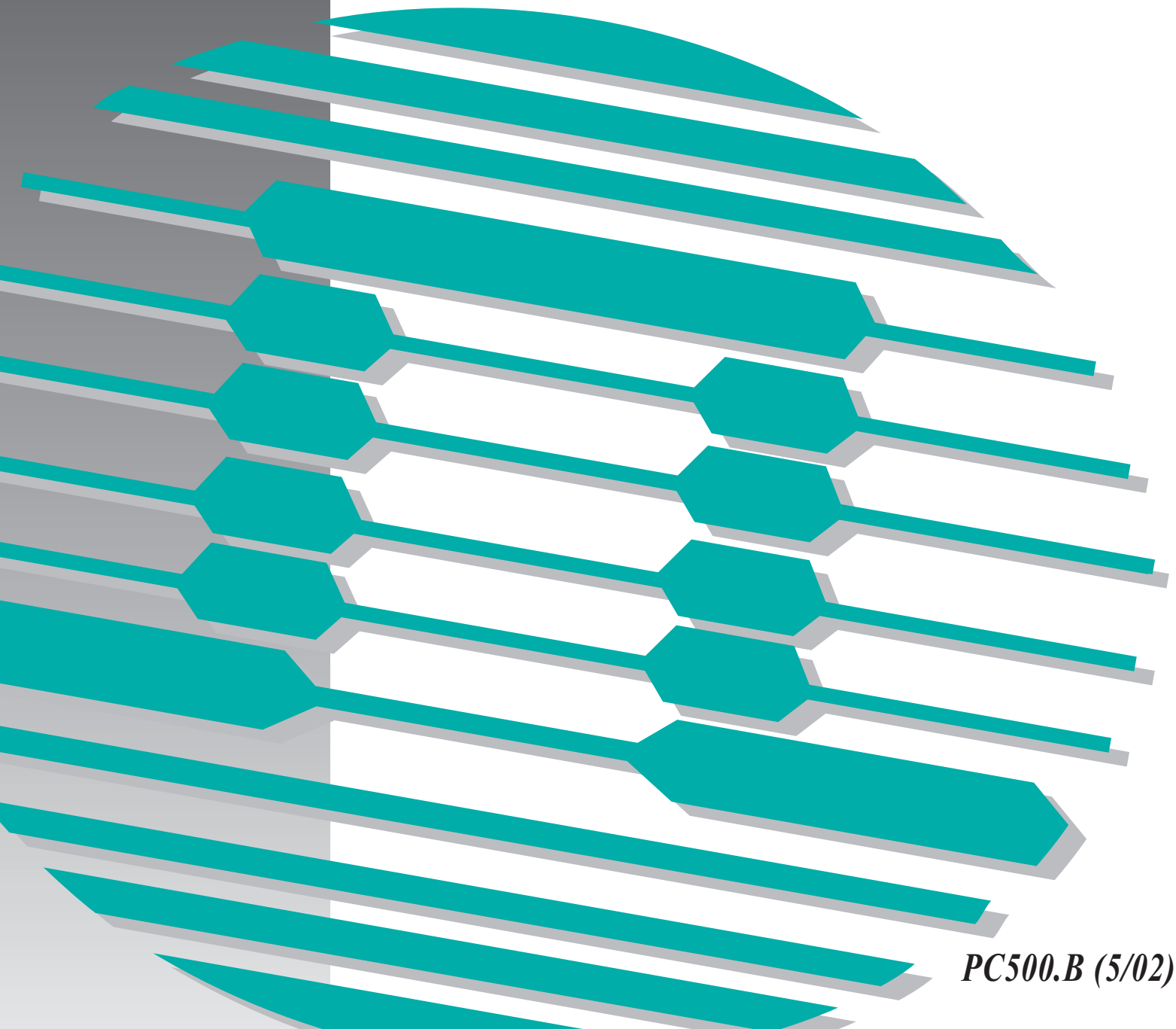
Pulse
A TECHNITROL COMPANY

Power Magnetics



PC500.B (5/02)

US 858 674 8100 • UK 44 1483 401 700 • France 33 3 84 35 04 04 • Singapore 65 287 8998 • Taiwan 886 2 2698 0228 • Hong Kong 852 2788 6588 • http://www.pulseeng.com

PC500.B (5/02)

POWER MAGNETICS

Pulse
A TECHNITROL COMPANY

TABLE of CONTENTS

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SMT POWER INDUCTORS
P0770 Series

Pulse
A TECHNITROL COMPANY

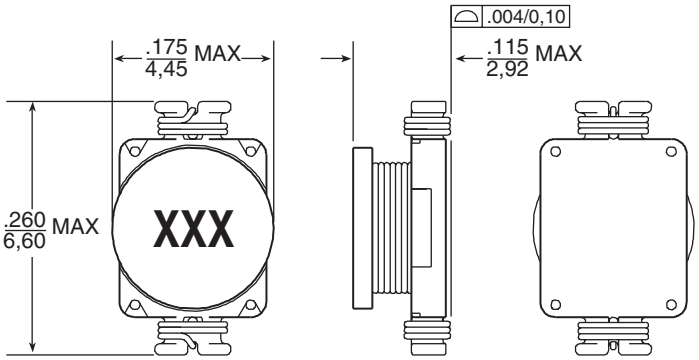
- Reliable self-leads
- High energy storage and low DC resistance
- Ideal for DC/DC conversion in notebook computers, PDA's, step-up or step-down converters

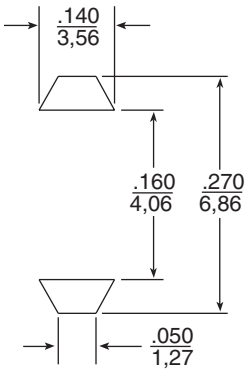
Electrical Specifications @ 25°C — Operating Temperature -40°C to +85°C

Part Number	Inductance @ I_{PK} A_{DC} (µH ± 20%)	DCR (MAX) (mΩ)	I_{PK} (A)	I_{RMS} (A)	Part Marking
P0770.102T	1.0	50	2.90	2.90	102
P0770.152T	1.5	50	2.60	2.80	152
P0770.222T	2.2	70	2.30	2.40	222
P0770.332T	3.3	80	2.00	2.00	332
P0770.472T	4.7	90	1.50	1.50	472
P0770.682T	6.8	130	1.20	1.40	682
P0770.103T	10	160	1.10	1.10	103
P0770.153T	15	230	0.90	1.20	153
P0770.223T	22	370	0.70	0.80	223
P0770.333T	33	510	0.58	0.60	333
P0770.473T	47	640	0.50	0.50	473
P0770.683T	68	860	0.40	0.40	683
P0770.104T	100	1270	0.31	0.30	104
P0770.154T	150	2000	0.27	0.25	154
P0770.224T	220	2650	0.22	0.20	224

NOTES:
1. Inductance tested at 100 kHz, 10 mV_{RMS}
2. Inductance drop = 10% typical at I_{PK}
3. ΔT = 15°C rise typical at I_{RMS}

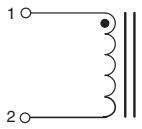
Mechanical





SUGGESTED PAD LAYOUT

Schematic



Weight . . . . . 0.2 grams
Tape & Reel 2500/reel

Dimensions: Inches / mm
Unless otherwise specified, all tolerances are ± .010 / 0,25

SMT POWER INDUCTORS
P0751/2 Series

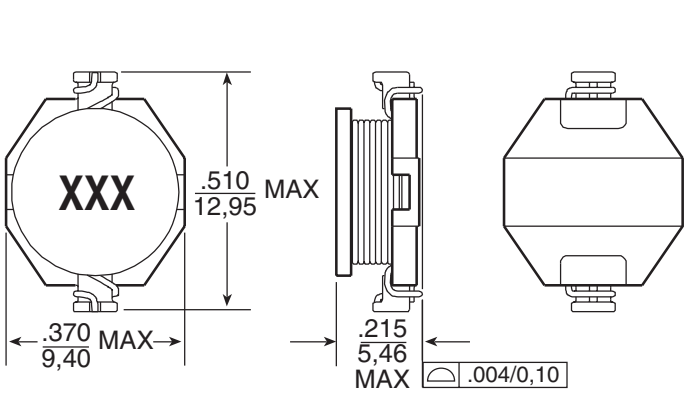
- Reliable self-leads
- High energy storage and low DC resistance
- Ideal for DC/DC conversion in notebook computers, PDA's, step-up or step-down converters

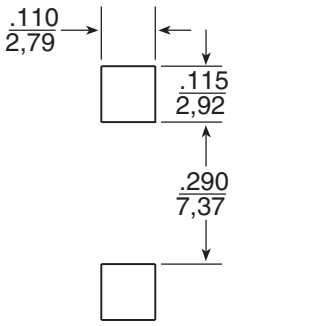
Electrical Specifications @ 25°C — Operating Temperature -40°C to +85°C

Part Number	Inductance @ I_{PK} A_{DC} (µH ± 15%)	DCR (MAX) (mΩ)	I_{PK} (A)	I_{RMS} (A)	Part Marking
P0751.102T	1.0	9	9	6.8	102
P0751.152T	1.5	10	8	6.4	152
P0751.222T	2.2	12	7	6.1	222
P0751.332T	3.3	15	6.4	5.4	332
P0751.472T	4.7	18	5.4	4.8	472
P0751.682T	6.8	22	4.6	4.4	682
P0751.103T	10	38	3.8	3.9	103
P0751.153T	15	46	3	3.1	153
P0751.223T	22	85	2.6	2.7	223
P0751.333T	33	100	2	2.1	333
P0751.473T	47	140	1.6	1.8	473
P0751.683T	68	180	1.4	1.5	683
P0752.104T	100	260	1.2	1.3	104
P0752.154T	150	380	1	1	154
P0752.224T	220	610	.8	.8	224
P0752.334T	330	930	.6	.6	334
P0752.474T	470	1270	.5	.5	474
P0752.684T	680	1840	.4	.4	684
P0752.105T	1000	2880	.3	.3	105

