

# Shielded Power Inductors – MSS6122



- 6.1 × 6.1 mm footprint; 2.2 mm high shielded inductors
- Low DCR and excellent current handling

**Designer's Kit C363** 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** 0.19 – 0.23 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** 500/7" reel, 1500/13" reel; Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 2.1 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 |
| MSS6122-472ML_           | 4.7                                  | 0.065                | 65.0                             | 1.44                  | 1.66        | 1.82        | 1.60                  | 2.30         |
| MSS6122-562ML_           | 5.6                                  | 0.083                | 60.0                             | 1.22                  | 1.46        | 1.60        | 1.50                  | 2.10         |
| MSS6122-682ML_           | 6.8                                  | 0.100                | 48.0                             | 1.18                  | 1.36        | 1.50        | 1.40                  | 2.00         |
| MSS6122-822ML_           | 8.2                                  | 0.120                | 44.0                             | 1.12                  | 1.24        | 1.36        | 1.30                  | 1.80         |
| MSS6122-103ML_           | 10                                   | 0.150                | 42.0                             | 0.98                  | 1.10        | 1.20        | 1.20                  | 1.70         |
| MSS6122-123ML_           | 12                                   | 0.176                | 40.0                             | 0.97                  | 1.06        | 1.14        | 1.13                  | 1.60         |
| MSS6122-153ML_           | 15                                   | 0.210                | 38.0                             | 0.85                  | 0.97        | 1.04        | 1.06                  | 1.50         |
| MSS6122-183ML_           | 18                                   | 0.280                | 35.0                             | 0.78                  | 0.89        | 0.97        | 0.99                  | 1.40         |
| MSS6122-223ML_           | 22                                   | 0.310                | 32.0                             | 0.64                  | 0.75        | 0.82        | 0.92                  | 1.30         |
| MSS6122-273ML_           | 27                                   | 0.350                | 26.0                             | 0.62                  | 0.71        | 0.77        | 0.85                  | 1.20         |
| MSS6122-333ML_           | 33                                   | 0.460                | 22.0                             | 0.60                  | 0.69        | 0.74        | 0.77                  | 1.10         |
| MSS6122-393ML_           | 39                                   | 0.540                | 19.0                             | 0.50                  | 0.59        | 0.64        | 0.70                  | 1.00         |
| MSS6122-473ML_           | 47                                   | 0.680                | 18.0                             | 0.47                  | 0.55        | 0.60        | 0.63                  | 0.90         |
| MSS6122-563ML_           | 56                                   | 0.740                | 17.0                             | 0.43                  | 0.50        | 0.54        | 0.56                  | 0.80         |
| MSS6122-683ML_           | 68                                   | 1.000                | 16.0                             | 0.40                  | 0.46        | 0.50        | 0.49                  | 0.70         |
| MSS6122-823ML_           | 82                                   | 1.200                | 15.0                             | 0.37                  | 0.43        | 0.46        | 0.42                  | 0.60         |
| MSS6122-104ML_           | 100                                  | 1.370                | 12.5                             | 0.32                  | 0.37        | 0.40        | 0.35                  | 0.50         |

- Please specify **termination** and **packaging** codes:

MSS6122-104MLC

**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 (500 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).

- Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4263B LCR meter or equivalent.
- SRF measured using an Agilent/HP 4191A or equivalent.
- DC current at 25°C that causes the specified inductance drop from its value without current. [Click for temperature derating information.](#)
- 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.](#)
- Electrical specifications at 25°C.

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

**SPICE models**

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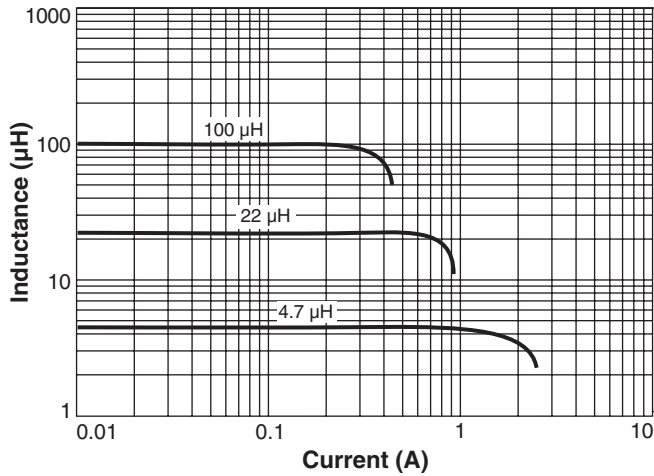
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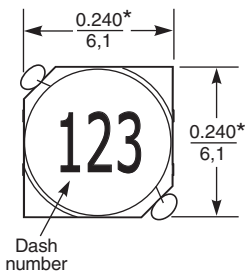
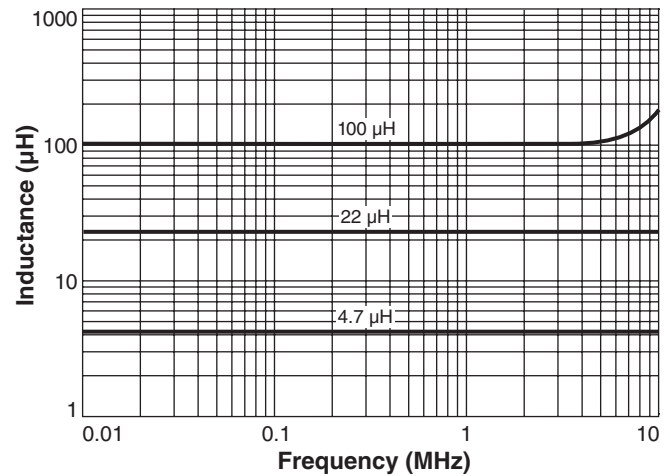


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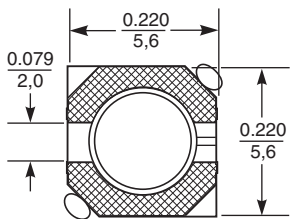
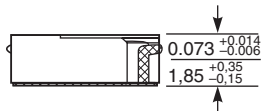
## Typical L vs Current



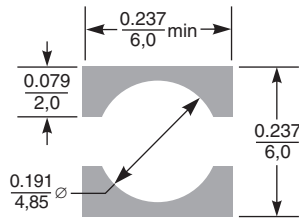
## Typical L vs Frequency



\*Dimensions are of the case not including the termination. For maximum overall dimensions including the termination, add 0.016 in / 0,4 mm.



### Recommended Land Pattern



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



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