

# Shielded Power Inductors—MSS1583



- 14.8 × 14.8 mm footprint; 8.6 mm high shielded inductors
- 16 inductance values from 10  $\mu\text{H}$  to 1 mH
- Low DCR and excellent current handling

**Core material** Ferrite

**Core and winding loss** See [www.coilcraft.com/coreloss](http://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**  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  with ( $40^{\circ}\text{C}$  rise) Irms current.

**Maximum part temperature**  $+125^{\circ}\text{C}$  (ambient + temp rise). **Derating.**

**Storage temperature** Component:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ .

Tape and reel packaging:  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$

**Resistance to soldering heat** Max three 40 second reflows at  $+260^{\circ}\text{C}$ , parts cooled to room temperature between cycles

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at  $<30^{\circ}\text{C}$  / 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 <sup>1</sup>	Inductance <sup>2</sup> ( $\mu\text{H}$ )	DCR (Ohms) <sup>3</sup>		SRF typ <sup>4</sup> (MHz)	Isat (A) <sup>5</sup>			Irms (A) <sup>6</sup>	
		typ	max		10% drop	20% drop	30% drop	20°C rise	40°C rise
MSS1583-103ME_	10 $\pm 20\%$	0.012	0.014	17.0	12.0	13.6	14.7	5.0	7.4
MSS1583-123ME_	12 $\pm 20\%$	0.014	0.017	14.5	11.7	13.3	14.2	4.4	6.3
MSS1583-153ME_	15 $\pm 20\%$	0.018	0.021	13.5	10.1	11.5	12.4	4.3	6.1
MSS1583-183ME_	18 $\pm 20\%$	0.020	0.023	12.0	9.2	10.5	11.2	3.9	5.5
MSS1583-223ME_	22 $\pm 20\%$	0.023	0.026	10.5	8.2	9.1	10.4	3.7	5.3
MSS1583-333ME_	33 $\pm 20\%$	0.033	0.038	8.5	7.0	7.9	8.6	3.4	4.8
MSS1583-473ME_	47 $\pm 20\%$	0.048	0.055	7.3	5.9	6.7	7.3	2.7	3.7
MSS1583-683ME_	68 $\pm 20\%$	0.061	0.070	6.0	4.7	5.5	6.0	2.5	3.4
MSS1583-104KE_	100 $\pm 10\%$	0.090	0.103	4.8	3.9	4.4	4.8	2.0	2.8
MSS1583-154KE_	150 $\pm 10\%$	0.138	0.159	3.7	3.1	3.6	3.9	1.55	2.20
MSS1583-224KE_	220 $\pm 10\%$	0.205	0.235	3.0	2.6	3.0	3.3	1.30	1.80
MSS1583-334KE_	330 $\pm 10\%$	0.300	0.345	2.7	2.0	2.3	2.5	1.00	1.45
MSS1583-474KE_	470 $\pm 10\%$	0.386	0.445	2.2	1.8	2.0	2.2	0.96	1.35
MSS1583-684KE_	680 $\pm 10\%$	0.570	0.655	1.8	1.4	1.6	1.8	0.78	1.10
MSS1583-824KE_	820 $\pm 10\%$	0.640	0.736	1.6	1.3	1.5	1.6	0.74	1.0
MSS1583-105KE_	1000 $\pm 10\%$	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  $25^{\circ}\text{C}$  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  $25^{\circ}\text{C}$  ambient. This information is for reference only and does not represent absolute maximum ratings. [Click for temperature derating information.](#)

7. Electrical specifications at  $25^{\circ}\text{C}$ .

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



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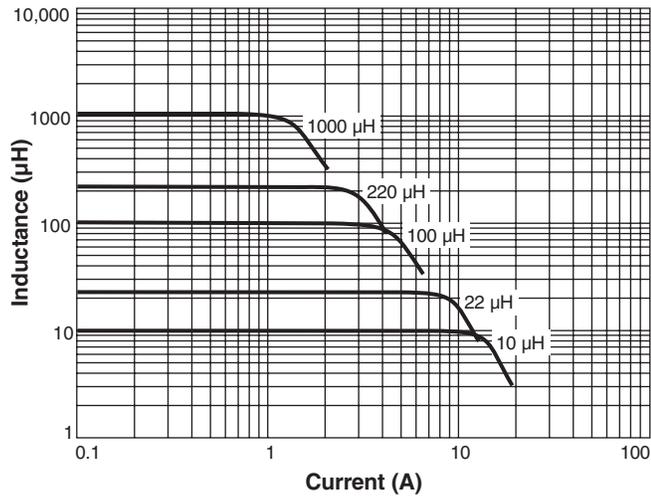
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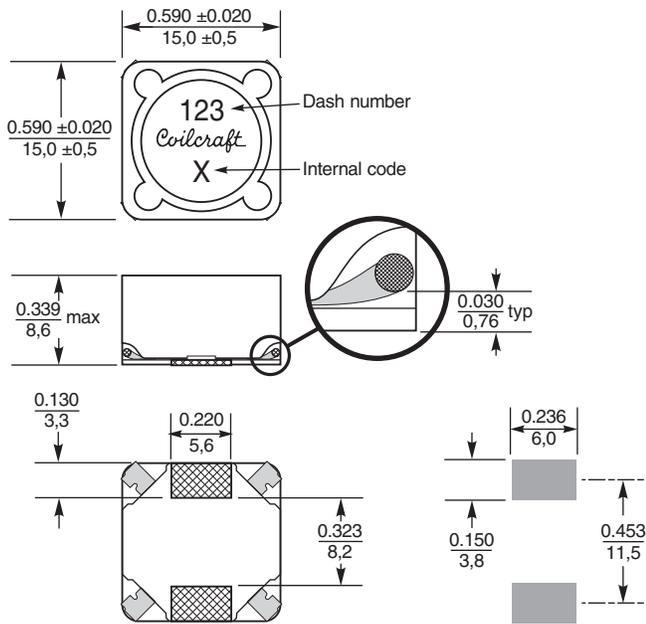
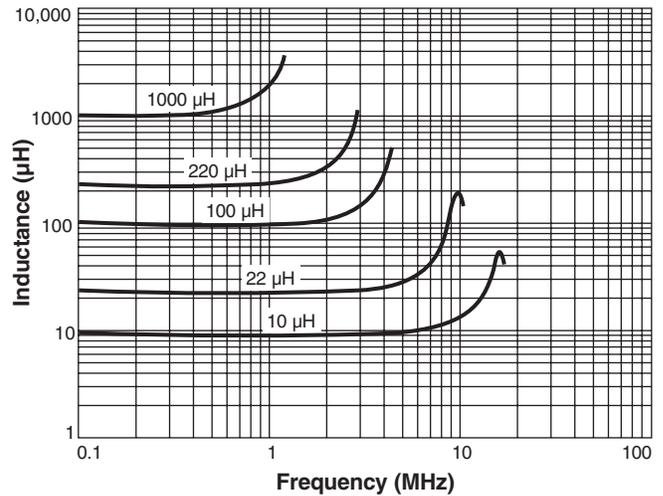


# Shielded Power Inductors – MSS1583

## Typical L vs Current



## Typical L vs Frequency



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

**Recommended Land Pattern**



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