NOTES:
1. Inductance tested at 100 kHz, 10 mV_{RMS}
2. Inductance drop = 10% typical at I_{PK}
3. ΔT = 15°C rise typical at I_{RMS}

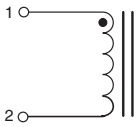
Mechanical





SUGGESTED PAD LAYOUT

Schematic



Weight . . . . . 0.8 grams
Tape & Reel. 800/reel

Dimensions: Inches / mm

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

SMT POWER INDUCTORS
P0762 Series

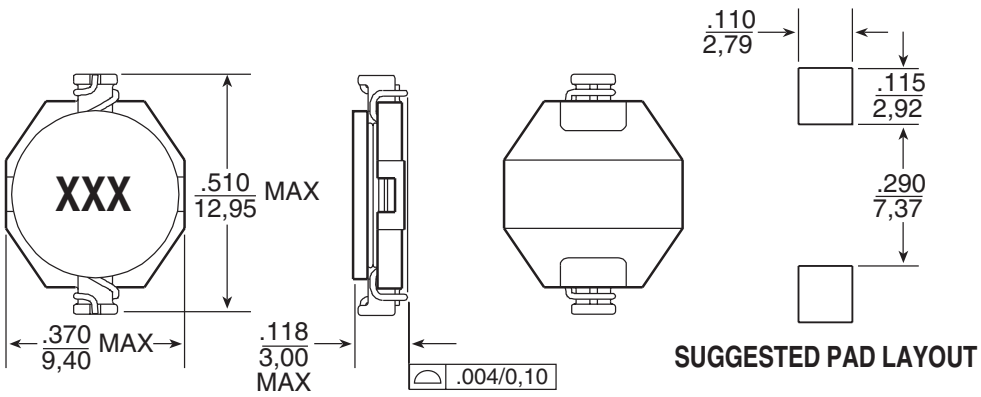
- Reliable self-leads
- High energy storage and low DC resistance
- Ideal for DC/DC conversion in notebook computers, PDA's, step-up or step-down converters

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

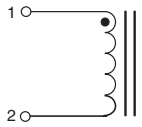
Part Number	Inductance @ I_{PK} A_{DC} (µH ± 15%)	DCR (MAX) (mΩ)	I_{PK} (A)	I_{RMS} (A)	Part Marking
P0762.103T	10	110	2.4	2	103
P0762.153T	15	150	2	1.5	153
P0762.223T	22	230	1.6	1.3	223
P0762.333T	33	300	1.4	1.1	333
P0762.473T	47	390	1.0	.8	473
P0762.683T	68	660	.9	.7	683
P0762.104T	100	840	.7	.6	104
P0762.154T	150	1200	.6	.5	154
P0762.224T	220	1900	.5	.4	224
P0762.334T	330	2700	.4	.3	334
P0762.474T	470	4000	.3	.2	474
P0762.684T	680	5300	.2	.1	684
P0762.105T	1000	8400	.1	.05	105

NOTES:
1. Inductance tested at 100 kHz, 10 mV_{RMS}
2. Inductance drop = 10% typical at I_{PK}
3. ΔT = 30°C rise typical at I_{RMS}

Mechanical



Schematic



Weight . . . . . 0.8 grams
Tape & Reel 1000/reel

Dimensions: Inches / mm
Unless otherwise specified, all tolerances are ± .010 / 0,25

SMT POWER INDUCTORS
P0250 Series

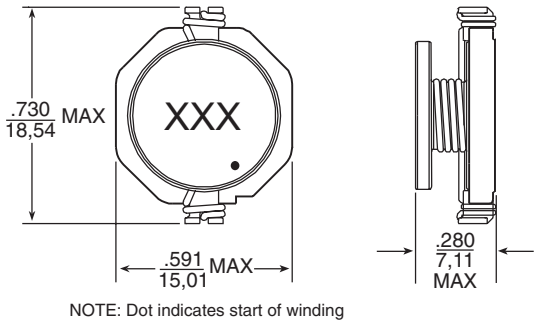
- Reliable self-leads
- High energy storage and low DC resistance
- Ideal for DC/DC conversion in notebook computers, PDA's, step-up or step-down converters

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

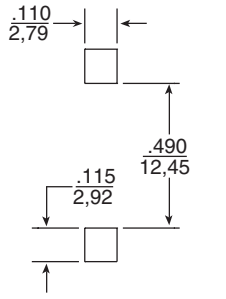
Part Number	Inductance @ I_{PK} A_{DC} (µH ± 15%)	DCR (MAX) (mΩ)	I_{PK} (A)	I_{RMS} (A)	Part Marking
P0250.102T	1.0	9	20.0	8.60	102
P0250.222T	2.2	14	16.0	7.10	222
P0250.332T	3.3	15	14.0	6.20	332
P0250.562T	5.6	20	12.0	5.30	562
P0250.103T	10	31	10.0	4.30	103
P0250.153T	15	36	8.0	4.00	153
P0250.223T	22	47	7.0	3.50	223
P0250.333T	33	66	5.5	3.00	333
P0250.473T	47	86	4.5	2.60	473
P0250.683T	68	130	3.5	2.30	683
P0250.104T	100	190	3.0	1.80	104
P0250.154T	150	250	2.6	1.50	154
P0250.224T	220	380	2.4	1.20	224
P0250.334T	330	560	1.9	1.00	334
P0250.474T	470	850	1.4	0.82	474
P0250.684T	680	1100	1.2	0.72	684
P0250.105T	1000	1800	1.0	0.56	105

NOTES:
1. Inductance tested at 100 kHz, 0.1 V_{RMS}
2. Inductance drop = 10% typical at I_{PK}
3. ΔT = 40°C rise typical at I_{RMS}

Mechanical

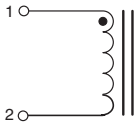


NOTE: Dot indicates start of winding



SUGGESTED PAD LAYOUT

Schematic



Weight . . . . . 3.6 grams
Tape & Reel. 350/reel

Dimensions: Inches / mm

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

SMT POWER INDUCTORS
P1252 Series

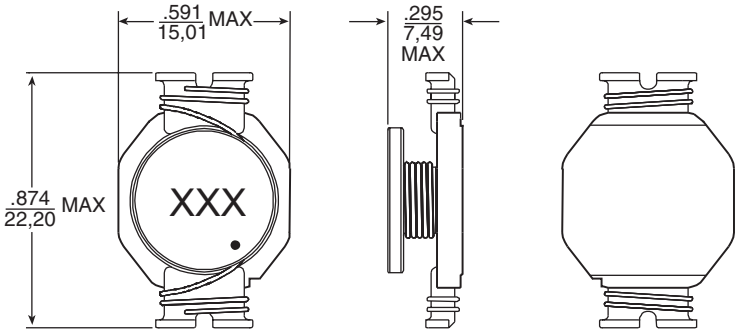
- Reliable self-leads, low profile
- High energy storage and low DC resistance
- Ideal for high current, low voltage (3.3 V) DC/DC converter applications

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

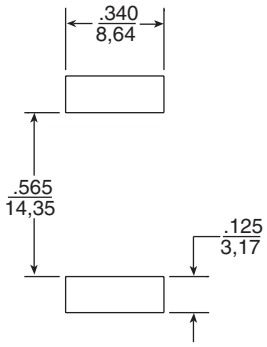
Part Number	Inductance @ I_{PK} A_{DC} (µH ± 20%)	DCR (MAX) (mΩ)	I_{PK} (A)	I_{RMS} (A)	Part Marking
P1252.781T	0.78	2.6	30.0	15.00	781
P1252.152T	1.5	4.0	25.0	15.00	152
P1252.222T	2.2	6.1	20.0	12.00	222
P1252.332T	3.3	8.6	17.0	10.00	332
P1252.392T	3.9	10	15.0	9.00	392
P1252.472T	4.7	14	13.0	8.40	472
P1252.602T	6.0	17	12.0	7.50	602
P1252.782T	7.8	18	11.0	7.50	782
P1252.103T	10	26	10.0	6.00	103

NOTES:
1. Inductance tested at 100 kHz, 0.1 V_{RMS}
2. Inductance drop = 10% typical at I_{PK}
3. ΔT = 40°C rise typical at I_{RMS}

Mechanical

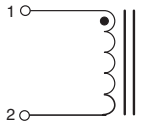


NOTE: Dot indicates start of winding



SUGGESTED PAD LAYOUT

Schematic



Weight . . . . . 4.1 grams
Tape & Reel 300/reel

Dimensions: Inches / mm

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

SMT POWER INDUCTORS
P0648 Series

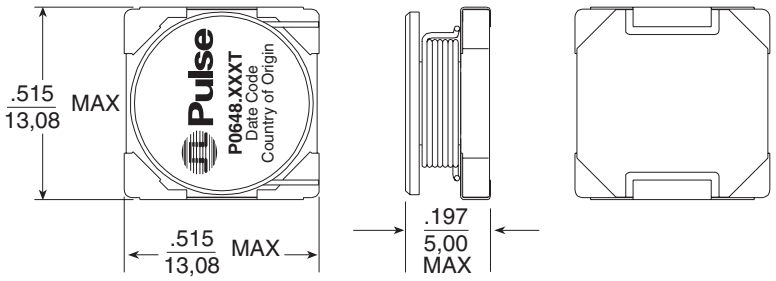
- Very high current ratings, up to 17.7 amps
- Ideal for DC/DC conversion in portable computers, camcorders, PDAs, or other portable communication equipment
- Low profile and small footprint

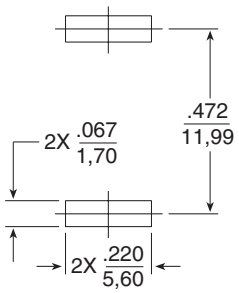
Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

