3.1 mm high shielded inductors
- Low DCR and excellent current handling

**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. Other terminations available at additional cost.

**Weight** 0.48 – 0.51 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** 350/7" reel, 1500/13" reel; Plastic tape: 16 mm wide, 0.35 mm thick, 12 mm pocket spacing, 3.7 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>(µH) | DCR<br>(Ohms) |       | SRF<br>typ <sup>3</sup><br>(MHz) | Isat (A) <sup>4</sup> |             |             | Irms (A) <sup>5</sup> |              |
|--------------------------|---------------------------------|---------------|-------|----------------------------------|-----------------------|-------------|-------------|-----------------------|--------------|
|                          |                                 | typ           | max   |                                  | 10%<br>drop           | 20%<br>drop | 30%<br>drop | 20°C<br>rise          | 40°C<br>rise |
| MSS7331-152NL_           | 1.5 ±30%                        | 0.009         | 0.012 | 80.0                             | 3.5                   | 4.4         | 5.1         | 4.8                   | 6.9          |
| MSS7331-302NL_           | 3.0 ±30%                        | 0.014         | 0.020 | 55.0                             | 2.3                   | 3.0         | 3.5         | 4.2                   | 6.0          |
| MSS7331-392NL_           | 3.9 ±30%                        | 0.017         | 0.023 | 45.0                             | 2.2                   | 2.8         | 3.2         | 4.1                   | 5.7          |
| MSS7331-502ML_           | 5.0 ±20%                        | 0.022         | 0.030 | 40.0                             | 2.0                   | 2.4         | 2.8         | 3.3                   | 4.5          |
| MSS7331-602ML_           | 6.0 ±20%                        | 0.025         | 0.033 | 38.0                             | 1.8                   | 2.2         | 2.6         | 3.4                   | 4.6          |
| MSS7331-732ML_           | 7.3 ±20%                        | 0.035         | 0.045 | 35.0                             | 1.8                   | 2.2         | 2.5         | 2.8                   | 3.8          |
| MSS7331-862ML_           | 8.6 ±20%                        | 0.038         | 0.048 | 33.5                             | 1.6                   | 2.0         | 2.2         | 2.5                   | 3.4          |
| MSS7331-103ML_           | 10 ±20%                         | 0.046         | 0.052 | 30.0                             | 1.4                   | 1.7         | 1.9         | 2.4                   | 3.2          |
| MSS7331-123ML_           | 12 ±20%                         | 0.058         | 0.066 | 26.0                             | 1.3                   | 1.6         | 1.7         | 2.1                   | 2.8          |
| MSS7331-153ML_           | 15 ±20%                         | 0.067         | 0.075 | 24.0                             | 1.2                   | 1.4         | 1.6         | 2.0                   | 2.7          |
| MSS7331-183ML_           | 18 ±20%                         | 0.071         | 0.088 | 22.0                             | 1.1                   | 1.3         | 1.4         | 1.9                   | 2.6          |
| MSS7331-223ML_           | 22 ±20%                         | 0.095         | 0.113 | 21.0                             | 0.98                  | 1.2         | 1.3         | 1.6                   | 2.2          |
| MSS7331-273ML_           | 27 ±20%                         | 0.105         | 0.132 | 17.0                             | 0.89                  | 1.1         | 1.2         | 1.5                   | 2.0          |
| MSS7331-333ML_           | 33 ±20%                         | 0.123         | 0.150 | 16.0                             | 0.80                  | 0.97        | 1.1         | 1.4                   | 1.9          |
| MSS7331-393ML_           | 39 ±20%                         | 0.161         | 0.180 | 14.5                             | 0.70                  | 0.86        | 0.96        | 1.2                   | 1.6          |
| MSS7331-473ML_           | 47 ±20%                         | 0.180         | 0.215 | 12.5                             | 0.67                  | 0.80        | 0.89        | 1.2                   | 1.6          |
| MSS7331-563ML_           | 56 ±20%                         | 0.240         | 0.270 | 11.5                             | 0.61                  | 0.72        | 0.80        | 1.0                   | 1.4          |
| MSS7331-683ML_           | 68 ±20%                         | 0.273         | 0.300 | 10.5                             | 0.55                  | 0.66        | 0.74        | 0.92                  | 1.2          |
| MSS7331-823ML_           | 82 ±20%                         | 0.304         | 0.370 | 9.5                              | 0.52                  | 0.60        | 0.67        | 0.84                  | 1.2          |
| MSS7331-104ML_           | 100 ±20%                        | 0.419         | 0.495 | 8.5                              | 0.45                  | 0.54        | 0.61        | 0.79                  | 1.1          |

