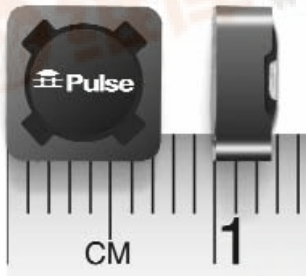


SMT POWER INDUCTORS

Shielded Drum Core - P1166 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 (A)dc	DCR (mΩ)		Inductance @ 0A _{dc} (μH)	Saturation Current ² @ 25°C (A)	Heating Current ³ (A)	Core Loss ⁴ Factor K
			TYP	MAX				
P1166.681T	0.44	5.5	5.0	6.0	0.68±30%	5.9	5.5	380.2
P1166.102T	0.65	4.9	6.2	7.5	1.0±30%	5.2	4.9	434.9
P1166.162T	1.0	4.0	7.8	11	1.6±30%	4.0	4.4	569.3
P1166.302T	2.0	2.8	19	23	3.0±30%	3.0	2.8	782.8
P1166.482T	3.1	2.4	25	31	4.8±30%	2.4	2.5	988.8
P1166.682T	4.4	2.1	32	40	6.8±30%	2.1	2.2	1157.2
P1166.103T	7.5	1.6	58	70	10±20%	1.8	1.6	1349.6
P1166.123T	9.0	1.5	62	78	12±20%	1.7	1.5	1515.1
P1166.153T	11.3	1.4	74	92	15±20%	1.5	1.4	1677.4
P1166.183T	13.5	1.2	100	124	18±20%	1.4	1.2	1806.4
P1166.223T	16.5	1.2	106	126	22±20%	1.2	1.2	2100.1
P1166.273T	20.3	1.0	146	180	27±20%	1.1	1.0	2248.4
P1166.333T	24.8	0.94	167	205	33±20%	1.0	0.94	2437.0
P1166.393T	29.3	0.86	183	211	39±20%	0.86	0.90	2677.9
P1166.473T	35.3	0.83	206	260	47±20%	0.83	0.85	2919.9
P1166.563T	42.0	0.73	271	340	56±20%	0.73	0.74	3271.3
P1166.683T	51.0	0.67	303	370	68±20%	0.67	0.70	3645.8
P1166.823T	61.5	0.60	411	500	82±20%	0.61	0.60	3962.2
P1166.104T	75.0	0.56	464	580	100±20%	0.56	0.57	4301.0
P1166.124T	90.0	0.53	528	645	120±20%	0.55	0.53	4650.2
P1166.154T	113	0.46	695	860	150±20%	0.46	0.46	4995.1
P1166.184T	135	0.39	992	1190	180±20%	0.42	0.39	5822.3
P1166.224T	165	0.35	1210	1480	220±20%	0.37	0.35	6095.8
P1166.274T	203	0.32	1407	1750	270±20%	0.32	0.33	7092.3
P1166.334T	248	0.31	1580	1880	330±20%	0.31	0.31	7923.8
P1166.394T	293	0.26	2178	2600	390±20%	0.29	0.26	8623.8
P1166.474T	353	0.25	2400	2910	470±20%	0.26	0.25	9433.5
P1166.564T	420	0.23	2705	3400	560±20%	0.23	0.23	10194
P1166.684T	510	0.20	3658	4450	680±20%	0.21	0.20	11423
P1166.824T	615	0.17	5021	6200	820±20%	0.20	0.17	12586
P1166.105T	750	0.15	6720	8000	1000±20%	0.16	0.15	13928

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:

$$\text{Trise} = [\text{Total loss (mW)} / 1.883]^{.833} (^\circ\text{C})$$

Total loss = Copper loss + Core loss (mW)

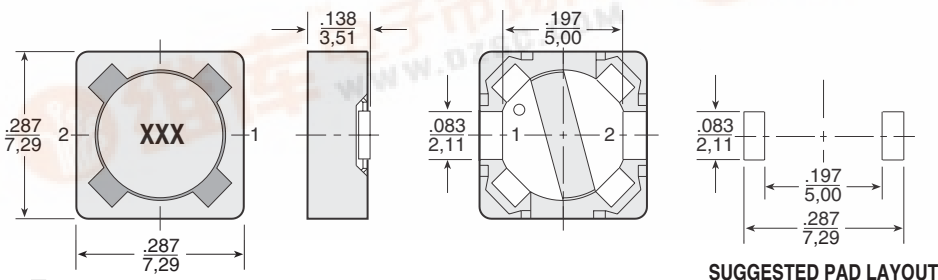
Copper loss = $I_{\text{rms}}^2 \times \text{DCR (Typical)}$ (mW)

$$I_{\text{rms}} = [I_{\text{dc}}^2 + \Delta I^2 / 12]^{1/2} (\text{A})$$

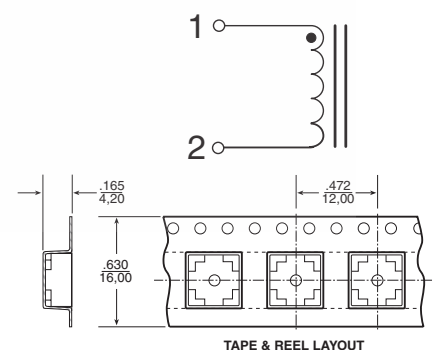
Core loss = $4.26 \times 10^{-8} \times f (\text{kHz})^{1.1} \times (K \times \Delta I)^{2.15} (\text{mW})$, where f varies between 25 kHz and 300 kHz, and B less than 2000 Gauss.

Mechanical

Schematic



Weight 0.7 grams
Tape & Reel 1200/reel



TAPE & REEL LAYOUT