

# Surface Mount Power Toroidal Inductor

The Surface Mount Power Toroidal Inductors manufactured by Engineered Components Company are designed using stable powdered iron core material. The toroidal core inductor design provides a low external magnetic field and a high core saturation currents.

The standard inductance value tolerance is +/-10% when measured at 1 KHz, ( $I_{bc}=0$ ). Inductance values and Q values are measured on an HP 4284A LCR meter. Since inductance values vary with AC/DC current values, each end application should be evaluated to ensure proper readings. The tabulated current ratings (Rated  $I_{bc}$ ) are those calculated to cause a 40 deg. C rise in case temperature. These inductors are designed to meet the applicable portions of MIL-C-15305, Grade 1, Class B. The operating temperature range is -55 to +125 deg. C. and the inductors are capable of withstanding 500Vdc @ 50 uA applied between the coil and the case.

The inductor and the four phosphor-bronze leads (lead-tin plated) are mounted on a Liquid Crystal Polymer platform, off-white in color, and secured in epoxy resin by utilizing a black Diallyl Phthalate case. Marking, applied by Laser Label, designates one coil termination lead with an indicator dot (see Figure 1). The opposite lead is also a coil termination lead, while the leads at 90 deg. locations are no-connection mounting leads.

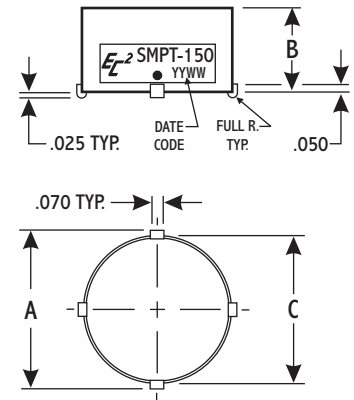


Figure 1

Product Selection Table

$I_{bc}$  (amps) readings for % drops

PART NUMBER	L(uH)	A	B	C	DCR(ohms)	RATED $I_{bc}$ (amps)	10% DROP IN L	20% DROP IN L	30% DROP IN L
SMPT-1.8	1.8	0.315	0.270	0.290	0.02	1.9	0.84	1.39	1.94
SMPT-2.2	2.2	0.315	0.270	0.290	0.02	1.8	0.76	1.26	1.75
SMPT-2.7	2.7	0.415	0.320	0.390	0.03	2.4	1.43	2.39	3.32
SMPT-3.3	3.3	0.415	0.320	0.390	0.03	2.3	1.30	2.16	3.00
SMPT-3.9	3.9	0.415	0.320	0.390	0.03	2.2	1.19	1.99	2.76
SMPT-4.7	4.7	0.415	0.320	0.390	0.04	2.1	1.09	1.81	2.52
SMPT-5.6	5.6	0.415	0.320	0.390	0.04	2.0	0.99	1.66	2.31
SMPT-6.8	6.8	0.415	0.320	0.390	0.04	1.9	0.90	1.50	2.09
SMPT-8.2	8.2	0.415	0.320	0.390	0.05	1.8	0.82	1.37	1.91
SMPT-10	10.0	0.415	0.320	0.390	0.05	1.7	0.74	1.24	1.73
SMPT-12	12.0	0.470	0.340	0.445	0.06	2.0	0.97	1.62	2.26
SMPT-15	15.0	0.470	0.340	0.445	0.07	1.9	0.87	1.45	2.02
SMPT-18	18.0	0.470	0.340	0.445	0.07	1.8	0.80	1.33	1.84
SMPT-22	22.0	0.570	0.390	0.545	0.06	2.3	0.83	1.39	1.93
SMPT-27	27.0	0.570	0.390	0.545	0.06	2.2	0.75	1.25	1.74
SMPT-33	33.0	0.620	0.425	0.595	0.08	2.4	0.90	1.50	2.09
SMPT-39	39.0	0.620	0.425	0.595	0.08	2.3	0.83	1.38	1.92
SMPT-47	47.0	0.620	0.425	0.595	0.09	2.2	0.75	1.26	1.75
SMPT-56	56.0	0.670	0.425	0.645	0.11	2.3	0.78	1.29	1.80
SMPT-68	68.0	0.670	0.425	0.645	0.12	2.1	0.70	1.17	1.63
SMPT-82	82.0	0.670	0.425	0.645	0.14	2.0	0.64	1.07	1.49
SMPT-100	100.0	0.670	0.425	0.645	0.15	1.9	0.58	0.97	1.35
SMPT-120	120.0	0.820	0.485	0.795	0.17	2.2	0.77	1.28	1.77
SMPT-150	150.0	0.820	0.485	0.795	0.19	2.1	0.68	1.14	1.59
SMPT-180	180.0	0.820	0.485	0.795	0.20	2.0	0.63	1.04	1.45
SMPT-220	220.0	1.070	0.530	1.045	0.17	2.8	0.75	1.24	1.73
SMPT-270	270.0	1.070	0.530	1.045	0.18	2.7	0.67	1.12	1.56
SMPT-330	330.0	1.070	0.530	1.045	0.20	2.5	0.61	1.01	1.41
SMPT-390	390.0	1.188	0.670	1.163	0.15	3.6	0.78	1.29	1.80
SMPT-470	470.0	1.188	0.670	1.163	0.16	3.4	0.71	1.18	1.64
SMPT-560	560.0	1.370	0.740	1.345	0.19	3.7	0.84	1.40	1.94
SMPT-680	680.0	1.370	0.740	1.345	0.21	3.5	0.76	1.27	1.76
SMPT-820	820.0	1.688	0.805	1.663	0.16	4.7	0.83	1.38	1.91
SMPT-1000	1000.0	1.688	0.805	1.663	0.18	4.4	0.75	1.25	1.73
SMPT-1200	1200.0	1.875	0.835	1.850	0.20	4.7	0.84	1.40	1.95
SMPT-1500	1500.0	1.875	0.835	1.850	0.22	4.5	0.75	1.25	1.74
SMPT-1800	1800.0	1.875	0.835	1.850	0.25	4.3	0.69	1.14	1.59

Special modules can often be manufactured to provide for customer specific applications.



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