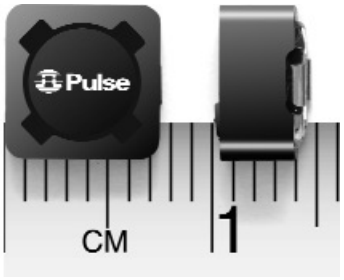
SMT POWER INDUCTORS
Shielded Drum Core - P1167 Series

Pulse
A TECHNITROL COMPANY



- 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
P1167.272T	1.8	3.5	13	16	2.7±30%	3.5	3.6	584.4
P1167.362T	2.3	3.1	15	20	3.6±30%	3.1	3.4	687.5
P1167.452T	2.9	2.6	25	30	4.5±30%	2.9	2.6	769.0
P1167.542T	3.5	2.5	27	33	5.4±30%	2.7	2.5	834.9
P1167.632T	4.1	2.4	30	35	6.3±30%	2.5	2.4	889.3
P1167.103T	7.5	2.0	42	50	10±20%	2.1	2.0	1047.3
P1167.123T	9.0	1.9	46	57	12±20%	1.9	1.9	1180.6
P1167.153T	11.3	1.7	53	66	15±20%	1.7	1.8	1316.3
P1167.183T	13.5	1.5	59	73	18±20%	1.5	1.7	1425.4
P1167.223T	16.5	1.4	87	105	22±20%	1.4	1.4	1661.1
P1167.273T	20.3	1.2	100	130	27±20%	1.2	1.3	1789.0
P1167.333T	24.8	1.1	139	170	33±20%	1.1	1.1	2021.6
P1167.393T	29.3	1.0	156	200	39±20%	1.0	1.0	2146.2
P1167.473T	35.3	0.94	173	220	47±20%	0.94	1.0	2347.6
P1167.563T	42.0	0.86	225	270	56±20%	0.86	0.86	2560.8
P1167.683T	51.0	0.78	251	310	68±20%	0.78	0.81	2867.3
P1167.823T	61.5	0.70	282	350	82±20%	0.70	0.77	3132.2
P1167.104T	75.0	0.63	317	390	100±20%	0.63	0.72	3491.1
P1167.124T	90.0	0.57	418	530	120±20%	0.57	0.63	3857.5
P1167.154T	113	0.52	497	610	150±20%	0.52	0.58	4234.9
P1167.184T	135	0.47	635	820	180±20%	0.47	0.51	4751.3
P1167.224T	165	0.43	745	930	220±20%	0.43	0.47	5138.7
P1167.274T	203	0.39	840	1040	270±20%	0.39	0.44	5655.6
P1167.334T	248	0.35	1162	1470	330±20%	0.35	0.38	6193.2
P1167.394T	293	0.32	1237	1570	390±20%	0.32	0.37	6844.5
P1167.474T	353	0.29	1688	2180	470±20%	0.29	0.31	7517.1
P1167.564T	420	0.26	2240	2960	560±20%	0.26	0.27	8227.1
P1167.684T	510	0.23	2402	3180	680±20%	0.23	0.26	9237.6
P1167.824T	615	0.21	2702	3500	820±20%	0.21	0.25	10123
P1167.105T	750	0.19	3703	4930	1000±20%	0.19	0.21	11157

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 = $[\text{Total loss (mW)} / 2.146]^{.833}$ (°C)

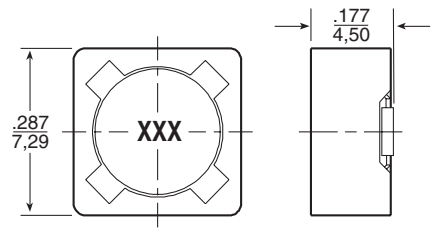
Total loss = Copper loss + Core loss (mW)

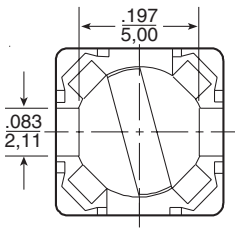
Copper loss = Irms^2 x DCR (Typical) (mW)

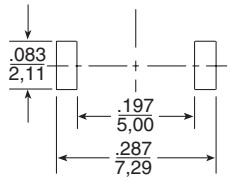
Irms = $[I_{DC}^2 + \Delta I^2/12]^{1/2}$ (A)

Core loss = $6.79 \times 10^{-8} \times f\,(\text{kHz})^{1.1} \times (K \times \Delta I)^{2.15}$ (mW), where f varies between 25 kHz and 300 kHZ, and B less than 2000 Gauss.

Mechanical







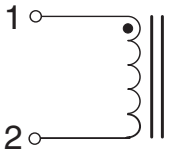
SUGGESTED PAD LAYOUT

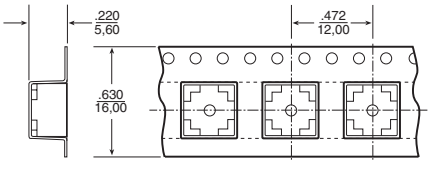
Dimensions: Inches / mm

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

Weight . . . . . 0.9 grams
Tape & Reel. 900/reel

Schematic





TAPE & REEL LAYOUT