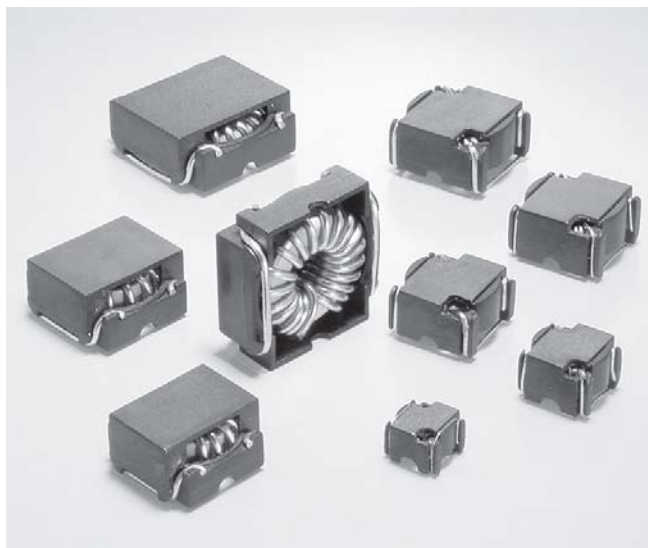




# SMT Power Inductors – SPT Series



- Toroid winding eliminates stray electromagnetic emissions
- Two versions: Standard, current ratings up to 8 Amps; High current, with ratings up to 13.9 Amp

**Core material** Powdered iron

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

**Terminations** RoHS compliant tin-silver over copper. Other terminations available at additional cost.

**Ambient temperature** -40°C to +85°C

**Maximum part temperature:** The part temperature should not exceed +85°C (ambient + self-heating). Prolonged operation above +85°C may result in a permanent increase in core loss and part failure due to thermal aging of the core material.

**Storage temperature** Component: -40°C to +85°C. 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

**PCB washing** Only pure water or alcohol recommended

Part number <sup>1</sup>	L at 0A <sup>2</sup> ±20% (µH)	L typ <sup>3</sup> (µH)	DCR max (mOhm)	SRF typ <sup>4</sup> (MHz)	Isat (A)	Body size
<b>Standard series</b>						
SPT20L-112ML_	1.1	1.01	16.0	360	3.4	1
SPT38L-382ML_	3.8	2.5	9.3	133	8.0	3
SPT30L-522ML_	5.2	3.8	19.9	60	4.8	2
SPT20L-702ML_	7.0	6.2	95.0	70	1.4	1
SPT38L-752ML_	7.5	5.1	18.7	73	5.4	3
SPT44L-792ML_	7.9	4.9	16.2	49	7.8	4
SPT30L-123ML_	12	9.4	47.2	33	2.8	2
SPT44L-143ML_	14	9.0	23.6	20	5.5	4
SPT50L-163ML_	16	9.3	19.7	19	7.2	5
SPT38L-223ML_	22	16.2	63	34	2.7	3
SPT20L-233ML_	23	17.6	320	21	1.0	1
SPT50L-263ML_	26	16.1	32	9.2	5.1	5
SPT30L-353ML_	35	29.7	166	12.0	1.4	2
SPT44L-413ML_	41	29.1	85	9.5	2.7	4
SPT38L-733ML_	73	58.1	290	5.0	1.3	3
SPT50L-733ML_	73	50	133	14.0	2.6	5
SPT30L-174ML_	170	114	640	3.3	0.94	2
SPT38L-294ML_	290	192	657	2.3	0.90	3
SPT50L-564ML_	560	350	550	1.0	0.90	5
SPT38L-674ML_	670	383	1200	1.2	0.72	3
SPT44L-115ML_	1100	670	1908	0.73	0.70	4
SPT50L-205ML_	2000	1070	1932	0.40	0.71	5
<b>High current series</b>						
SPT44H-282ML_	2.8	1.68	4.6	136	13.9	6
SPT44H-422ML_	4.2	2.5	6.6	72	11.4	6
SPT50H-652ML_	6.5	3.5	7.2	46	12.4	7
SPT50H-842ML_	8.4	4.7	8.5	23	10.4	7
SPT68H-113ML_	11	6.5	8.2	20	14.0	8
SPT68H-183ML_	18	10.0	12.5	9	10.0	8

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

SPT20L-112ML D

**Termination:** L = RoHS compliant tin-silver over copper.  
**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.  
Body size 1: 750 per full reel.  
Body sizes 2-3: 350 per full reel.  
Body size 4: 300 per full reel.  
Body sizes 5-6: 250 per full reel.  
Body sizes 7-8: 200 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 on Agilent/HP 4192A.
  3. Inductance with Isat current applied tested at 100 kHz, 0.1 Vrms on Agilent/HP 4284A.
  4. SRF measured on Agilent/HP 8753ES network analyzer.
  5. Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

**Coilcraft**<sup>®</sup>

Specifications subject to change without notice.

