RoHS COMPLIANT

Halogen Free

# Shielded Power Inductors–MSS1583


- 14.8 × 14.8 mm footprint; 8.6 mm high shielded inductors
- 16 inductance values from 10 µH to 1 mH
- Low DCR and excellent current handling

**Core material** Ferrite

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

**Environment** RoHS compliant, halogen free

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

**Weight:** 3.7 – 4.4 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** 300/13″ reel; Plastic tape: 32 mm wide, 0.5 mm thick, 24 mm pocket spacing, 8.6 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] (µH) | DCR (Ohms)[3] typ | DCR (Ohms)[3] max | SRF typ[4] (MHz) | Isat (A)[5] 10% drop | Isat (A)[5] 20% drop | Isat (A)[5] 30% drop | Irms (A)[6] 20°C rise | Irms (A)[6] 40°C rise |
|---|---|---|---|---|---|---|---|---|---|
| MSS1583-103ME_ | 10 ±20% | 0.012 | 0.014 | 17.0 | 12.0 | 13.6 | 14.7 | 5.0 | 7.4 |
| MSS1583-123ME_ | 12 ±20% | 0.014 | 0.017 | 14.5 | 11.7 | 13.3 | 14.2 | 4.4 | 6.3 |
| MSS1583-153ME_ | 15 ±20% | 0.018 | 0.021 | 13.5 | 10.1 | 11.5 | 12.4 | 4.3 | 6.1 |
| MSS1583-183ME_ | 18 ±20% | 0.020 | 0.023 | 12.0 | 9.2 | 10.5 | 11.2 | 3.9 | 5.5 |
| MSS1583-223ME_ | 22 ±20% | 0.023 | 0.026 | 10.5 | 8.2 | 9.1 | 10.4 | 3.7 | 5.3 |
| MSS1583-333ME_ | 33 ±20% | 0.033 | 0.038 | 8.5 | 7.0 | 7.9 | 8.6 | 3.4 | 4.8 |
| MSS1583-473ME_ | 47 ±20% | 0.048 | 0.055 | 7.3 | 5.9 | 6.7 | 7.3 | 2.7 | 3.7 |
| MSS1583-683ME_ | 68 ±20% | 0.061 | 0.070 | 6.0 | 4.7 | 5.5 | 6.0 | 2.5 | 3.4 |
| MSS1583-104KE_ | 100 ±10% | 0.090 | 0.103 | 4.8 | 3.9 | 4.4 | 4.8 | 2.0 | 2.8 |
| MSS1583-154KE_ | 150 ±10% | 0.138 | 0.159 | 3.7 | 3.1 | 3.6 | 3.9 | 1.55 | 2.20 |
| MSS1583-224KE_ | 220 ±10% | 0.205 | 0.235 | 3.0 | 2.6 | 3.0 | 3.3 | 1.30 | 1.80 |
| MSS1583-334KE_ | 330 ±10% | 0.300 | 0.345 | 2.7 | 2.0 | 2.3 | 2.5 | 1.00 | 1.45 |
| MSS1583-474KE_ | 470 ±10% | 0.386 | 0.445 | 2.2 | 1.8 | 2.0 | 2.2 | 0.96 | 1.35 |
| MSS1583-684KE_ | 680 ±10% | 0.570 | 0.655 | 1.8 | 1.4 | 1.6 | 1.8 | 0.78 | 1.10 |
| MSS1583-824KE_ | 820 ±10% | 0.640 | 0.736 | 1.6 | 1.3 | 1.5 | 1.6 | 0.74 | 1.0 |
| MSS1583-105KE_ | 1000 ±10% | 0.860 | 0.990 | 1.5 | 1.1 | 1.3 | 1.4 | 0.63 | 0.86 |

1. Specify **termination** and **packaging** codes:

**MSS1583-105KED**

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

**Packaging:** **D** = 13″ machine-ready reel. EIA-481 embossed plastic tape (300 parts 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 D instead.

