



# SMT Power Inductors – SD54 Series



- Rugged, cost-effective power inductors
- Excellent current handling; low DCR
- Values greater than 47  $\mu\text{H}$  are 10% tolerance

**Core material** Ferrite

**Terminations** RoHS compliant tin-silver over tin over nickel over silver.

**Weight** 0.35 – 0.43 g

**Ambient temperature**  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  with Irms current,  $+85^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  with derated current

**Storage temperature** Component:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .  
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** 400/7" reel; 1500/13" reel; Plastic tape: 12 mm wide, 0.4 mm thick, 8 mm pocket spacing, 4.7 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 (mOhm)		SRF typ <sup>3</sup> (MHz)	Isat (A) <sup>4</sup>			Irms (A) <sup>5</sup>	
		nom	max		10% drop	20% drop	30% drop	20°C rise	40°C rise
SD54-103ML_	10 $\pm 20\%$	71.5	78.6	28	2.0	2.3	2.4	1.7	2.3
SD54-123ML_	12 $\pm 20\%$	80.2	88.2	26	1.8	2.0	2.2	1.6	2.2
SD54-153ML_	15 $\pm 20\%$	94.0	103	23	1.5	1.8	1.9	1.5	2.1
SD54-183ML_	18 $\pm 20\%$	103	113	21	1.4	1.6	1.8	1.4	2.0
SD54-223ML_	22 $\pm 20\%$	119	130	19	1.3	1.5	1.6	1.3	1.8
SD54-273ML_	27 $\pm 20\%$	134	147	18	1.2	1.4	1.4	1.2	1.7
SD54-333ML_	33 $\pm 20\%$	150	165	16	1.1	1.2	1.3	1.2	1.6
SD54-393ML_	39 $\pm 20\%$	195	214	13	1.0	1.1	1.2	1.0	1.4
SD54-473ML_	47 $\pm 20\%$	222	244	12	0.92	1.0	1.1	0.97	1.3
SD54-563KL_	56 $\pm 10\%$	251	276	11	0.83	0.96	1.0	0.92	1.3
SD54-683KL_	68 $\pm 10\%$	335	368	9.3	0.76	0.88	0.95	0.80	1.1
SD54-823KL_	82 $\pm 10\%$	379	416	8.4	0.69	0.80	0.85	0.74	1.1
SD54-104KL_	100 $\pm 10\%$	503	553	7.4	0.62	0.72	0.77	0.64	0.88
SD54-124KL_	120 $\pm 10\%$	579	636	7.0	0.56	0.66	0.71	0.58	0.80
SD54-154KL_	150 $\pm 10\%$	654	719	6.3	0.51	0.60	0.64	0.57	0.77
SD54-184KL_	180 $\pm 10\%$	874	961	5.5	0.46	0.53	0.57	0.49	0.67
SD54-224KL_	220 $\pm 10\%$	996	1095	5.0	0.43	0.50	0.54	0.47	0.66

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

**SD54-224KLC**

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (400 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

D = 13" machine-ready reel. EIA-481 embossed plastic tape.  
Factory order only, not stocked (1500 parts per full reel).

B = 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 C.

