



Shielded Power Inductors – MSS4020



- 4 × 4 mm footprint; 2 mm high shielded inductors
- Low DCR and excellent current handling

Designer's Kit C381 contains 3 each of all values.

Core material Ferrite

Core and winding loss See www.coilcraft.com/coreloss

Terminations RoHS compliant matte tin over nickel over phos bronze. Other terminations available at additional cost.

Weight: 81.0 – 87.8 mg

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)

Packaging 2000/13" reel; Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing, 2.2 mm pocket depth

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).

| Part number ¹ | Inductance ² ±20% (µH) | DCR max (Ohms) | SRF typ ³ (MHz) | Isat (A) ⁴ | | | Irms (A) ⁵ | |
|--------------------------|--------------------------------------|-------------------|-------------------------------|-----------------------|----------|----------|-----------------------|-----------|
| | | | | 10% drop | 20% drop | 30% drop | 20°C rise | 40°C rise |
| MSS4020-332ML_ | 3.3 | 0.085 | 109.0 | 0.94 | 1.10 | 1.20 | 1.25 | 1.60 |
| MSS4020-472ML_ | 4.7 | 0.115 | 93.0 | 0.73 | 0.87 | 0.95 | 1.10 | 1.50 |
| MSS4020-562ML_ | 5.6 | 0.130 | 85.0 | 0.70 | 0.82 | 0.89 | 1.05 | 1.40 |
| MSS4020-682ML_ | 6.8 | 0.175 | 75.0 | 0.65 | 0.76 | 0.83 | 0.96 | 1.30 |
| MSS4020-822ML_ | 8.2 | 0.190 | 70.0 | 0.61 | 0.71 | 0.77 | 0.89 | 1.20 |
| MSS4020-103ML_ | 10 | 0.210 | 63.0 | 0.50 | 0.60 | 0.67 | 0.86 | 1.15 |
| MSS4020-123ML_ | 12 | 0.280 | 55.0 | 0.47 | 0.55 | 0.60 | 0.75 | 1.00 |
| MSS4020-153ML_ | 15 | 0.330 | 50.0 | 0.45 | 0.53 | 0.58 | 0.71 | 0.95 |
| MSS4020-183ML_ | 18 | 0.360 | 42.0 | 0.40 | 0.47 | 0.52 | 0.67 | 0.85 |
| MSS4020-223ML_ | 22 | 0.480 | 38.0 | 0.39 | 0.45 | 0.49 | 0.60 | 0.80 |
| MSS4020-273ML_ | 27 | 0.560 | 35.0 | 0.30 | 0.36 | 0.39 | 0.54 | 0.71 |
| MSS4020-333ML_ | 33 | 0.620 | 31.0 | 0.29 | 0.34 | 0.38 | 0.50 | 0.67 |
| MSS4020-393ML_ | 39 | 0.820 | 28.5 | 0.28 | 0.32 | 0.36 | 0.44 | 0.58 |
| MSS4020-473ML_ | 47 | 0.930 | 28.0 | 0.25 | 0.28 | 0.31 | 0.42 | 0.56 |
| MSS4020-563ML_ | 56 | 1.200 | 22.0 | 0.23 | 0.27 | 0.29 | 0.35 | 0.47 |
| MSS4020-683ML_ | 68 | 1.330 | 18.0 | 0.20 | 0.24 | 0.26 | 0.32 | 0.43 |
| MSS4020-823ML_ | 82 | 1.500 | 17.0 | 0.18 | 0.21 | 0.23 | 0.30 | 0.40 |
| MSS4020-104ML_ | 100 | 2.100 | 15.0 | 0.15 | 0.18 | 0.20 | 0.27 | 0.36 |

1. When ordering, please specify **termination** and **packaging** codes:

MSS4020-104MLD

Termination: L = RoHS compliant matte tin over nickel over phos bronze.
Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

Packaging: D = 13" machine-ready reel, EIA-481 embossed plastic tape (2000 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

B = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to D.

2. Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc using a Coilcraft SMD-A fixture in an Agilent/HP 4263B LCR meter or equivalent.

3. SRF measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.

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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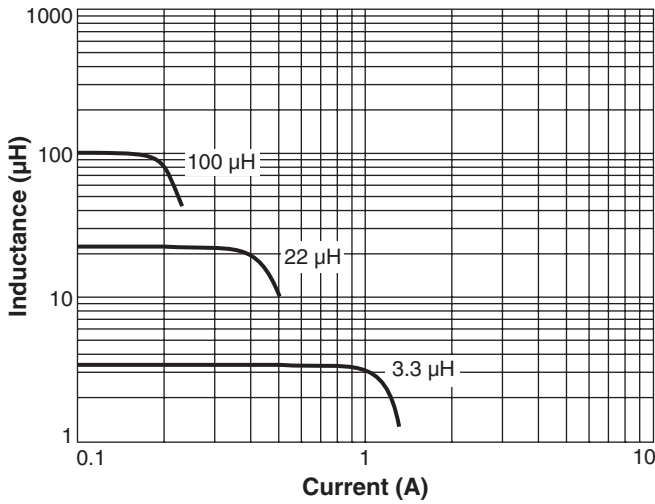
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.



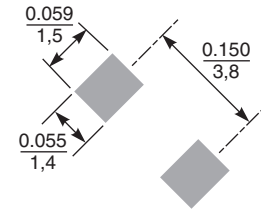
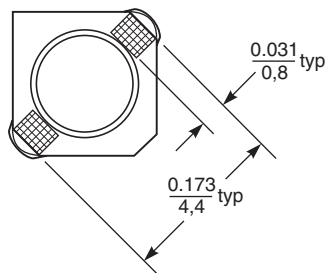
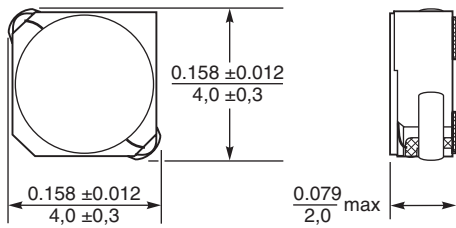
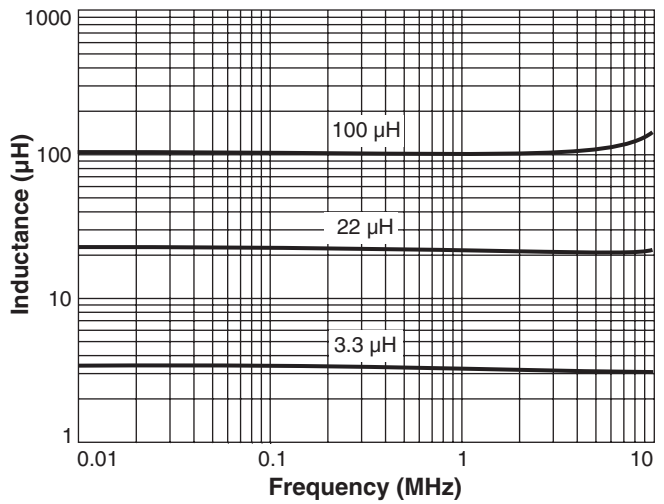
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SPICE models
ON OUR WEB SITE

Typical L vs Current



Typical L vs Frequency



Recommended Land Pattern

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