

# Shielded Power Inductors – SER80<sub>XX</sub>



- Two different DCR / Isat versions to match the requirements of a wide variety of applications
- Low DCR; excellent current handling

**Core material** Ferrite

**Core and winding loss** See [www.coilcraft.com/coreloss](http://www.coilcraft.com/coreloss)

**Terminations** RoHS tin-silver over tin over nickel over phos bronze (pins 1 and 2); Matte tin over nickel over phos bronze (pin 3). Other terminations available at additional cost.

**Weight** 0.86 – 1.0 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** 250/7" reel, 1000/13" reel; Plastic tape: 16 mm wide, 0.4 mm thick, 12 mm pocket spacing, 5.2 mm pocket depth

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).

## Low DCR version for high average current applications

Part number <sup>1</sup>	Inductance <sup>2</sup> ±20% (µH)	DCR (mOhm) <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
SER8050-501ME_	0.50	2.22	2.50	234	19.40	22.02	22.68	9.78	13.52
SER8050-112ME_	1.1	3.19	3.50	109	12.22	13.86	14.50	8.05	11.97
SER8050-202ME_	2.0	5.35	5.88	74	7.94	9.22	9.78	7.83	10.79
SER8052-312ME_	3.1	6.44	7.20	63	6.58	7.56	8.00	6.26	8.71
SER8052-452ME_	4.5	8.64	9.50	52	4.76	5.74	6.14	5.37	7.68
SER8052-612ME_	6.1	8.64	9.50	45	3.44	4.22	4.58	5.17	7.31
SER8052-802ME_	8.0	13.03	14.33	43	2.90	3.58	3.86	4.57	6.31
SER8052-103ME_	10	13.03	14.33	40	2.24	2.80	3.10	4.61	6.32

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

SER8052-103MED

**Termination:** E = RoHS tin-silver over tin over nickel over phos bronze (pins 1 and 2); Matte tin over nickel over phos bronze (pin 3).

**Special order:** T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (250 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 C instead.

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked(1000 parts per full reel).

2. Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4284A or equivalent.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using an Agilent/HP 8753D network analyzer and an Agilent/HP 16193A test fixture.

5. DC current at 25°C that causes the specified inductance drop 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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# SER80xx Shielded Power Inductors

High Isat version for high peak current applications

Part number <sup>1</sup>	Inductance <sup>2</sup> ±20% (µH)	DCR (mOhm) <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
SER8050-201ME_	0.20	2.22	2.50	381	51.04	53.04	53.44	8.71	12.89
SER8050-451ME_	0.45	3.19	3.50	216	29.52	30.32	31.12	7.95	11.72
SER8050-811ME_	0.80	5.35	5.88	125	22.48	24.40	25.20	6.48	9.43
SER8052-122ME_	1.2	6.44	7.20	110	17.42	18.54	19.18	6.03	8.11
SER8052-182ME_	1.8	8.64	9.50	91	13.60	14.56	14.88	5.33	7.94
SER8052-242ME_	2.4	8.64	9.50	76	10.36	11.38	11.80	5.40	7.58
SER8052-332ME_	3.2	13.03	14.33	72	9.02	9.84	10.24	4.43	6.25
SER8052-402ME_	4.0	13.03	14.33	66	7.04	7.84	8.24	4.53	6.30

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

### SER8052-402MED

**Termination:** E = RoHS tin-silver over tin over nickel over phos bronze (pins 1 and 2); Matte tin over nickel over phos bronze (pin 3).

**Special order:** T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (250 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 C instead.

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked(1000 parts per full reel).

2. Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4284A or equivalent.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using an Agilent/HP 8753D network analyzer and an Agilent/HP 16193A test fixture.

5. DC current at 25°C that causes the specified inductance drop from its value without current. [Click for temperature derating information.](#)

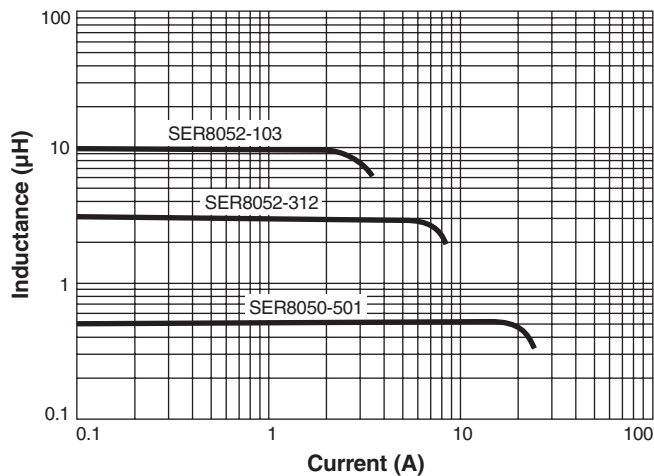
6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. [Click for temperature derating information.](#)