Part Number	Inductance @ I_{PK} A_{DC} (µH ± 20%)	DCR (MAX) (mΩ)	I_{PK} (A)	I_{RMS} (A)
P0648.102T	1.05	5.5	17.7	12.2
P0648.192T	1.9	7.5	12.9	9.6
P0648.282T	2.8	9.8	10.5	8.1
P0648.342T	3.4	9.6	9.1	7.6
P0648.462T	4.6	15.5	7.8	6.5
P0648.682T	6.8	22	6.6	5.1
P0648.103T	10.2	33	5.4	4.3
P0648.153T	15.2	44	4.4	3.6
P0648.223T	22	61	3.7	3.3
P0648.323T	32	90	2.9	2.5
P0648.463T	46	148	2.4	2.1
P0648.653T	65	166	2.0	1.8
P0648.104T	100	262	1.7	1.4
P0648.154T	152	410	1.3	1.2
P0648.214T	214	557	1.1	1.0
P0648.324T	320	880	0.9	0.9
P0648.454T	450	1230	0.8	0.7
P0648.644T	645	1660	0.6	0.6
P0648.105T	1030	2680	0.5	0.5

NOTES: 1. Inductance tested at 100 kHz, 10 mV_{RMS} 2. Inductance drop = 10% typical at I_{PK}

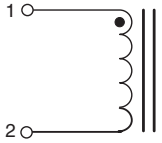
Mechanical





SUGGESTED PAD LAYOUT

Schematic

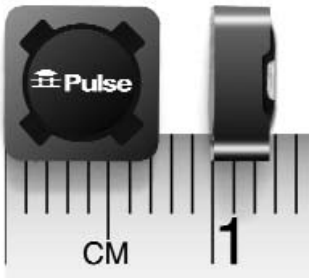


Weight . . . . . 2.2 grams
Tape & Reel. 500/reel
Dimensions: Inches / mm

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

SMT POWER INDUCTORS
Shielded Drum Core - P1166 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
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:

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

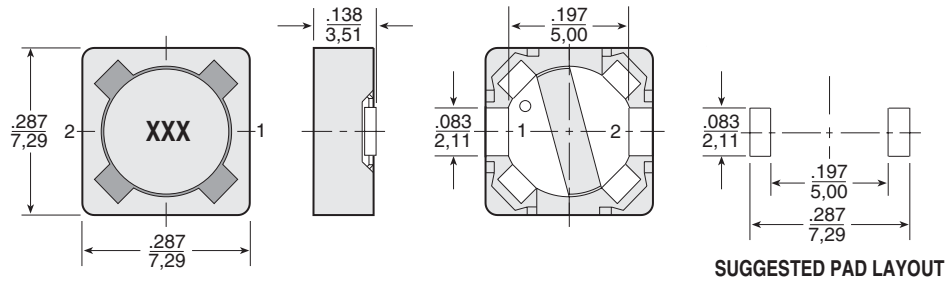
Total loss = Copper loss + Core loss (mW)

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

Irms = [IDC^2 + ΔI^2/12]$^{1/2}$ (A)

Core loss = 4.26 x 10^{-8} 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



SUGGESTED PAD LAYOUT

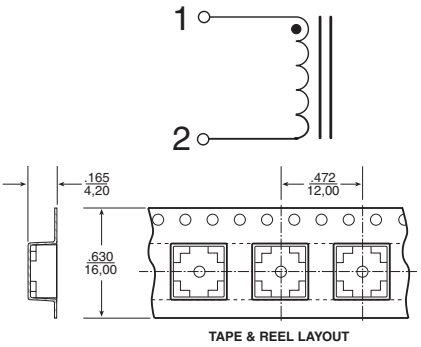
Dimensions: Inches / mm

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

Weight . . . . . 0.7 grams

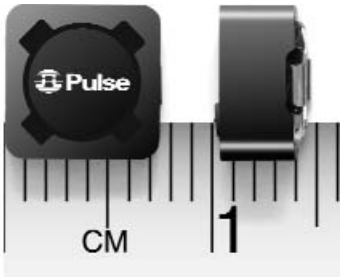
Tape & Reel 1200/reel

Schematic



TAPE & REEL LAYOUT

SMT POWER INDUCTORS
Shielded Drum Core - P1167 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
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 = [Total loss (mW) / 2.146]$^{.833}$ (°C)

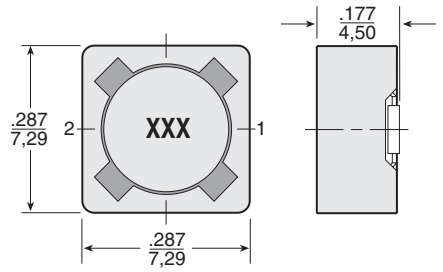
Total loss = Copper loss + Core loss (mW)

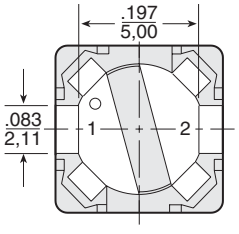
Copper loss = Irms^2 x DCR (Typical) (mW)

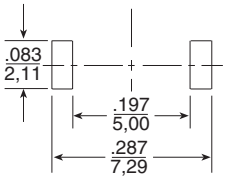
Irms = [IDC^2 + ΔI^2/12]$^{1/2}$ (A)

Core loss = 6.79 x 10^{-8} 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







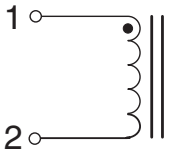
SUGGESTED PAD LAYOUT

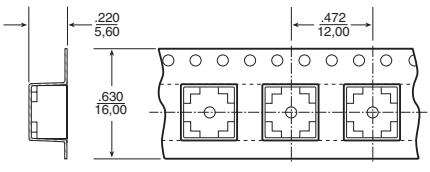
Dimensions: Inches / mm

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

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

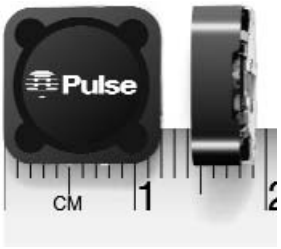
Schematic





TAPE & REEL LAYOUT

SMT POWER INDUCTORS
Shielded Drum Core - P1168 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
P1168.501T	0.32	14	1.9	2.3	0.5±30%	18	14	101.9
P1168.102T	0.65	11	3.0	3.7	1.0±30%	14	11	145.5
P1168.162T	1.0	8.5	5.4	6.3	1.6±30%	10	8.5	181.1
P1168.242T	1.6	7.5	6.9	8.1	2.4±30%	8.1	7.5	222.3
P1168.332T	2.2	6.4	9.5	11	3.3±30%	7.3	6.4	258.6
P1168.452T	2.9	6.0	11	13	4.5±30%	6.4	6.0	305.7
P1168.562T	3.6	5.5	13	15	5.6±30%	5.7	5.5	335.6
P1168.682T	4.4	4.6	18	22	6.8±30%	5.2	4.6	364.6
P1168.103T	7.5	3.6	29	35	10±20%	4.1	3.6	443.0
P1168.123T	9.0	3.5	32	37	12±20%	3.8	3.5	489.0
P1168.153T	11.3	3.1	40	47	15±20%	3.3	3.1	566.0
P1168.183T	13.5	2.8	48	58	18±20%	2.9	2.8	591.6
P1168.223T	16.5	2.6	55	67	22±20%	2.7	2.6	640.4
P1168.273T	20.3	2.4	67	79	27±20%	2.4	2.4	743.5
P1168.333T	24.8	2.2	76	94	33±20%	2.2	2.2	820.0
P1168.393T	29.3	1.9	101	126	39±20%	2.0	1.9	883.0
P1168.473T	35.3	1.8	112	140	47±20%	1.9	1.8	977.3
P1168.563T	42.0	1.7	129	157	56±20%	1.7	1.7	1037.4
P1168.683T	51.0	1.5	169	202	68±20%	1.5	1.6	1174.3
P1168.823T	61.5	1.4	191	232	82±20%	1.4	1.5	1285.3
P1168.104T	75.0	1.2	222	270	100±20%	1.2	1.4	1395.7
P1168.124T	90.0	1.1	252	316	120±20%	1.1	1.3	1547.6
P1168.154T	113	1.0	346	456	150±20%	1.0	1.1	1717.2
P1168.184T	135	0.90	385	497	180±20%	0.90	1.1	1890.6
P1168.224T	165	0.80	506	681	220±20%	0.80	0.93	2094.8
P1168.274T	203	0.70	596	775	270±20%	0.70	0.85	2311.6
P1168.334T	248	0.66	764	955	330±20%	0.66	0.75	2566.6
P1168.394T	293	0.62	870	1087	390±20%	0.62	0.71	2778.7
P1168.474T	353	0.57	1150	1403	470±20%	0.57	0.61	3050.1
P1168.564T	420	0.53	1283	1623	560±20%	0.53	0.58	3336.6
P1168.684T	510	0.50	1493	1824	680±20%	0.50	0.54	3665.7
P1168.824T	615	0.44	1924	2355	820±20%	0.44	0.47	4036.0
P1168.105T	750	0.40	2174	2850	1000±20%	0.40	0.45	4449.1

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) / 4.728]$^{.833}$ (°C)

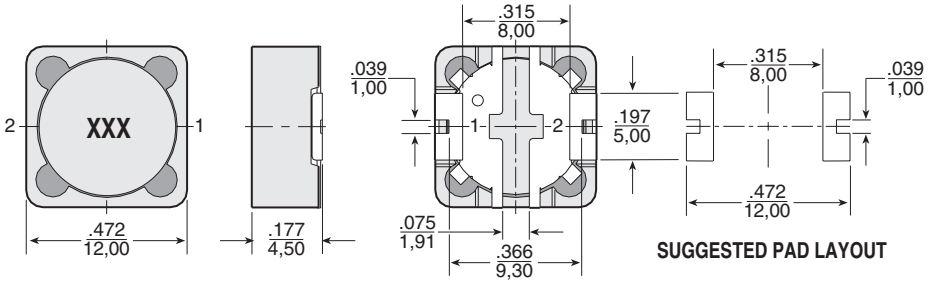
Total loss = Copper loss + Core loss (mW)

