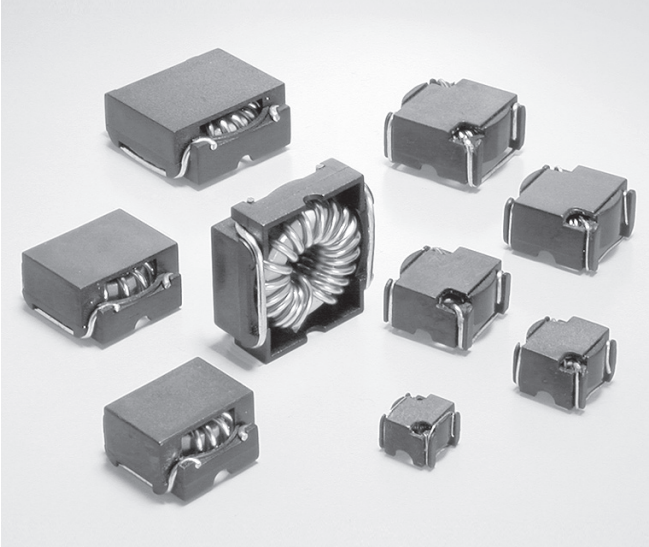
Toroid Power Inductors – SPT Series



- Toroid winding eliminates stray electromagnetic emissions
- Two versions: Standard, current ratings up to 8 Amps; High current, with ratings up to 12.2 Amp

Core material Powered iron

Core and winding loss See 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[1]	L[2] ±20% (µH)	DCR max (mOhm)	SRF typ[3] (MHz)	Isat (A)[4] 10% drop	20% drop	30% drop	Body size
Standard series							
SPT20L-112ML_	1.1	16.0	130	3.2	4.8	6.7	1
SPT38L-382ML_	3.8	9.3	61	4.0	6.1	8.2	3
SPT30L-522ML_	5.2	24.2	47	2.8	4.2	5.8	2
SPT20L-702ML_	7.0	95.0	37	1.2	1.8	2.5	1
SPT38L-752ML_	7.5	22.8	50	2.7	4.2	5.8	3
SPT44L-792ML_	7.9	16.2	26	3.5	5.4	7.3	4
SPT30L-123ML_	12	54.7	23.9	1.9	2.8	3.7	2
SPT44L-143ML_	14	23.6	15.6	2.8	4.1	5.7	4
SPT50L-163ML_	16	19.7	14.3	2.8	4.2	5.8	5
SPT38L-223ML_	22	63	18.1	1.5	2.3	3.1	3
SPT20L-233ML_	23	320	13.5	0.6	1.0	1.3	1
SPT50L-263ML_	26	32	11.2	2.3	3.4	4.6	5
SPT30L-353ML_	35	166	11.0	1.1	1.6	2.2	2
SPT44L-413ML_	41	85	8.30	1.6	2.3	3.1	4
SPT38L-733ML_	73	290	10.8	0.81	1.3	1.7	3
SPT50L-733ML_	73	133	4.56	1.4	2.0	2.7	5
SPT30L-174ML_	170	640	3.84	0.44	0.68	0.95	2
SPT38L-294ML_	290	657	2.87	0.41	0.64	0.90	3
SPT50L-564ML_	560	550	1.54	0.37	0.59	0.81	5
SPT38L-674ML_	670	1200	1.38	0.26	0.40	0.55	3
SPT44L-115ML_	1100	1908	1.35	0.25	0.41	0.57	4
SPT50L-205ML_	2000	1932	1.35	0.18	0.29	0.41	5
High current series							
SPT44H-282ML_	2.8	4.6	74	5.8	8.8	12.2	6
SPT44H-422ML_	4.2	6.6	61	5.0	7.8	10.9	6
SPT50H-652ML_	6.5	7.2	27.3	4.6	6.7	9.1	7
SPT50H-842ML_	8.4	8.5	22.8	4.3	6.4	8.5	7
SPT68H-113ML_	11	8.2	25.9	4.8	7.2	9.9	8
SPT68H-183ML_	18	12.5	12.0	3.9	5.7	7.7	8

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

SPT20L-112MLD

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. SRF measured on Agilent/HP 8753ES network analyzer.
4. DC current that causes the specified inductance drop from its value without current.
5. Electrical specifications at 25°C.

