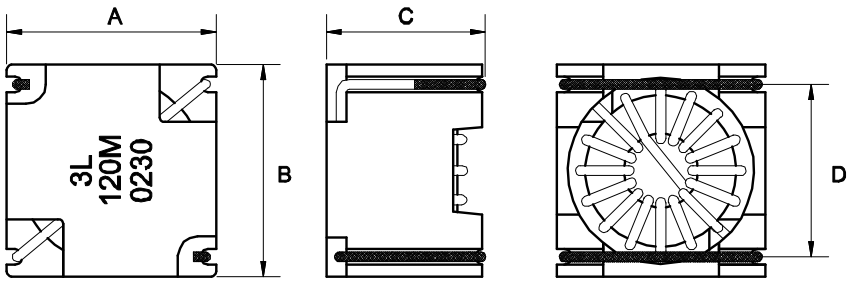
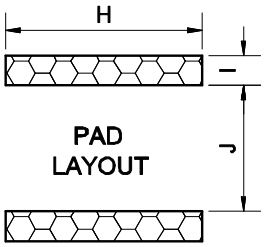
SMT TOROIDS POWER CHOKES

SMTTC 30/38/44/50 TYPE

Shape and size : (Dimensions are in mm)





ITEM	A max	B max	C max	D	H	I	J
SMTTC30	11.05	11.18	9.50	8.89	10.16	1.52	9.14
SMTTC38	14.22	14.35	9.50	11.43	13.21	1.52	11.68
SMTTC44	14.99	15.62	10.50	12.70	13.97	1.52	12.95
SMTTC50	17.02	17.78	10.50	14.73	15.75	1.52	14.99

Features :

- High current with closed magnetic path eliminate stray electromagnetic emissions.
- Self-leaded design ensure rugged reliability.
- Ideal inductors for DC-DC conversion.
- Base material meets flammability requirements of . UL 94-V0.
- In addition to the standard values shown, 3L can custom engineer parts for specific applications.

Ordering information :

SMT TC30 - 18 - 120 M

(1) (2) (3) (4) (5)

(1) Type : **S**urface **M**ountable **T**ype.

(2) Style : **0.3** Inch size Toroids.

(3)Materials: Refer to the next page.

(4)Inductance : Example : **120** for **12.0** uH.

(5)Inductance tolerance : **M :** ± 20%

Inductance and rated current ranges :

· SMTTC30	1.8~390uH	5.5 ~0.60A
· SMTTC38	1.5~470uH	8.0 ~0.74A
· SMTTC44	5.6~2200uH	7.8 ~0.38A
· SMTTC50	10 ~4700uH	7.2 ~0.31A

· Test equipment :

L : Agilent 4284A LCR meter @ 100kHz 0.1Vrms.

DCR : Milli-ohm meter.

SRF : Agilent 4191A RF Impedance analyzer.

· Electrical specifications at 25℃.

Characteristics :

- I sat: The current when the inductance becomes 30% lower than its initial value. (Ta=20℃)
- I rms: The current when temperature of coil increases up to Max. △T=40℃. (Ta=20℃)
- Operating temperature : -20℃ to 85℃.

Applications :

- Power supply for VTRs .
- LCD televisions .
- Personable computers or notebook PCs .
- DC/DC converters,etc.
- Other various electronic appliances.

General Material Properties

Material Mix No.	Reference Permeability (μo)	Material Density(g/cm3)	Temp. Coef. of Permeability ppm/℃	Relative Cost	Color Code
-2	10	5.0	95	2.7	Red/Clear
-8	35	6.5	255	5.0	Yellow/Red
-14	14	5.2	150	3.6	Black/Red
-18	55	6.6	385	3.4	Green/Red
-26	75	7.0	825	1.0	Yellow/White
-30 *	22	6.0	510	1.4	Green/Gray
-33	33	6.3	565	1.6	Gray/Yellow
-38	85	7.1	956	1.1	Gray/Black
-40	60	6.9	950	1.0	Green/Yellow
-52	75	7.0	650	1.2	Green/Blue
M125 ****	125	---	85	---	Gray
H125 ****	125	---	255	---	Gray

Note: -**2** ~ -**52** are Iron Powder cores, **M125 / H125** are alloy cores.

* The **-30** Material was developed as a low cost, lower loss alternate to the **-28** material.