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

Irms = [IDC^2 + ΔI^2/12]$^{1/2}$ (A)

Core loss = 2.25 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

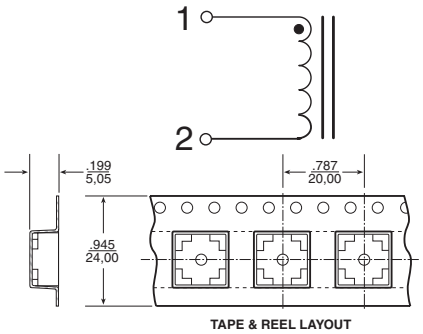


Dimensions: Inches / mm

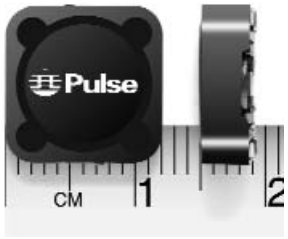
Unless otherwise specified, all tolerances are ± .010 / 0,25

Weight . . . . . 2.5 grams
Tape & Reel. 600/reel

Schematic



SMT POWER INDUCTORS
Shielded Drum Core - P1169 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
P1169.501T	0.32	14	1.9	2.3	0.5±30%	18	14	101.9
P1169.102T	0.65	11	3.0	3.7	1.0±30%	14	11	145.5
P1169.162T	1.0	8.5	5.4	6.3	1.6±30%	10	8.5	181.1
P1169.242T	1.6	7.5	6.9	8.1	2.4±30%	8.1	7.5	222.3
P1169.332T	2.2	6.4	9.5	11	3.3±30%	7.3	6.4	258.6
P1169.452T	2.9	6.0	11	13	4.5±30%	6.4	6.0	305.7
P1169.562T	3.6	5.5	13	15	5.6±30%	5.7	5.5	335.6
P1169.682T	4.4	4.6	18	22	6.8±30%	5.2	4.6	364.6
P1169.103T	7.5	3.6	29	35	10±20%	4.1	3.6	443.0
P1169.123T	9.0	3.5	32	37	12±20%	3.8	3.5	489.0
P1169.153T	11.3	3.1	40	47	15±20%	3.3	3.1	566.0
P1169.183T	13.5	2.8	48	58	18±20%	2.9	2.8	591.6
P1169.223T	16.5	2.6	55	67	22±20%	2.7	2.6	640.4
P1169.273T	20.3	2.4	67	79	27±20%	2.4	2.4	743.5
P1169.333T	24.8	2.2	76	94	33±20%	2.2	2.2	820.0
P1169.393T	29.3	1.9	101	126	39±20%	2.0	1.9	883.0
P1169.473T	35.3	1.8	112	140	47±20%	1.9	1.8	977.3
P1169.563T	42.0	1.7	129	157	56±20%	1.7	1.7	1037.4
P1169.683T	51.0	1.5	169	202	68±20%	1.5	1.6	1174.3
P1169.823T	61.5	1.4	191	232	82±20%	1.4	1.5	1285.3
P1169.104T	75.0	1.2	222	270	100±20%	1.2	1.4	1395.7
P1169.124T	90.0	1.1	252	316	120±20%	1.1	1.3	1547.6
P1169.154T	113	1.0	346	456	150±20%	1.0	1.1	1717.2
P1169.184T	135	0.90	385	497	180±20%	0.90	1.1	1890.6
P1169.224T	165	0.80	506	681	220±20%	0.80	0.93	2094.8
P1169.274T	203	0.70	596	775	270±20%	0.70	0.85	2311.6
P1169.334T	248	0.66	764	955	330±20%	0.66	0.75	2566.6
P1169.394T	293	0.62	870	1087	390±20%	0.62	0.71	2778.7
P1169.474T	353	0.57	1150	1403	470±20%	0.57	0.61	3050.1
P1169.564T	420	0.53	1283	1623	560±20%	0.53	0.58	3336.6
P1169.684T	510	0.50	1493	1824	680±20%	0.50	0.54	3665.7
P1169.824T	615	0.44	1924	2355	820±20%	0.44	0.47	4036.0
P1169.105T	750	0.40	2174	2850	1000±20%	0.40	0.45	4449.1

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) / 4.728]$^{.833}$ (°C)

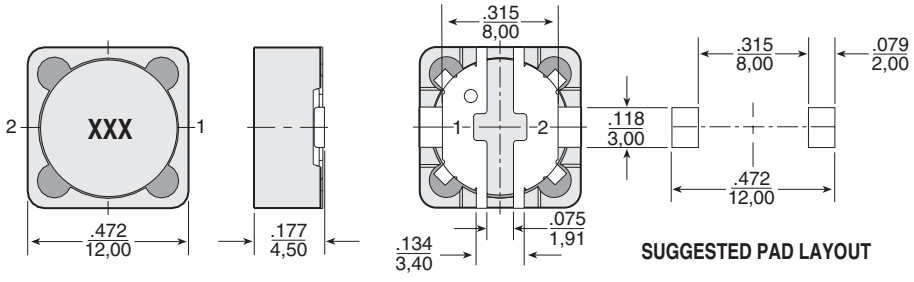
Total loss = Copper loss + Core loss (mW)

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

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

Core loss = 2.25 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

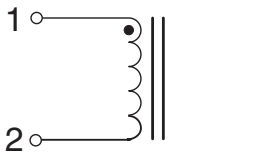


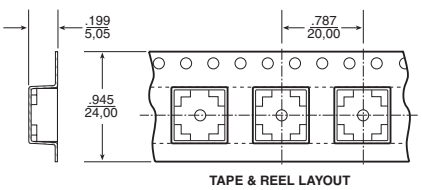
SUGGESTED PAD LAYOUT

Dimensions: Inches / mm Unless otherwise specified, all tolerances are ± .010 / 0,25

Weight . . . . . 2.5 grams
Tape & Reel. 600/reel

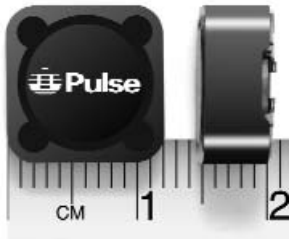
Schematic





TAPE & REEL LAYOUT

SMT POWER INDUCTORS
Shielded Drum Core - P1170 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
P1170.901T	0.6	13	2.0	2.9	0.9±30%	14	13	136.3
P1170.142T	0.9	11	3.0	4.2	1.4±30%	13	11	165.0
P1170.222T	1.5	9.6	4.0	5.7	2.2±30%	9.7	9.6	212.1
P1170.302T	2.0	8.3	5.4	7.7	3.0±30%	8.3	8.3	244.7
P1170.392T	2.5	7.0	7.4	10	3.9±30%	7.0	7.1	275.7
P1170.502T	3.3	6.4	8.5	12	5.0±30%	6.4	6.6	311.9
P1170.642T	4.2	5.3	13	18	6.4±30%	5.8	5.3	357.2
P1170.103T	7.5	4.4	19	25	10±20%	4.6	4.4	424.2
P1170.123T	9.0	4.2	21	27	12±20%	4.3	4.2	471.3
P1170.153T	11.3	4.0	22	30	15±20%	4.0	4.1	548.5
P1170.183T	13.5	3.4	32	40	18±20%	3.4	3.4	578.4
P1170.223T	16.5	3.0	36	45	22±20%	3.0	3.2	666.6
P1170.273T	20.3	2.7	41	51	27±20%	2.7	3.0	734.2
P1170.333T	24.8	2.6	56	70	33±20%	2.6	2.6	813.8
P1170.393T	29.3	2.4	60	75	39±20%	2.4	2.5	879.9
P1170.473T	35.3	2.2	79	100	47±20%	2.2	2.2	977.3
P1170.563T	42.0	2.0	85	110	56±20%	2.0	2.1	1041.8
P1170.683T	51.0	1.8	97	120	68±20%	1.8	1.9	1144.6
P1170.823T	61.5	1.7	127	158	82±20%	1.7	1.7	1260.2
P1170.104T	75.0	1.4	182	230	100±20%	1.4	1.4	1413.9
P1170.124T	90.0	1.3	201	253	120±20%	1.3	1.4	1533.2
P1170.154T	113	1.2	225	280	150±20%	1.2	1.3	1710.4
P1170.184T	135	1.1	249	310	180±20%	1.1	1.2	1889.9
P1170.224T	165	1.0	319	400	220±20%	1.0	1.1	2101.8
P1170.274T	203	0.91	363	460	270±20%	0.91	1.0	2327.8
P1170.334T	248	0.82	424	530	330±20%	0.82	0.93	2554.4
P1170.394T	293	0.72	561	690	390±20%	0.72	0.81	2775.7
P1170.474T	353	0.68	629	770	470±20%	0.68	0.77	3057.7
P1170.564T	420	0.63	851	1060	560±20%	0.63	0.66	3317.6
P1170.684T	510	0.57	950	1200	680±20%	0.57	0.62	3660.4
P1170.824T	615	0.52	1241	1550	820±20%	0.52	0.54	4007.2
P1170.105T	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)