7. Electrical specifications at 25°C.

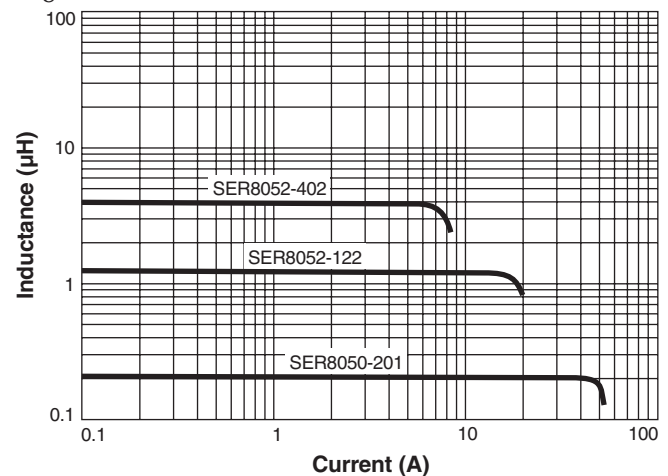
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

## Typical L vs Current

### Low DCR version



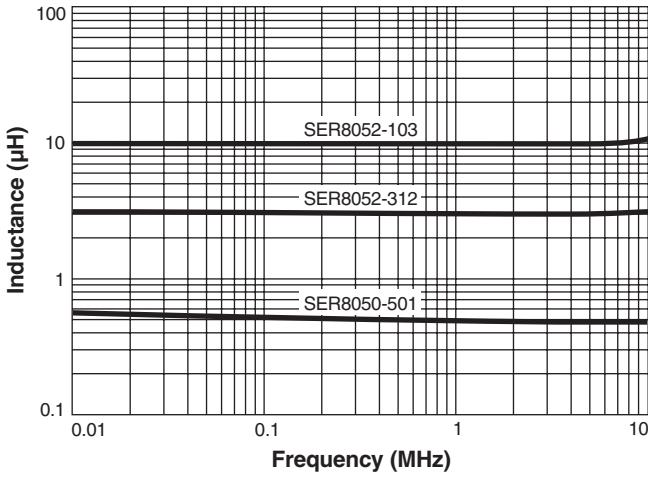
### High Isat version



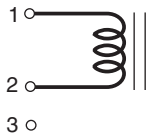
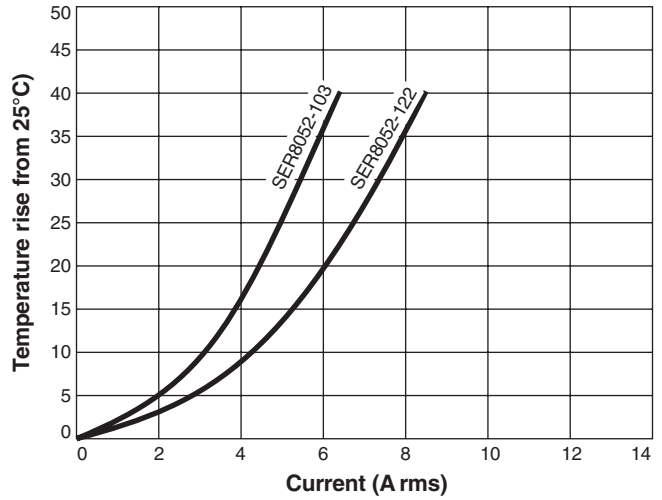


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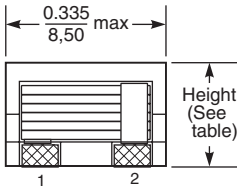
## Typical L vs Frequency



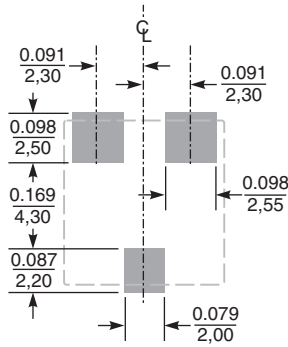
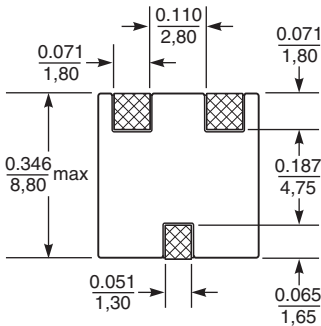
## Typical Temperature Rise vs Current



Terminal 3 is for mounting stability only.



	Height max (in / mm)
SER8050	0.197 / 5,0
SER8052	0.205 / 5,2



**Recommended Land Pattern**

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



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