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

**MSS7331-104MLC**

**Termination:** L = RoHS compliant gold over nickel over phos bronze

**Special order:**

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

**Packaging:** C = 7" machine-ready reel EIA-481 embossed plastic tape (350 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 (1500 per reel per full reel).

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4284A LCR meter or equivalent.
3. For SRF >13 MHz, SRF measured using an Agilent/HP 8753D network Analyzer or equivalent. For SRF <13 MHz, SRF measured using an Agilent/HP 4192A 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.



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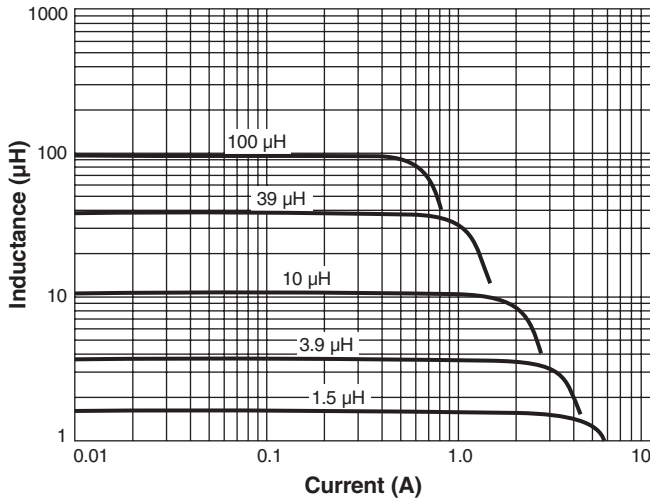
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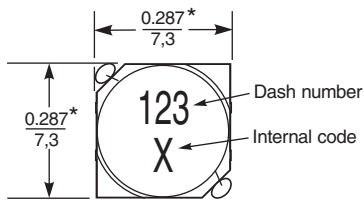
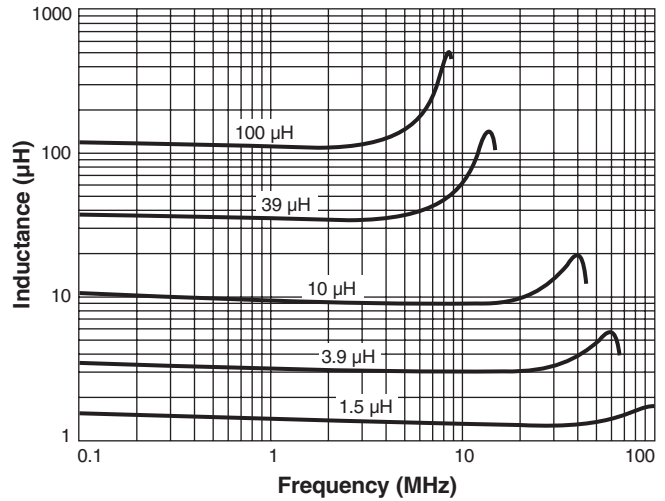


# Shielded Power Inductors – MSS7331

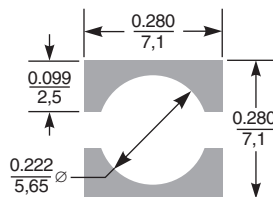
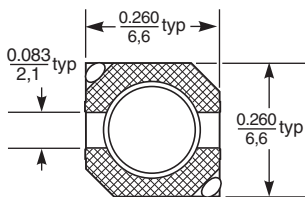
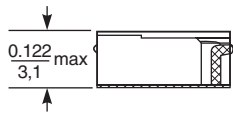
## Typical L vs Current



## Typical L vs Frequency



\* Dimensions are of the case not including the termination. For maximum overall dimensions including the termination, add 0.02 in / 0,51 mm.



**Recommended Land Pattern**

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



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