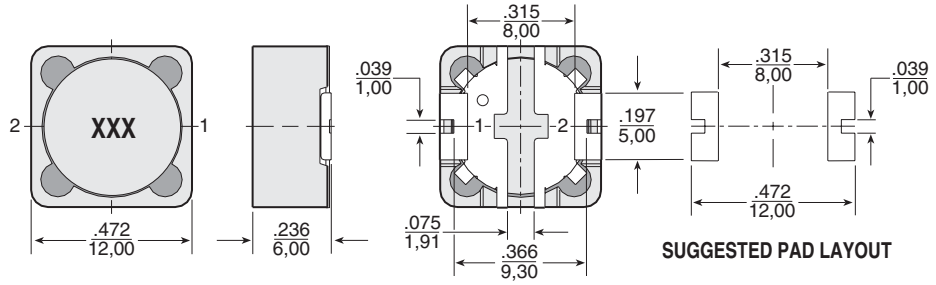
Total loss = Copper loss + Core loss (mW)

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



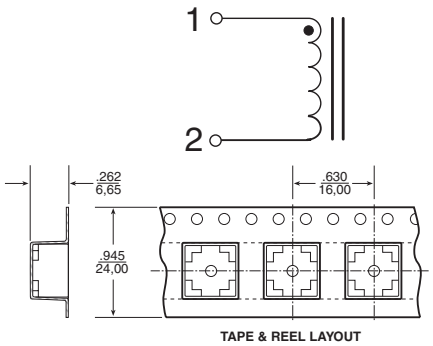
SUGGESTED PAD LAYOUT

Dimensions: Inches / mm

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

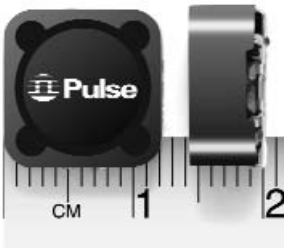
Weight . . . . . 3.2 grams
Tape & Reel 500/reel

Schematic



TAPE & REEL LAYOUT

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)

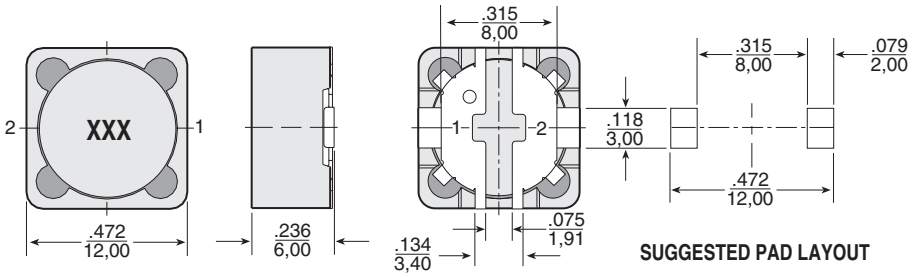
Total loss = Copper loss + Core loss (mW)

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

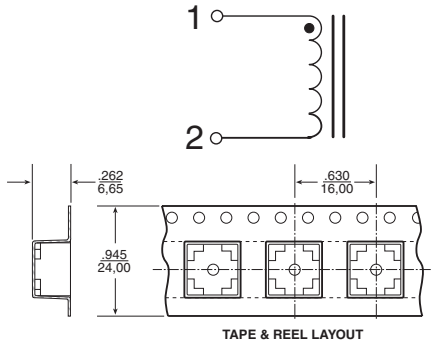


Dimensions: Inches / mm

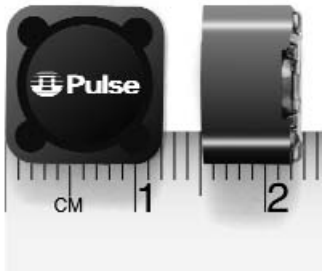
Unless otherwise specified, all tolerances are ± .010 / 0,25

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

Schematic



SMT POWER INDUCTORS
Shielded Drum Core - P1172 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
P1172.132T	0.8	14	2.3	3.0	1.3±30%	15	14	89.8
P1172.202T	1.3	10	4.5	6.0	2.0±30%	13	10	113.0
P1172.272T	1.8	9.0	5.8	7.3	2.7±30%	11	9.0	129.1
P1172.372T	2.4	8.3	6.8	8.5	3.7±30%	9.2	8.3	153.4
P1172.472T	3.1	7.9	7.6	9.5	4.7±30%	8.2	7.9	171.9
P1172.602T	3.9	6.0	13.0	16.5	6.0±30%	6.9	6.0	196.3
P1172.762T	4.9	5.7	14.3	18.5	7.6±30%	6.2	5.7	225.0
P1172.103T	7.5	5.2	17.3	21.8	10±20%	5.5	5.2	248.7
P1172.123T	9.0	4.5	23.3	29.0	12±20%	5.1	4.5	276.3
P1172.153T	11.3	4.1	28.3	35.4	15±20%	4.4	4.1	300.8
P1172.183T	13.5	4.0	29.4	37.0	18±20%	4.3	4.0	339.1
P1172.223T	16.5	3.8	33.2	42.0	22±20%	3.8	3.8	369.7
P1172.273T	20.3	3.4	36.2	45.9	27±20%	3.4	3.6	409.4
P1172.333T	24.8	3.0	49.3	64.8	33±20%	3.0	3.1	455.9
P1172.393T	29.3	2.7	65.2	81.5	39±20%	2.8	2.7	494.8
P1172.473T	35.3	2.6	71.4	89.0	47±20%	2.6	2.6	551.3
P1172.683T	51.0	2.1	108.0	135.0	68±20%	2.1	2.1	671.0

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) / 6.288]$^{.833}$ (°C)

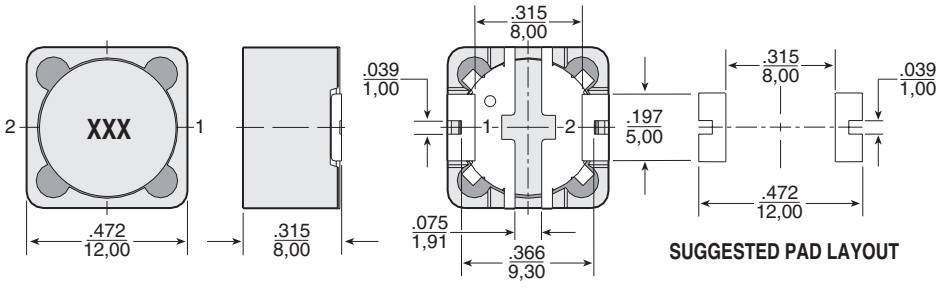
Total loss = Copper loss + Core loss (mW)

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

Irms = [IDC^2 + ΔI^2/12]$^{1/2}$ (A)

Core loss = 6.81 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



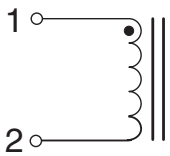
SUGGESTED PAD LAYOUT

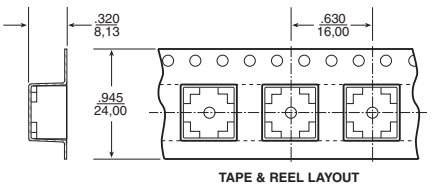
Dimensions: Inches / mm

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

Weight . . . . . 4.5 grams
Tape & Reel. 450/reel

Schematic

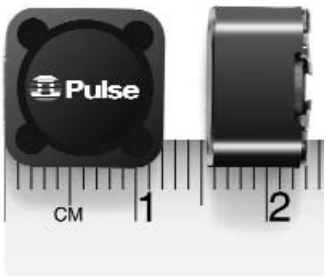




TAPE & REEL LAYOUT

SMT POWER INDUCTORS
Shielded Drum Core - P1173 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
P1173.132T	0.8	14	2.3	3.0	1.3±30%	15	14	89.8
P1173.202T	1.3	10	4.5	6.0	2.0±30%	13	10	113.0
P1173.272T	1.8	9.0	5.8	7.3	2.7±30%	11	9.0	129.1
P1173.372T	2.4	8.3	6.8	8.5	3.7±30%	9.2	8.3	153.4
P1173.472T	3.1	7.9	7.6	9.5	4.7±30%	8.2	7.9	171.9
P1173.602T	3.9	6.0	13.0	16.5	6.0±30%	6.9	6.0	196.3
P1173.762T	4.9	5.7	14.3	18.5	7.6±30%	6.2	5.7	225.0
P1173.103T	7.5	5.2	17.3	21.8	10±20%	5.5	5.2	248.7
P1173.123T	9.0	4.5	23.3	29.0	12±20%	5.1	4.5	276.3
P1173.153T	11.3	4.1	28.3	35.4	15±20%	4.4	4.1	300.8
P1173.183T	13.5	4.0	29.4	37.0	18±20%	4.3	4.0	339.1
P1173.223T	16.5	3.8	33.2	42.0	22±20%	3.8	3.8	369.7
P1173.273T	20.3	3.4	36.2	45.9	27±20%	3.4	3.6	409.4
P1173.333T	24.8	3.0	49.3	64.8	33±20%	3.0	3.1	455.9
P1173.393T	29.3	2.7	65.2	81.5	39±20%	2.8	2.7	494.8
P1173.473T	35.3	2.6	71.4	89.0	47±20%	2.6	2.6	551.3
P1173.683T	51.0	2.1	108.0	135.0	68±20%	2.1	2.1	671.0

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) / 6.288]$^{.833}$ (°C)

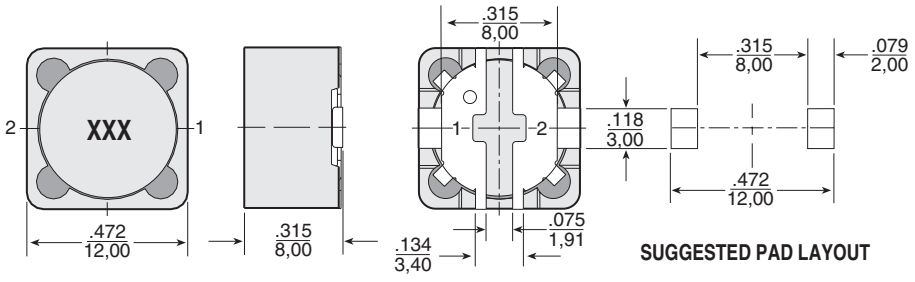
Total loss = Copper loss + Core loss (mW)