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

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

4. DC current at which the inductance drops the specified amount from its value without current.

5. Current that causes the specified rise from 25°C ambient.

6. Electrical specifications at 25°C.

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



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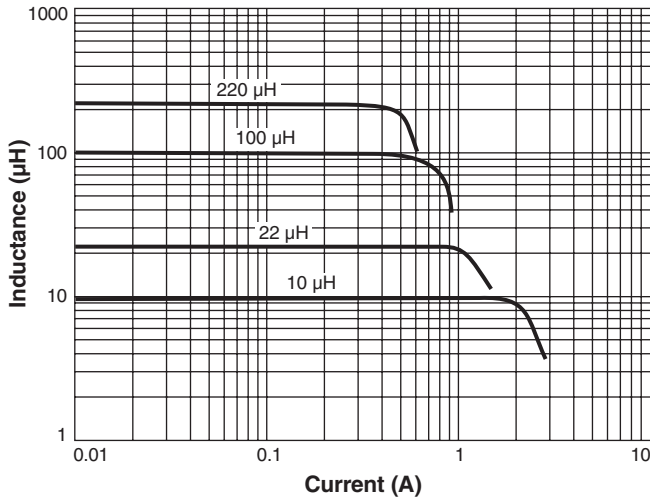
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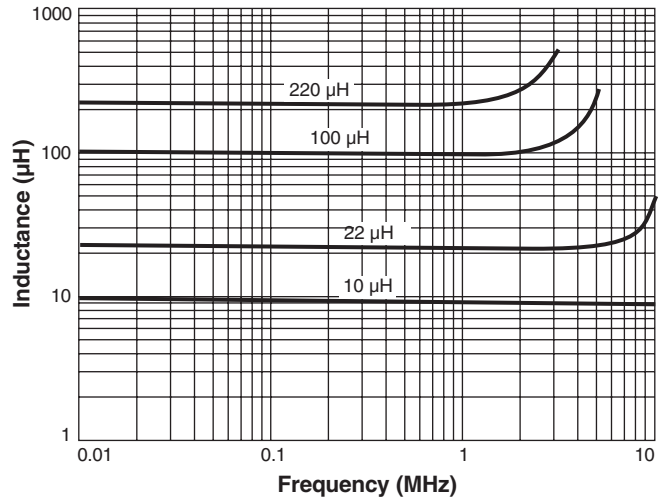


# SMT Power Inductors – SD54 Series

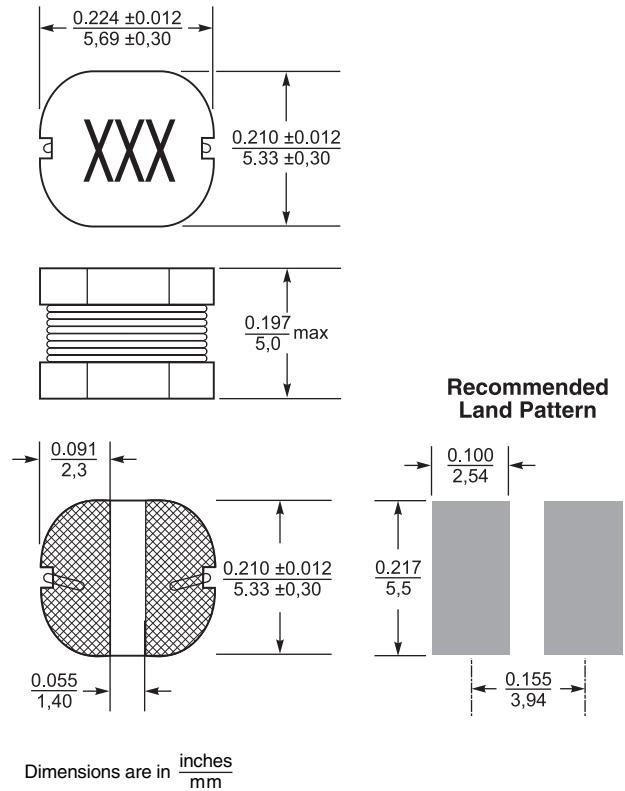
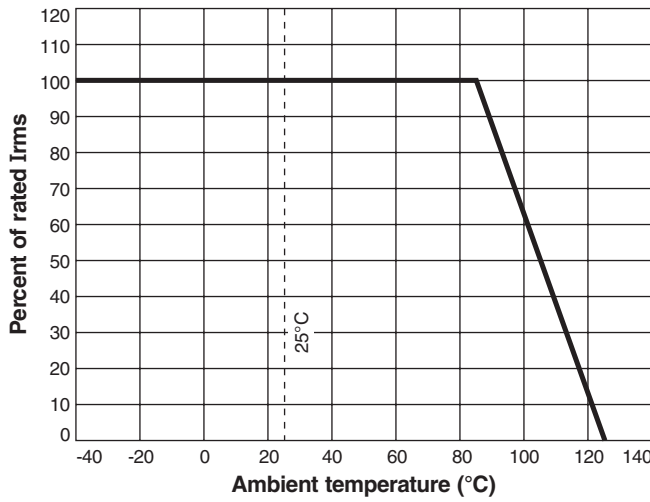
## Typical L vs Current



## Typical L vs Frequency



## Irms Derating



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