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4263B LCR meter or equivalent.
3. DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.
4. SRF measured using Agilent/HP 4191A or equivalent.
5. DC current at 25°C that causes the specified drop in inductance from its value without current. Click for temperature derating information.
6. 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.
7. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

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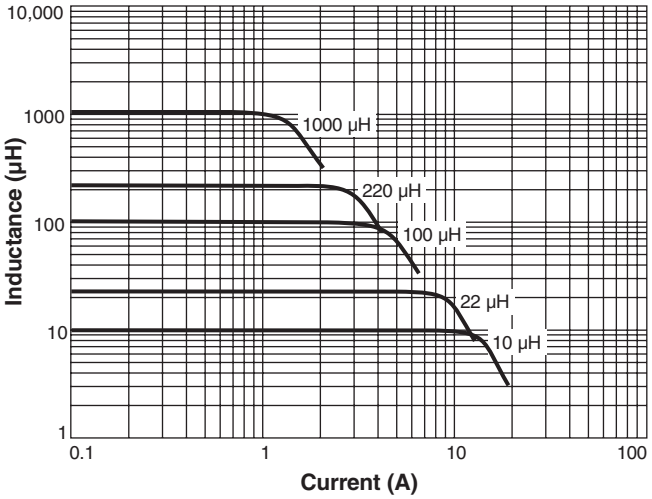
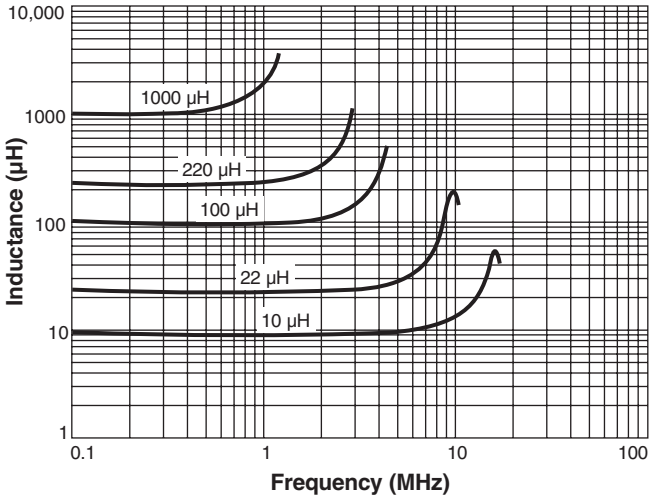
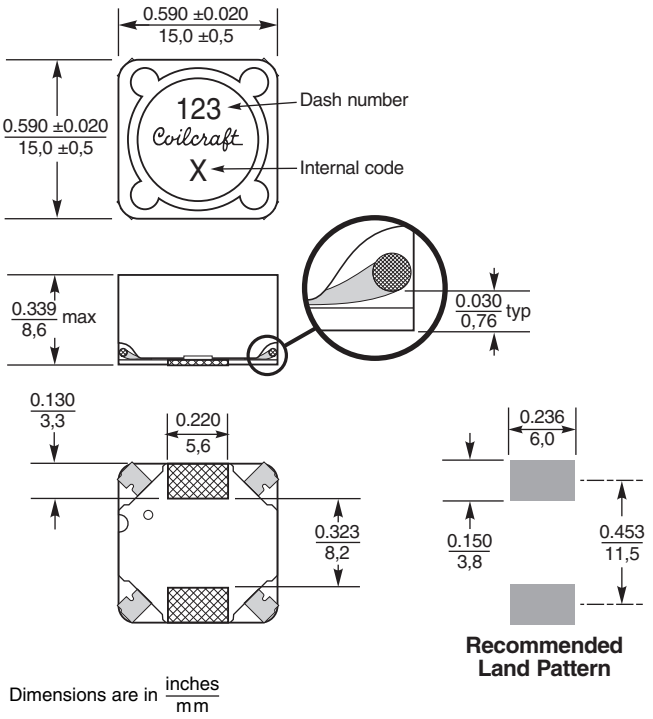
# Shielded Power Inductors – MSS1583

## Typical L vs Current




## Typical L vs Frequency




Recommended Land Pattern

Dimensions are in inches / mm

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