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

Irms = [IDC^2 + ΔI^2/12]$^{1/2}$ (A)

Core loss = 6.81 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



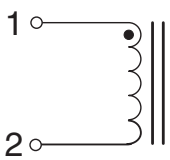
SUGGESTED PAD LAYOUT

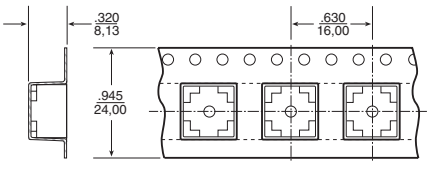
Dimensions: Inches / mm

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

Weight . . . . . 4.5 grams
Tape & Reel. 450/reel

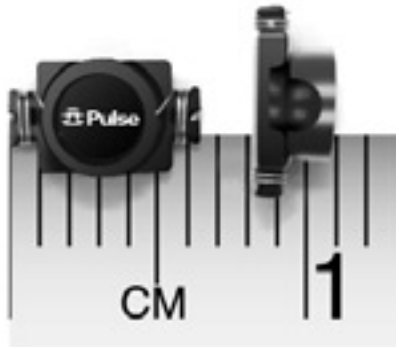
Schematic





TAPE & REEL LAYOUT

SMT POWER INDUCTORS
Shielded Drum Core - P1174 Series

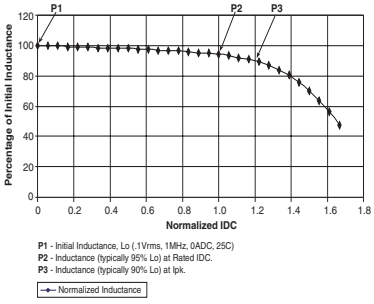


- Low profile and suitable for compact surface area mounting
- Large permissible DC current
- Low DC resistance

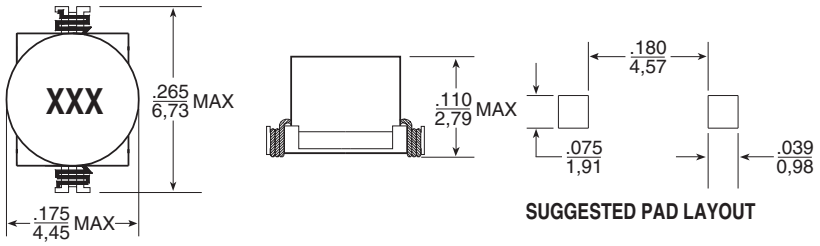
Electrical Specifications @ 25°C — Operating Temperature -40°C to +85°C

Part Number	Reference Values			Control Values			
	I_{SAT} @ 25°C (mA)[1]	L @ I_{SAT}, L_{SAT} (µH)[2]	I_{DC} (A)[3]	L w/o DC, L_0 ±20% (µH)	DCR MAX (Ω)	Q-FACTOR (MIN.)	SRF MIN (MHz)
P1174.102T	820	0.9	3.00	1.0	0.013	30@ 200kHZ	> 40.0
P1174.152T	600	1.3	2.80	1.5	0.015	30 @ 200kHz	> 40.0
P1174.222T	450	1.9	1.80	2.2	0.018	40 @ 200kHz	> 40.0
P1174.332T	370	2.9	1.60	3.3	0.021	40 @ 200kHz	> 40.0
P1174.472T	310	4.2	1.40	4.7	0.030	40 @ 200kHz	> 40.0
P1174.682T	240	6.1	1.20	6.8	0.051	40 @ 200kHz	36.0
P1174.103T	195	9.0	1.00	10.0	0.073	40 @ 200kHz	30.0
P1174.153T	150	13.5	0.80	15.0	0.090	40 @ 100kHz	26.0
P1174.223T	130	19.8	0.70	22.0	0.120	40 @ 100kHz	21.0
P1174.333T	110	29.7	0.60	33.0	0.188	40 @ 100kHz	15.0
P1174.473T	86	42.3	0.50	47.0	0.230	40 @ 100kHz	13.0
P1174.683T	76	61.2	0.40	68.0	0.370	40 @ 100kHz	8.0
P1174.104T	60	90.0	0.30	100.0	0.470	40 @ 100kHz	6.0
P1174.154T	50	135.0	0.26	150.0	0.620	40 @ 100kHz	5.0
P1174.224T	40	198.0	0.22	220.0	0.950	40 @ 100kHz	4.5
P1174.334T	35	297.0	0.20	330.0	1.340	40 @ 100kHz	3.5
P1174.474T	30	423.0	0.19	470.0	1.800	40 @ 100kHz	3.0
P1174.604T	26	540.0	0.18	600.0	2.550	40 @ 100kHz	2.7
P1174.684T	25	612.0	0.17	680.0	2.650	40 @ 100kHz	2.5
P1174.105T	20	900.0	0.15	1000.0	4.000	40 @ 100kHz	2.0
P1174.505T	9	4900.0	0.05	5000 ±15%	18.500	40 @ 100kHz	0.5

NOTES:
1. I_{SAT} value is the current that will make inductance drop by ≤10%.
2. L_{SAT} value is a typical inductance value once the inductor is subjected to I_{SAT}.
3. I_{DC} is the current that will make a temperature rise of <30°C.



Mechanical

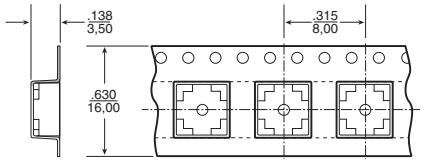


SUGGESTED PAD LAYOUT

Weight . . . . . 0.1 grams
Tape & Reel 2500/reel

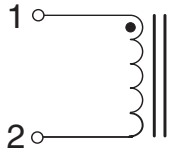
Dimensions: Inches / mm

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



TAPE & REEL LAYOUT

Schematic



MINIATURE SURFACE MOUNT POWER INDUCTORS

Pulse
A TECHNITROL COMPANY

- Reliable self-leaded design
- Very small size and cost-effective
- High energy storage and low DC resistance
- Ideal for DC/DC conversion in notebook computers, PDAs, step-up or step-down converters

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

Pulse Part Number	Reference Values			Control Values		Calculation Data
	I_{DC} (amp)	L @ I_{DC} MIN (µH)	ET (V-µsec)	L w/o DC ±15% (µH)	DCR ±15% (mΩ)	ET_{10} (V-µsec)
ROS 1						
P0430T	2.00	0.51	0.8	0.7	14	476.2
P0431T	1.90	0.76	0.8	1.1	18	370.4
P0432T	1.50	0.85	1.2	1.1	18	370.4
P0433T	1.20	1.44	1.8	1.9	28	277.8
P0434T	1.20	1.87	1.8	2.6	34	238.1
P0435T	1.00	2.72	2.3	3.9	40	196.1
P0436T	0.70	4.33	3.1	6.0	73	158.7
P0437T	0.60	5.35	3.3	7.1	100	144.9
P0438T	0.50	8.84	4.4	12.2	140	111.1
P0439T	0.45	10.79	5.0	14.7	155	101.0
P0440T	0.34	17.59	6.5	23.8	250	79.4
P0441T	0.29	25.50	8.4	33.8	280	66.7
P0442T	0.24	35.80	9.8	49	440	55.6
P0443T	0.20	52.70	12	72	650	45.7
P0444T	0.17	79	14	110	1050	37.0
P0445T	0.16	88	15	122	1065	35.1
P0446T	0.14	127	18	179	1600	29.0
ROS 2						
P0450T	5	0.51	3.0	0.64	7.6	181.8
P0451T	5	0.67	3.1	0.86	8.7	151.5
P0452T	5	1.09	0.5	1.5	11.4	113.6
P0453T	5	1.53	1.0	2.3	13	90.9
P0454T	3	1.78	7.5	2.3	15	90.9
P0455T	2.5	3.74	10.5	5.13	23	60.6
P0456T	2	4.76	13	6.3	26	56.8
P0457T	1.8	5.61	14	7.5	33	50.5
P0458T	1.5	9.09	15	13.2	70	39.5
P0459T	1.3	11.47	21	15.5	60	35.0
P0460T	1	22.95	31	34	90	24.6
P0461T	0.9	39.10	39	57.2	123	18.9
P0462T	0.8	40.80	35	62.5	240	18.2
P0463T	0.6	69.70	55	100	245	14.0
P0464T	0.5	76.50	54	103	305	14.2
P0465T	0.4	137	78	180	481	10.0
P0466T	0.35	182	87	254	682	8.7
P0467T	0.3	272	105	380	1030	7.0
P0468T	0.25	357	130	500	1200	6.1

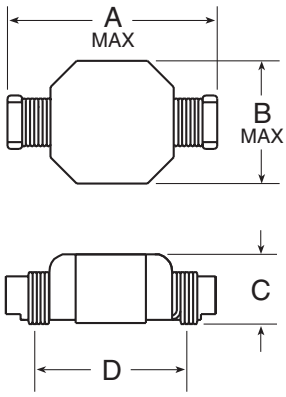
MINIATURE SURFACE MOUNT POWER INDUCTORS

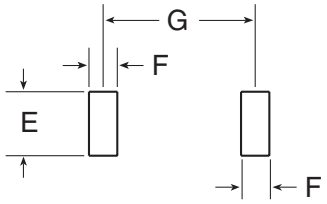
Pulse
A TECHNITROL COMPANY

Notes:

1. Temperature rise is 55° C in typical buck or boost circuits with the rated I_{DC} current and reference ET applied to the inductor.
2. Total loss in the inductor is 80 mWatts (ROS 1) and 280 mWatts (ROS 2) for 55°C temperature rise above ambient.
3. To estimate temperature rise in a given application, you must determine the total losses (copper losses + core losses) and apply the following formula:
   ROS 1: TempRise (C) = (Total Losses (mW))$^{.833}$ x 1.45
   ROS 2: TempRise (C) = (Total Losses (mW))$^{.833}$ x .508
4. To determine copper losses, calculate:
   CopperLoss (mW) = I_{DC}^2 x DCR
5. For core loss in mWatts, using frequency f (in Hz) and operating flux density B (in Gauss), calculate:
   ROS 1: CopperLoss (mW) = .127 x 10^{-10} x $f^{1.26}$ x $B^{2.11}$
   ROS 2: CopperLoss (mW) = .887 x 10^{-10} x $f^{1.26}$ x $B^{2.11}$
6. For flux density (B), calculate ET (V-µsec) for the application, and multiply by ET_{10} factor from the table.