Please check our website for latest information. Document 280-1 Revised 01/26/10

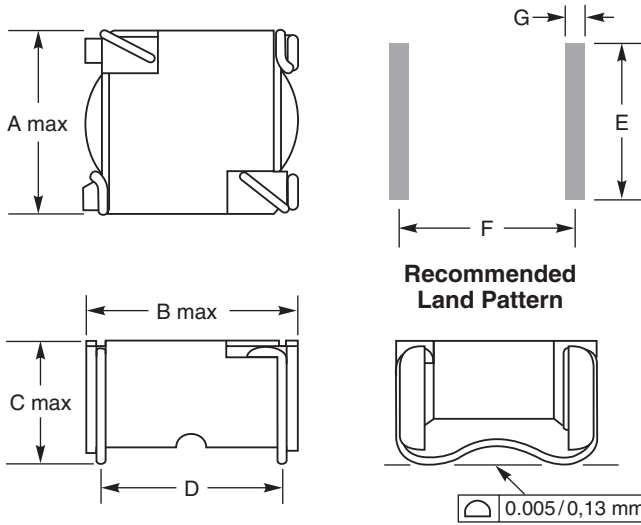
1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

E-mail [info@coilcraft.com](mailto:info@coilcraft.com) Web <http://www.coilcraft.com>