** **M125** : MPP (Ni-Fe-Mo alloy) besides **μo**=125, there are **μo**=26 / 60 / 75 / 147 / 160 / 200.

** **H125** : High Flux (Ni-Fe alloy) besides **μo**=125, there are **μo**=26 / 60 / 75 / 90 / 160.

CORE LOSS COMPARISON (mW/cm^3) **PERMEABILITY WITH DC BIAS**

Material	60 Hz	1KHz	10KHz	50KHz	100KHz	500KHz	H_{DC} = 50 Oersteds	
Mix No.	@5000G	@1500G	@500G	@225G	@140G	@50G	% μ0	μeffective
-2	19	32	32	28	19	12	100%	10.0
-8	45	64	59	50	35	28	91%	31.9
-14	19	32	32	29	21	17	100%	14.0
-18	48	72	70	63	46	37	74%	40.7
-26	32	60	75	89	83	139	51%	38.3
-30	37	80	120	149	129	129	91%	20.0
-33	90	90	105	160	145	155	84%	27.7
-38	31	57	72	99	103	217	51%	43.4
-40	29	62	93	130	127	223	62%	37.2
-52	30	56	68	72	58	63	59%	44.3
M125	15	5	6	10	7	10	52%	65.0
H125	18	25	20	32	35	30	67%	83.8

MATERIAL APPLICATIONS

Typical Application	-2	-8	-14	-18	-26	-30	-34	-38	-40	-52	M125	H125
Light Dimmer Chokes					X			X	X			
60 Hz Differential-mode EMI Line Chokes					X			X	X	X		
DC Chokes:< 50kHz or lower Et/N (Buck/Boost)					X	X	X	X	X			
DC Chokes:≧50kHz or higher Et/N(Buck/Boost)		X	X	X		X	X			X	X	X
Power Factor Correction Chokes: < 50kHz						X	X		X			
Power Factor Correction Chokes: ≧50kHz	X	X	X	X	X	X	X				X	X
Resonant Inductors : ≧50kHz	X		X									

SMT TOROIDS POWER CHOKES

SMTTC 30/38 TYPE

Part No.	L (uH) ±20%	DCR (mΩ) Max.	SRF (MHz) Typ.	I sat (A) Typ.	I rms (A) Max.
SMTTC30 - 8/90 - 1R8M	1.8	12.0	140	12	5.5
SMTTC30 - 8/90 - 3R3M	3.3	19.9	110	10	4.8
SMTTC30 - 8/90 - 6R8M	6.8	47.2	55	6.5	2.8
SMTTC30 - 8/90 - 220M	22	166	15	3.5	1.4
SMTTC30 - 8/90 - 101M	**100**	**640**	**5.0**	**1.6**	**0.94**
SMTTC30 - 18 - 2R7M	2.7	12.0	125	7.4	5.5
SMTTC30 - 18 - 5R2M	5.2	19.9	102	5.4	4.8
SMTTC30 - 18 - 120M	12	47.2	52	3.5	2.8
SMTTC30 - 18 - 350M	35	166	12	2.0	1.4
SMTTC30 - 18 - 171M	170	640	4.0	0.95	0.94
SMTTC30 - 52 - 3R6M	3.6	12.0	150	5.0	5.5
SMTTC30 - 52 - 6R8M	6.8	19.9	110	3.7	4.8
SMTTC30 - 52 - 150M	15	47.2	45	2.5	2.8
SMTTC30 - 52 - 470M	47	166	14	1.4	1.4
SMTTC30 - 52 - 221M	220	640	4.2	0.64	0.94
SMTTC30 - M125 - 6R0M	6.0	12.0	95	4.6	5.5
SMTTC30 - M125 – 120M	12	19.9	75	3.4	4.8
SMTTC30 - M125 – 220M	22	47.2	50	2.4	2.8
SMTTC30 - M125 – 820M	82	166	10	1.3	1.4
SMTTC30 - M125 – 391M	390	640	3	0.60	0.94
SMTTC38 - 8/90 - 1R5M	1.5	9.3	133	18	8.0
SMTTC38 - 8/90 - 3R3M	3.3	18.7	73	12	5.4
SMTTC38 - 8/90 - 8R2M	8.2	63	24	7.5	2.7
SMTTC38 - 8/90 - 270M	27	290	12	4.0	1.3
SMTTC38 - 8/90 - 101M	**100**	**657**	**4.0**	**2.1**	**0.90**
SMTTC38 - 18 - 3R8M	3.8	9.3	133	8.8	8.0
SMTTC38 - 18 - 7R5M	7.5	18.7	73	5.8	5.4
SMTTC38 - 18 - 220M	22	63	34	3.5	2.7
SMTTC38 - 18 - 730M	73	290	5.0	2.0	1.3
SMTTC38 - 18 - 291M	290	657	2.0	0.98	0.90
SMTTC38 - 52 - 4R7M	4.7	9.3	133	6.5	8.0
SMTTC38 - 52 - 100M	**10**	**18.7**	**62**	**4.4**	**5.4**
SMTTC38 - 52 - 330M	33	63	25	2.4	2.7
SMTTC38 - 52 - 101M	**100**	**290**	**5.0**	**1.4**	**1.3**
SMTTC38 - 52 - 391M	390	657	1.8	0.71	0.90
SMTTC38 - M125 - 6R8M	6.8	9.3	133	6.2	8.0
SMTTC38 - M125 – 150M	15	18.7	58	4.2	5.4
SMTTC38 - M125 – 390M	39	63	18	2.6	2.7
SMTTC38 - M126 – 121M	120	290	4.0	1.6	1.3
SMTTC38 - M127 – 471M	470	657	1.2	0.74	0.90