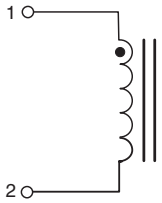
Mechanical





Suggested Pad Layout

Schematic



PKG	A	B	C	D	E	F	G
ROS 1	.335 8,51	.225 5,72	.125 3,18	.250 6,35	.100 2,54	.050 1,27	.250 6,35
ROS 2	.545 13,84	.390 9,91	.215 5,46	.440 11,18	.120 3,05	.065 1,65	.440 11,18

Dimensions: Inches / mm

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

	ROS 1	ROS 2
Weight	0.29 grams	1.1 grams
Tape & Reel	2000/reel	600/reel

SMT POWER INDUCTORS
Micro Power Series

- Lowest profile SMT Inductor family
- Suited for Micro Power and Handheld Devices
- Toroid Core for lowest EMI

Electrical Specifications @ 25°C — Operating Temperature -40°C to +100°C

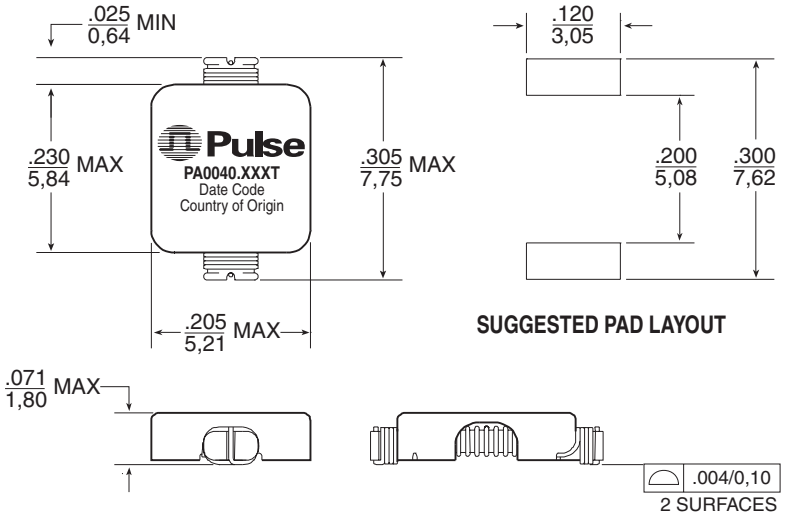
Part Number	Inductance @ Irated (µH MIN)	Irated [1] (ADC)	DCR (Ω)		Inductance @ 0 ADC (µH ±20%)	Saturation Current [2] (ADC)			Heating Current [3] (ADC TYP)
			TYP	MAX		-40°C	25°C	100°C	
PA0040.102T	0.80	1.84	0.080	0.103	1.0	2.40	2.10	1.70	1.84
PA0040.222T	1.60	1.40	0.115	0.130	2.2	1.52	1.40	1.12	1.52
PA0040.472T	3.22	0.98	0.150	0.180	4.7	1.00	0.98	0.80	1.22
PA0040.103T	6.96	0.67	0.214	0.240	10.0	0.72	0.67	0.56	1.04
PA0040.153T	10.71	0.54	0.260	0.300	15.0	0.46	0.54	0.48	1.00
PA0040.223T	15.26	0.45	0.310	0.360	22.0	0.46	0.45	0.40	0.88
PA0040.333T	23.59	0.36	0.470	0.556	33.0	0.36	0.36	0.32	0.80
PA0040.473T	32.48	0.31	0.700	0.833	47.0	0.22	0.31	0.26	0.72

NOTES:
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 by 30% at the stated ambient temperatures (-40°C, 25°C, 100°C). This current is determined by placing the component in the specified ambient environment 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 approximately 40°C. This current is determined by mounting the component on a PCB and applying the current to the device for 30 minutes without any forced air.

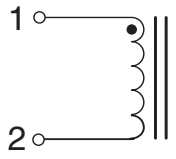
Mechanical

Schematic

PA0040.XXXT



SUGGESTED PAD LAYOUT

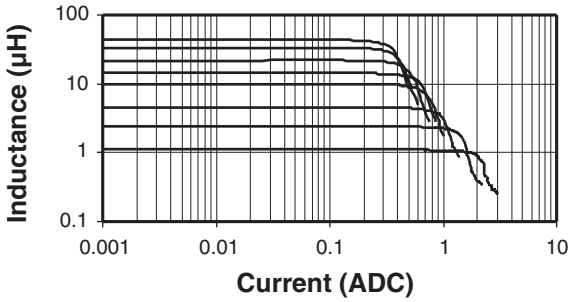


Weight . . . . . .0.10 grams
Tape & Reel 3,900/reel

Dimensions: Inches / mm

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

Typical Inductance vs. DC Bias



SELF-LEADED SURFACE MOUNT INDUCTORS

Pulse
A TECHNITROL COMPANY

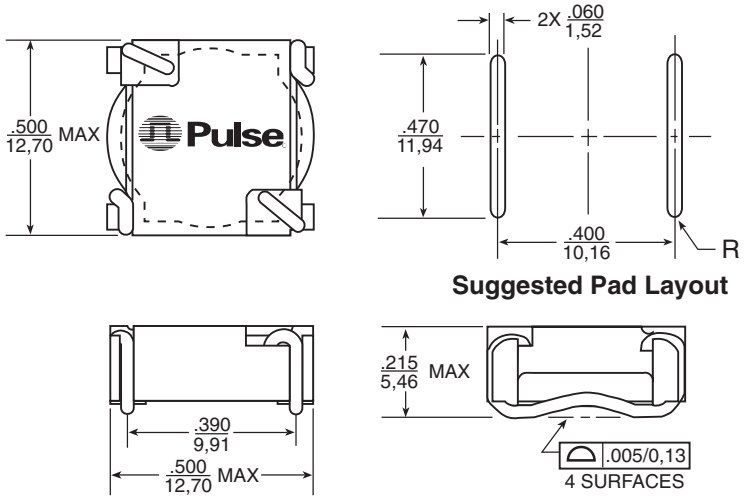
- Materials meet UL 94-VO rating
- Fits in half inch high boards for use in laptop and notebook computers
- Frequency range of up to 1 MHz
- Patented, low profile, self-leaded design

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

	Reference Values			Control Values		Calculation Data	
Part Number	I_{DC} (amp)	L @ DC L_{DC} (µH)	ET (V-µsec)	L w/o DC L_0 ±20% (µH)	DCR (nom) R_N +15% MAX (mΩ)	100 Gauss ET_{100} (V-µsec)	1 Amp DC H_1 (Orsted)
P0144	3.80	9.4	15.2	10.4	27	2.65	11.95
P0145	3.13	13.3	18.8	14.6	40	3.13	14.12
P0146	2.43	23	24.3	25	65	4.10	18.46
P0147	1.65	50	37.0	56	121	6.15	27.69
P0148	1.35	75	44.3	83	181	7.47	33.67
P0149	1.23	90	49.2	100	246	8.19	36.93
P0150	0.99	137	59.4	152	387	10.12	45.61
P0151	0.81	200	71.3	220	585	12.17	54.85
P0152	0.65	305	85.8	331	845	14.94	67.34
P0153	0.53	439	99.6	472	1322	17.83	80.37

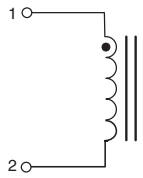
Notes:
1. The reference inductance at rated DC current is a typical value.
2. Temperature rise is 50°C in typical buck or boost circuits at 250 KHz and with the reference ET applied to the inductor.
3. Total loss in the inductor is 380 mWatts for 50°C temperature rise above ambient.
4. To estimate temperature rise in a given application, determine copper and core losses, divide by 380 and multiply by 50.
5. For the copper loss, calculate $I_{DC}{}^2 X R_N$.
6. For core loss, using frequency (f) and operating flux density (B), calculate $6.11 \times 10^{-18} \times B^{2.7} \times f^{2.04}$.
7. For flux density (B), calculate ET (V-µsec) for the application, divide by ET_{100} from the table, and multiply by 100.
8. Limit the DC bias (H) to 46 orsteds. Calculate H by multiplying H_1 from the table by I_{DC} of the application.