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

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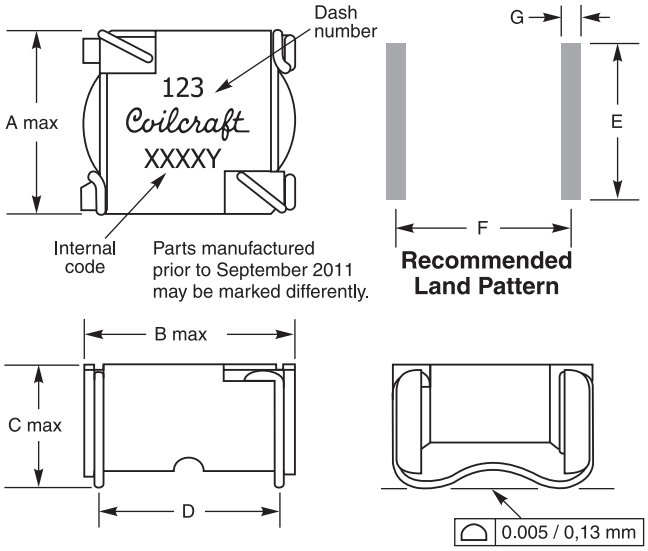
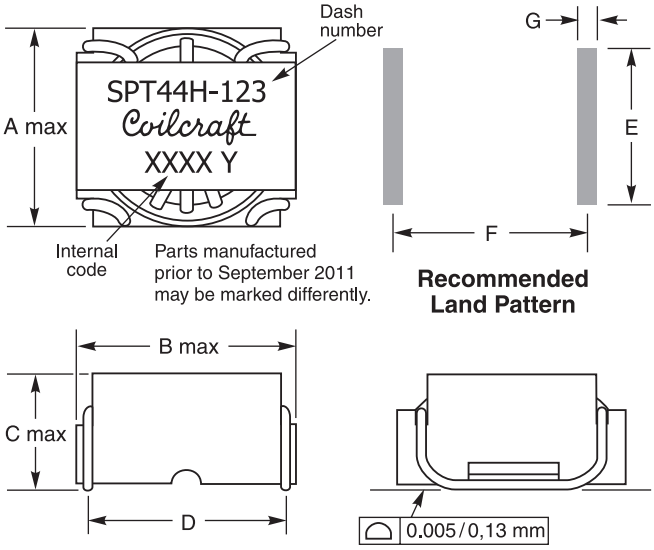
Body size 1 - 5