SMT TOROIDS POWER CHOKES

SMTTC 44/50 TYPE

Part No.	L (uH) ±20%	DCR (mΩ) Max.	SRF (MHz) Typ.	I sat (A) Typ.	I rms (A) Max.
SMTTC44 - 8/90 - 5R6M	5.6	16.2	65	11.0	7.8
SMTTC44 - 8/90 - 100M	**10.0**	**23.6**	**40**	**9.0**	**5.5**
SMTTC44 - 8/90 - 150M	15.0	39.0	25	7.4	4.0
SMTTC44 - 8/90 - 270M	27.0	85.0	12	5.4	2.7
SMTTC44 - 8/90 - 681M	680	1908	1.4	1.0	0.70
SMTTC44 - 18 – 7R9M	7.9	16.2	49	6.6	7.8
SMTTC44 - 18 - 140M	14.0	23.6	33	5.2	5.5
SMTTC44 - 18 - 220M	22.0	39.0	23	4.1	4.0
SMTTC44 - 18 - 410M	41.0	85.0	9.5	3.0	2.7
SMTTC44 - 18 - 112M	1100	1908	1.2	0.58	0.70
SMTTC44 - 52 - 120M	12	16.2	62	4.5	7.8
SMTTC44 - 52 - 180M	18	23.6	35	3.5	5.5
SMTTC44 - 52 - 270M	27	39.0	26	2.8	4.0
SMTTC44 - 52 - 560M	56	85.0	9.0	2.0	2.7
SMTTC44 - 52 - 152M	1500	1908	0.85	0.39	0.70
SMTTC44 - M125 - 180M	18	16.2	49	4.3	7.8
SMTTC44 - M125 - 270M	27	23.6	33	3.4	5.5
SMTTC44 - M125 - 470M	47	39.0	23	2.6	4.0
SMTTC44 - M125 - 101M	**100**	**85.0**	**7.5**	**1.8**	**2.7**
SMTTC44 - M125 - 222M	2200	1908	0.60	0.38	0.70
SMTTC50 - 8/90 - 100M	**10**	**19.7**	**35**	**9.0**	**7.2**
SMTTC50 - 8/90 - 150M	15	32	27	7.5	5.1
SMTTC50 - 8/90 - 470M	47	133	7.0	4.3	2.6
SMTTC50 - 8/90 - 101M	**100**	**220**	**3.8**	**2.9**	**2.0**
SMTTC50 - 8/90 - 152M	1500	1932	0.72	0.76	0.71
SMTTC50 - 18 - 160M	16	19.7	24	5.4	7.2
SMTTC50 - 18 - 260M	26	32	11	4.3	5.1
SMTTC50 - 18 - 730M	73	133	4.5	2.5	2.6
SMTTC50 - 18 - 151M	150	220	2.6	1.8	2.0
SMTTC50 - 18 - 202M	2000	1932	0.60	0.50	0.71
SMTTC50 - 52 - 180M	18	19.7	35	4.4	7.2
SMTTC50 - 52 - 270M	27	32	27	3.6	5.1
SMTTC50 - 52 - 101M	**100**	**133**	**5.2**	**1.9**	**2.6**
SMTTC50 - 52 - 221M	220	220	2.2	1.3	2.0
SMTTC50 - 52 - 272M	2700	1932	0.50	0.37	0.71
SMTTC50 - M125 - 330M	33	19.7	19	3.5	7.2
SMTTC50 - M125 - 470M	47	32	16	2.8	5.1
SMTTC50 - M125 - 151M	150	133	3.6	1.6	2.6
SMTTC50 - M125 - 331M	330	220	2.0	1.2	2.0
SMTTC50 - M125 - 472M	4700	1932	0.45	0.31	0.71