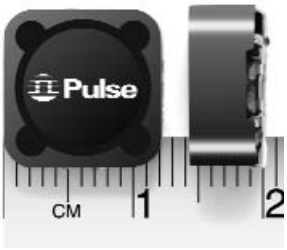
SMT POWER INDUCTORS
Shielded Drum Core - P1171 Series



- Low profile and suitable for compact surface area mounting
- Large permissible DC current
- Low DC resistance

Electrical Specifications @ 25°C — Operating Temperature -40°C to +85°C

Part Number	Inductance @Irated (µH) MIN	Irated [1] (ADC)	DCR (mΩ) TYP	DCR (mΩ) MAX	Inductance @0ADC (µH)	Saturation [2] Current @25°C (A)	Heating [3] Current (A)	Core Loss [4] Factor K
P1171.901T	0.6	13	2.0	2.9	0.9±30%	14	13	136.3
P1171.142T	0.9	11	3.0	4.2	1.4±30%	13	11	165.0
P1171.222T	1.5	9.6	4.0	5.7	2.2±30%	9.7	9.6	212.1
P1171.302T	2.0	8.3	5.4	7.7	3.0±30%	8.3	8.3	244.7
P1171.392T	2.5	7.0	7.4	10	3.9±30%	7.0	7.1	275.7
P1171.502T	3.3	6.4	8.5	12	5.0±30%	6.4	6.6	311.9
P1171.642T	4.2	5.3	13	18	6.4±30%	5.8	5.3	357.2
P1171.103T	7.5	4.4	19	25	10±20%	4.6	4.4	424.2
P1171.123T	9.0	4.2	21	27	12±20%	4.3	4.2	471.3
P1171.153T	11.3	4.0	22	30	15±20%	4.0	4.1	548.5
P1171.183T	13.5	3.4	32	40	18±20%	3.4	3.4	578.4
P1171.223T	16.5	3.0	36	45	22±20%	3.0	3.2	666.6
P1171.273T	20.3	2.7	41	51	27±20%	2.7	3.0	734.2
P1171.333T	24.8	2.6	56	70	33±20%	2.6	2.6	813.8
P1171.393T	29.3	2.4	60	75	39±20%	2.4	2.5	879.9
P1171.473T	35.3	2.2	79	100	47±20%	2.2	2.2	977.3
P1171.563T	42.0	2.0	85	110	56±20%	2.0	2.1	1041.8
P1171.683T	51.0	1.8	97	120	68±20%	1.8	1.9	1144.6
P1171.823T	61.5	1.7	127	158	82±20%	1.7	1.7	1260.2
P1171.104T	75.0	1.4	182	230	100±20%	1.4	1.4	1413.9
P1171.124T	90.0	1.3	201	253	120±20%	1.3	1.4	1533.2
P1171.154T	113	1.2	225	280	150±20%	1.2	1.3	1710.4
P1171.184T	135	1.1	249	310	180±20%	1.1	1.2	1889.9
P1171.224T	165	1.0	319	400	220±20%	1.0	1.1	2101.8
P1171.274T	203	0.91	363	460	270±20%	0.91	1.0	2327.8
P1171.334T	248	0.82	424	530	330±20%	0.82	0.93	2554.4
P1171.394T	293	0.72	561	690	390±20%	0.72	0.81	2775.7
P1171.474T	353	0.68	629	770	470±20%	0.68	0.77	3057.7
P1171.564T	420	0.63	851	1060	560±20%	0.63	0.66	3317.6
P1171.684T	510	0.57	950	1200	680±20%	0.57	0.62	3660.4
P1171.824T	615	0.52	1241	1550	820±20%	0.52	0.54	4007.2
P1171.105T	750	0.46	1398	1750	1000±20%	0.46	0.51	4437.0

Notes from Table

1. The rated current as listed is either the saturation current or the heating current depending on which value is lower.
2. The saturation current is the current which causes the inductance to drop to 65% (or 75%) of its nominal inductance at zero bias. This current is determined by placing the component at room ambient (25°C), and applying a short duration pulse current (to eliminate self-heating effects) to the component.
3. The heating current is the dc current, which causes the temperature of the part to increase by not more than 40°C. This current is determined by extending the terminals of the component with 30mm length 28 gauge buss wires and applying the current to the device for 30 minutes. The temperature is measured by placing the thermocouple between the winding and the shield.
4. In high volt*time applications, additional heating in the component can occur due to core losses in the inductor which may necessitate derating the current in order to limit the temperature rise of the component. In order to determine the approximate total loss (or temperature rise) for a given application, both copper losses and core losses should be taken into account.

Estimated Temperature Rise:

Trise = [Total loss (mW) / 5.376]$^{.833}$ (°C)

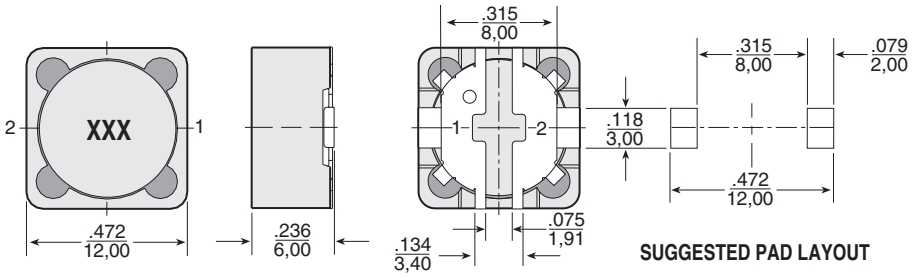
Total loss = Copper loss + Core loss (mW)

Copper loss = Irms^2 x DCR (Typical) (mW)

Irms = [IDC^2 + ΔI^2/12]$^{1/2}$ (A)

Core loss = 2.92 x 10^{-7} x f (kHz)$^{1.1}$ x (K x ΔI)$^{2.15}$ (mW), where f varies between 25 kHz and 300 kHz, and B less than 2000 Gauss.

Mechanical



Dimensions: Inches / mm

Unless otherwise specified, all tolerances are ± .010 / 0,25

Weight . . . . . 3.2 grams
Tape & Reel. 500/reel

Schematic