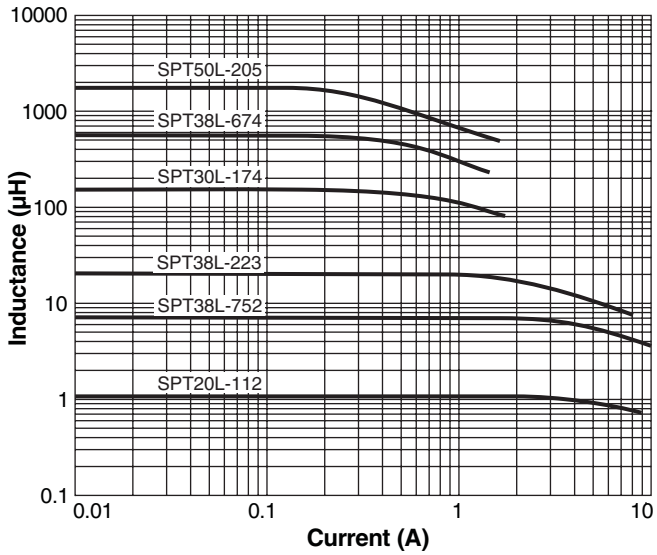
Body size 6 - 8



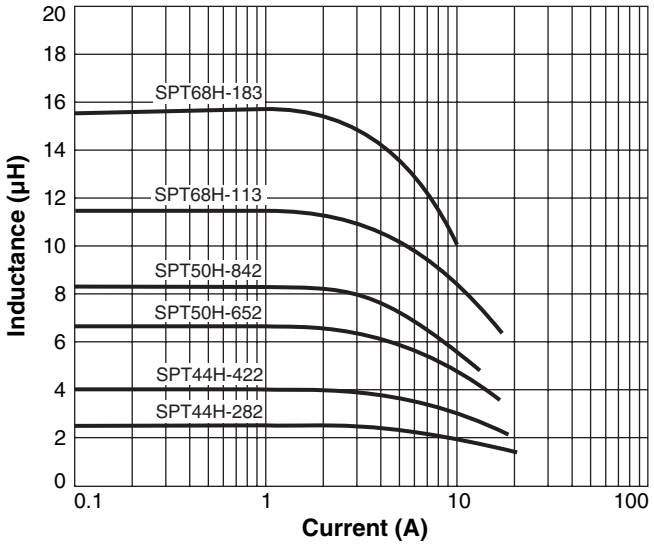
Size	A max	B max	C max	D[1]	E[2]	F[2]	G	Weight (g)
1	0.34/*8,64*	0.34/*8,64*	0.28/*7,00*	0.26/*6,60*	0.30/*7,62*	0.27/*6,86*	0.06/*1,52*	0.47–0.54
2	0.44/*11,05*	0.44/*11,18*	0.37/*9,50*	0.35/*8,89*	0.40/*10,16*	0.36/*9,14*	0.06/*1,52*	1.42–1.59
3	0.56/*14,22*	0.56/*14,35*	0.37/*9,50*	0.45/*11,43*	0.52/*13,21*	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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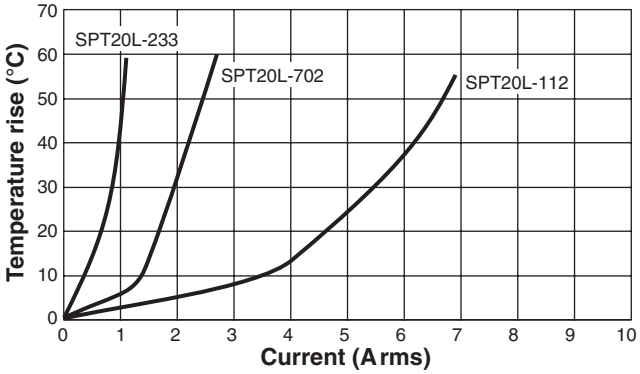
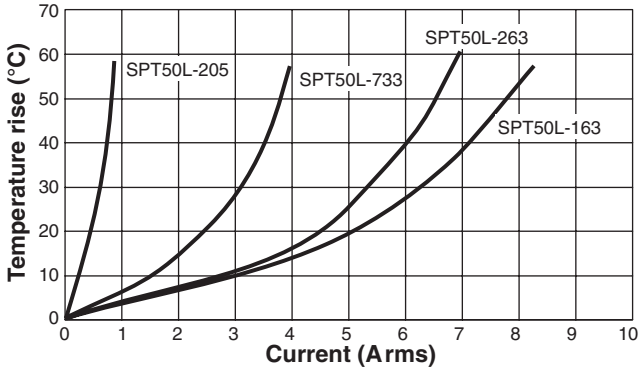
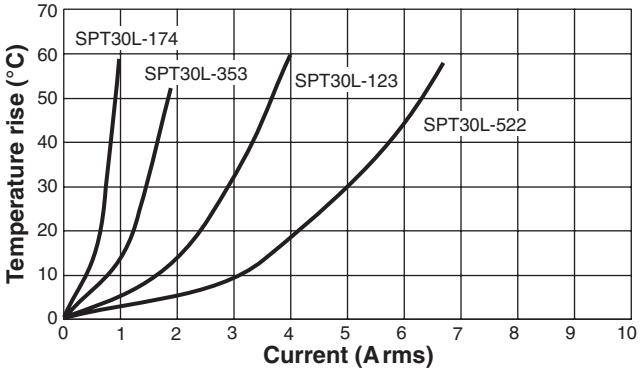
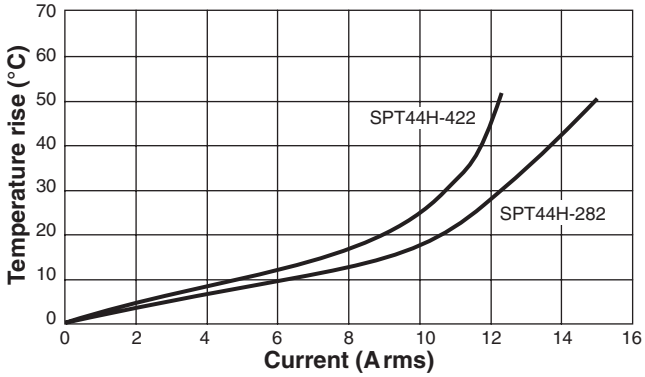
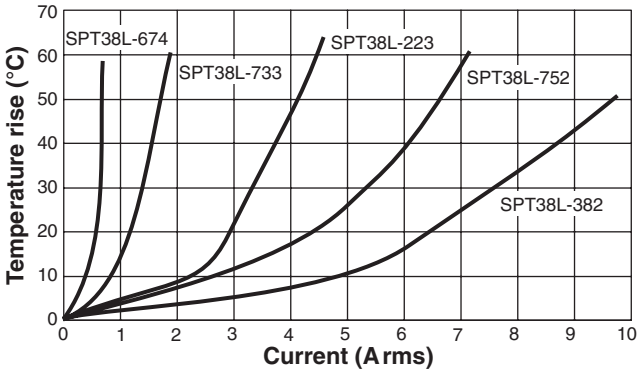
Typical Temperature Rise vs Current*