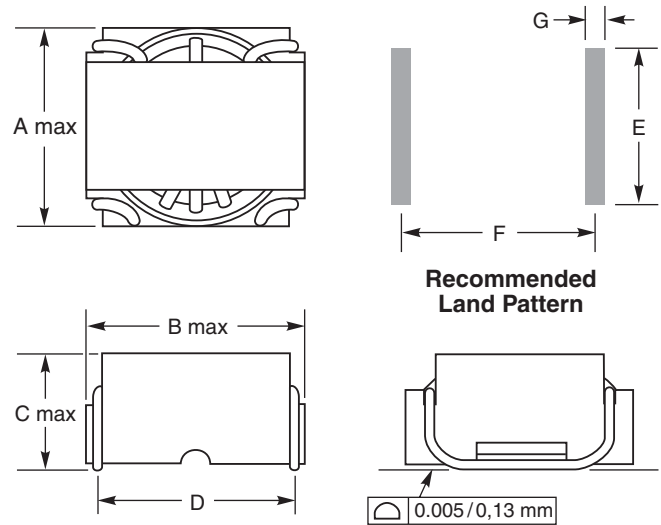


# SMT Power Inductors - SPT Series

## Body size 1 - 5



## Body size 6 - 8



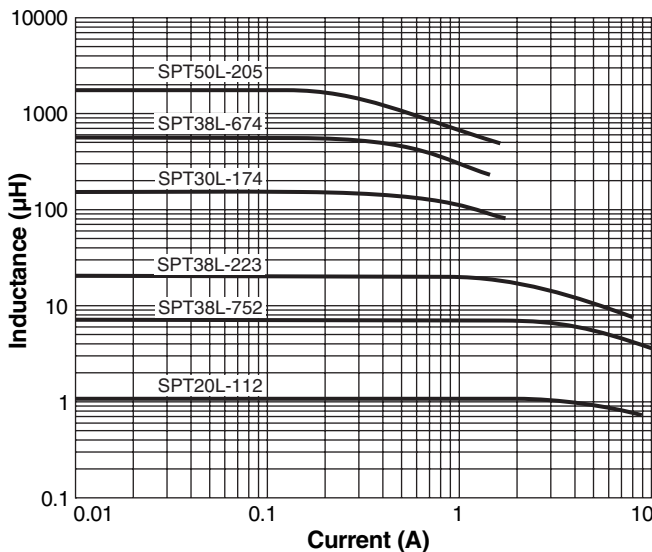
Terminations: Tin-silver over copper

Size	A max	B max	C max	D <sup>1</sup>	E <sup>2</sup>	F <sup>2</sup>	G	Weight (g)
1	0.34/8,64	0.34/8,64	0.28/7,00	0.26/6,60	0.30/7,62	0.27/6,86	0.06/1,52	0.47 - 0.54
2	0.44/11,05	0.44/11,18	0.37/9,50	0.35/8,89	0.40/10,16	0.36/9,14	0.06/1,52	1.42 - 1.59
3	0.56/14,22	0.56/14,35	0.37/9,50	0.45/11,43	0.52/13,21	0.46/11,68	0.06/1,52	2.73 - 3.34
4	0.59/14,99	0.61/15,62	0.41/10,50	0.50/12,70	0.55/13,97	0.51/12,95	0.06/1,52	3.57 - 4.08
5	0.67/17,02	0.70/17,78	0.41/10,50	0.58/14,73	0.62/15,75	0.59/14,99	0.06/1,52	5.19 - 5.97
6	0.66/16,89	0.66/16,89	0.41/10,50	0.56/14,22	0.49/12,45	0.57/14,48	0.08/2,03	4.23 - 4.48
7	0.74/18,80	0.74/18,80	0.41/10,50	0.63/16,00	0.56/14,22	0.64/16,26	0.08/2,03	6.18 - 6.53
8	0.94/23,88	0.94/23,88	0.41/10,50	0.82/20,83	0.70/17,78	0.83/21,08	0.08/2,03	11.12 - 11.63

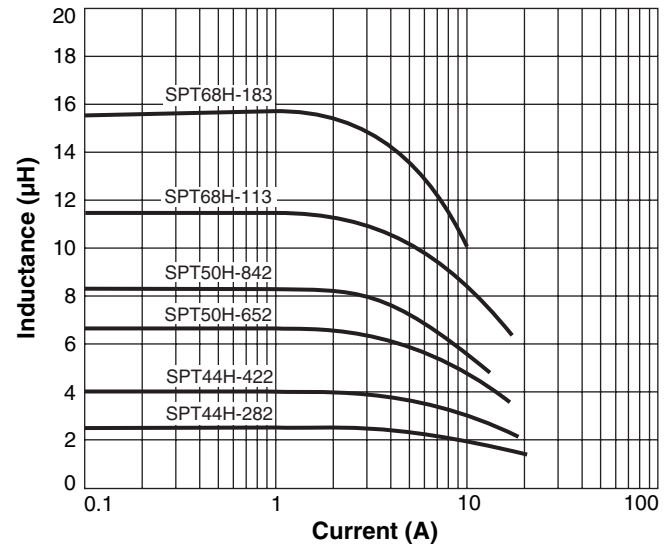
Dimensions are in inches / mm. Unless specified, tolerance is ± 0.009/0,25.