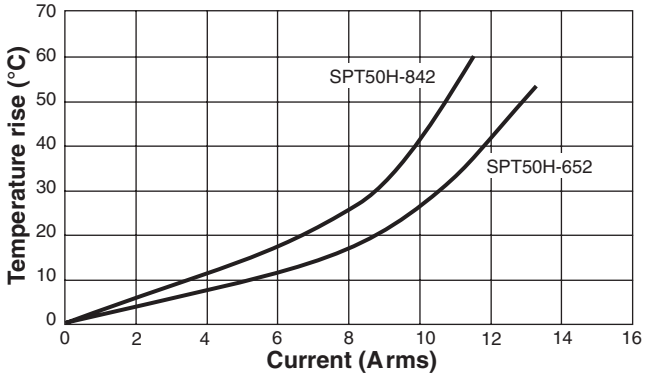


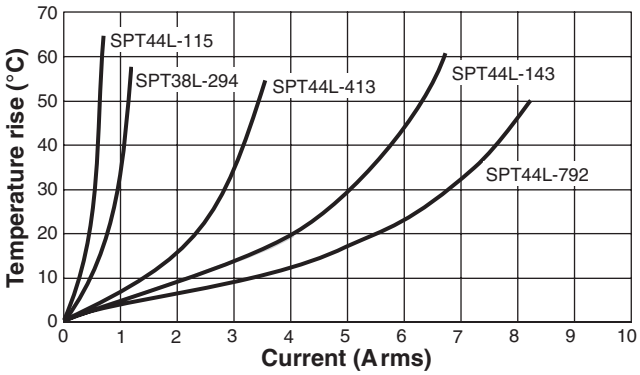


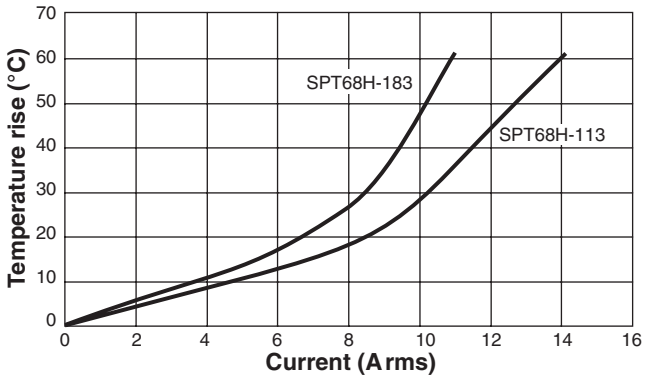












* Measured at 25°C ambient.

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