- 1. ±0.015/0,38
- 2. ±0.005/0,13

## Typical L vs Current (Standard series)



## Typical L vs Current (High current series)



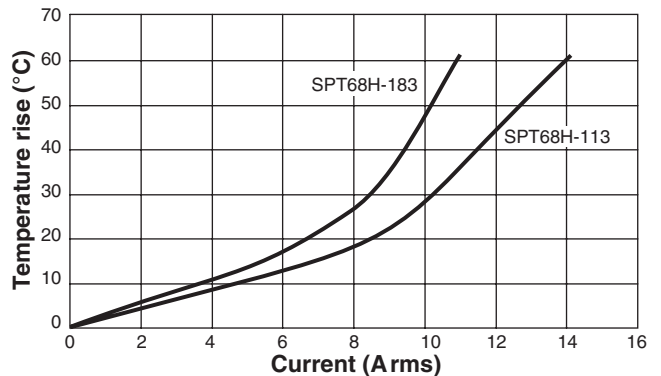
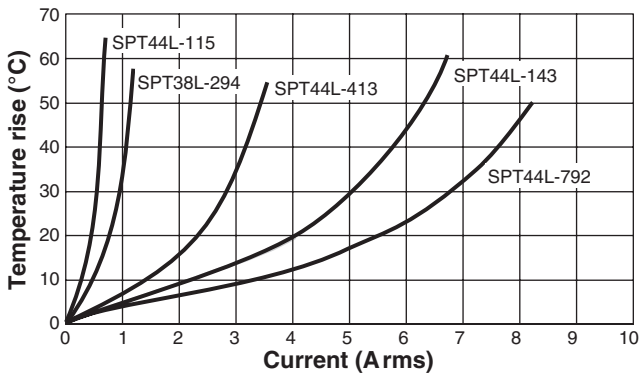
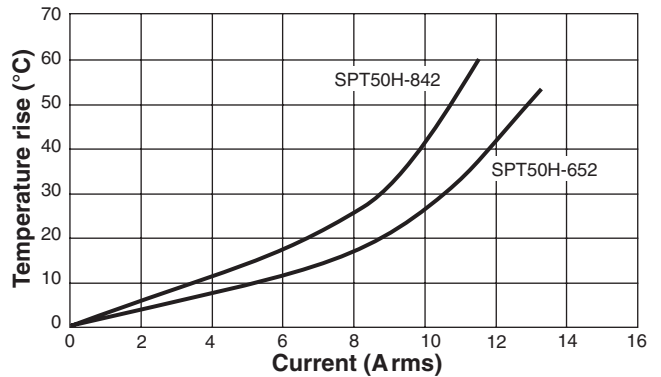
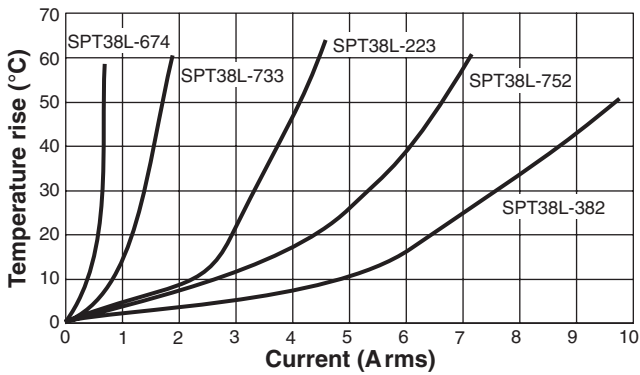
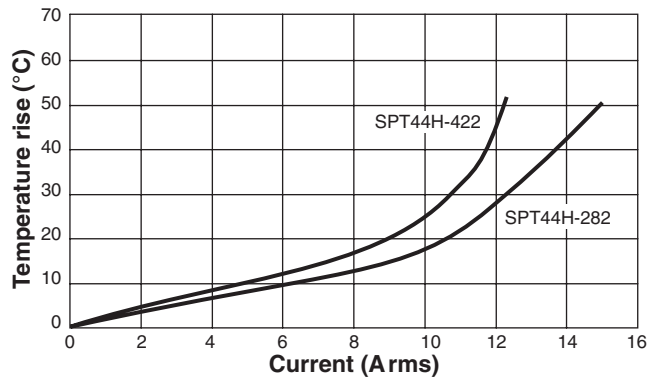
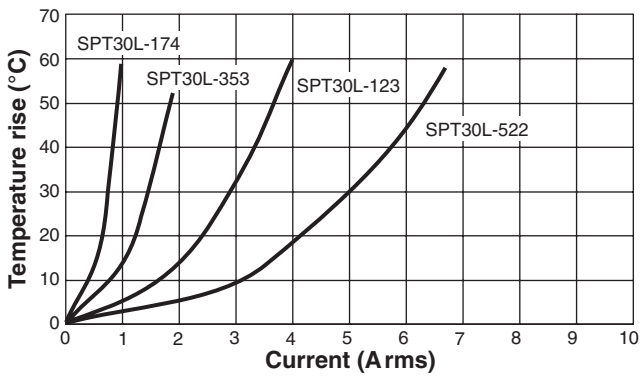
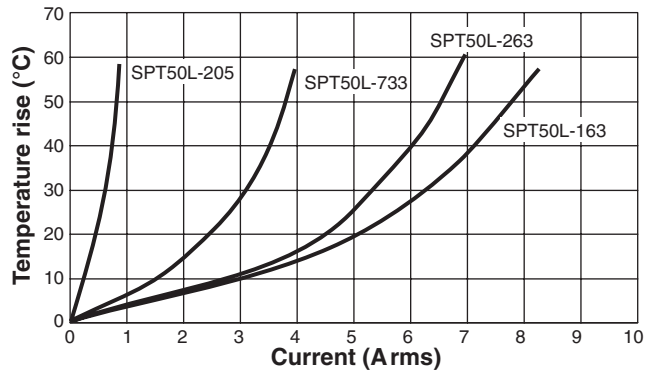
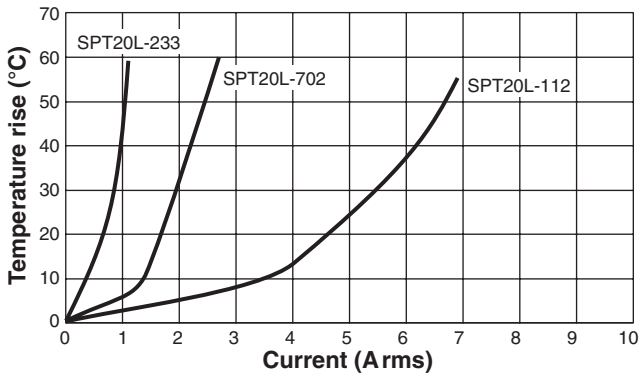
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# SMT Power Inductors - SPT Series

## Typical Temperature Rise vs Current \*



\* Measured at 25°C ambient.



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