Mechanical



Suggested Pad Layout

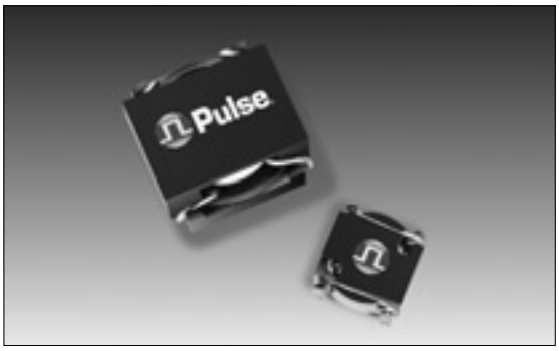
Schematic



Dimensions: Inches / mm

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

SURFACE MOUNT INDUCTORS
SELF-LEADED
Electrical Information



- Materials meet UL 94V-0 rating
- Fits in half inch high boards for use in laptop and notebook computers
- Frequency range of up to 1 MHz
- Patented, low profile, self-leaded design

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

Reference Values[1]				Control Values			Calculation Data		
Pulse Part Number	I_{DC}[2] (Amps)	L with DC L_{DC} (µH)	ET	Size Code	L w/o DC L_O (µH ± 20%)	DCR R_{DC} (mΩ MAX)	100 Gauss ET_{100} (V-µSec)	1 Amp DC H_I (Orsted)	DCR R_N (mΩ NOM)
PE-53600	1.40	6.20	1.33	LCI-20	7.0	70.0	0.94	21.9	60.3
PE-53601	1.00	17.6	2.40	LCI-20	22.7	125	1.68	39.3	109
PE-53602	1.40	29.7	4.60	LCI-30	35.3	166	4.12	23.2	141
PE-53604	1.30	58.1	7.83	LCI-37	73.0	290	7.09	28.8	233
PE-53606	0.94	114	10.0	LCI-30	167	380	8.97	50.5	330
PE-53608	0.90	192	15.7	LCI-37	292	560	14.2	57.7	472
PE-53611	0.72	383	23.5	LCI-37	672	862	21.3	86.5	750
PE-53613	0.74	645	36.5	LCI-44	1134	1250	37.2	84.4	1040
PE-53614	0.71	1070	54.4	LCI-50	1950	1700	56.9	95.7	1480
PE-53630	3.4	1.01	0.532	LCI-20	1.10	11.0	0.37	8.74	12.5
PE-53631	2.8	9.4	2.70	LCI-30	12.3	43.4	2.42	13.7	37.8
PE-53632	2.7	16.2	4.29	LCI-37	21.9	63.0	3.88	15.8	54.7
PE-53633	2.7	29.1	6.90	LCI-44	40.5	85.0	7.02	15.9	75.8
PE-53634	2.6	50.0	10.5	LCI-50	72.9	133	11.0	18.5	115
PE-53650	4.8	3.8	1.76	LCI-30	5.20	17.3	1.58	8.87	14.8
PE-53651	5.4	5.1	2.51	LCI-37	7.5	17.7	2.27	9.25	14.3
PE-53652	5.5	9.0	4.06	LCI-44	14.0	22.3	4.13	9.38	19.3
PE-53653	5.1	16.1	6.27	LCI-50	25.9	32.0	6.55	11.0	30.3
PE-53661	8.0	2.5	1.77	LCI-37	3.80	8.3	1.61	6.53	7.20
PE-53662	7.8	4.9	3.04	LCI-44	7.9	12.4	3.10	7.03	10.5
PE-53663	7.2	9.3	4.92	LCI-50	16.0	18.7	5.15	8.67	16.3
PE-53680	11.5	1.32	1.33	HCI-37	2.10	4.0	1.20	4.90	3.39
PE-53681	11.4	2.5	2.23	HCI-44	4.20	5.4	2.27	5.16	4.64
PE-53682	10.4	4.7	3.58	HCI-50	8.4	8.3	3.75	6.30	7.18
PE-53683	10.9	9.4	6.84	HCI-68	17.6	12.3	7.93	6.24	10.7
PE-53690	14.3	0.81	1.035	HCI-37	1.25	2.5	0.94	381	2.16
PE-53691	13.9	1.68	1.83	HCI-44*	2.80	3.6	1.86	4.22	3.16
PE-53692	12.4	3.5	3.13	HCI-50*	6.5	6.6	3.28	5.52	5.75
PE-53700	15.4	5.2	5.21	HCI-68*	10.5	6.2	6.04	4.75	5.30

NOTES:

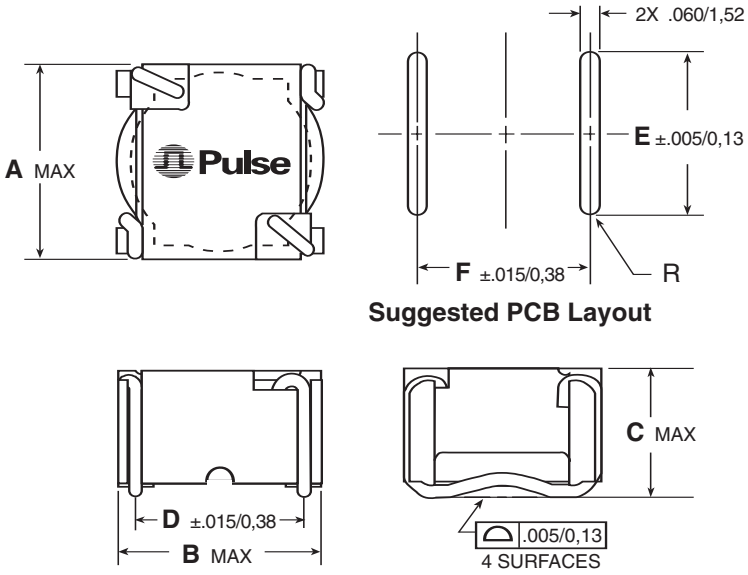
1. Reference values are for an inductor with a 55°C temperature rise. The core loss is 10% of the copper loss at the ET listed and 500 KHz.
2. Core does not saturate abruptly. The ET and DC current are limited by the desired inductance and temperature rise.
3. The temperature rise is directly proportional to the total watts loss (I^2R plus core loss). The core loss (mW/cc) equals $9.07 \times 10^{-10} f^{1.26} B^{2.11}$. B is the operating flux density (Gauss) due to ripple voltage and f is the operating frequency (Hertz) of the ripple current.
4. Optional 13" Tape & Reel packaging can be ordered by adding a "T" suffix to the part number, (i.e. PE-53600**T**).

SURFACE MOUNT INDUCTORS
SELF-LEADED

Mechanical Information

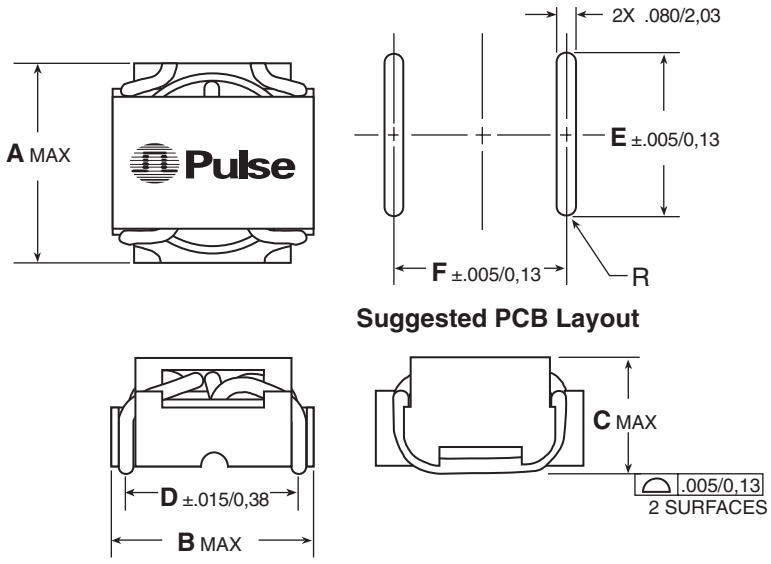
Mechanicals

Low Current Inductors (LCI)



PKG	A	B	C	D	E	F
LCI-20	.340 8,64	.340 8,64	.270 6,86	.260 6,60	.300 7,62	.270 6,86
LCI-30	.435 11,05	.440 11,18	.360 9,14	.350 8,89	.400 10,16	.360 9,14
LCI-37	.560 14,22	.565 14,35	.360 9,14	.450 11,43	.520 13,21	.460 11,68
LCI-44	.590 14,99	.615 15,62	.390 9,91	.500 12,70	.550 13,97	.500 12,70
LCI-50	.670 17,02	.700 17,78	.390 9,91	.580 14,73	.620 15,75	.590 14,99

High Current Inductors (HCI)



PKG	A	B	C	D	E	F
HCI-37	.615 15,62	.600 15,24	.370 9,40	.500 12,70	.440 11,18	.500 12,70
HCI-44	.665 16,89	.665 16,89	.390* 9,91	.560 14,22	.490 12,45	.570 14,48
HCI-50	.740 18,80	.740 18,80	.390* 9,91	.630 16,00	.560 14,22	.640 16,26
HCI-68	.940 23,88	.940 23,88	.390* 9,91	.820 20,83	.700 17,78	.830 21,08

* Dimension "C" is .400/10,16 for the marked models because of heavier wire gage.

Dimensions: Inches / mm

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

LOW PROFILE SELF-LEADED SMT DUAL INDUCTORS

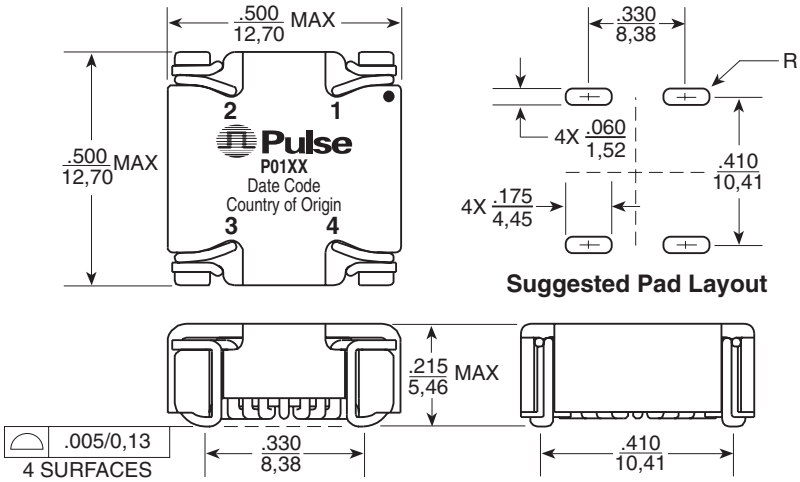
- Materials meet UL 94V-0 rating
- Frequency range of up to 1 MHz
- Can be used as a simple inductor, 1:1 coupled inductor, or 1:1 transformer

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

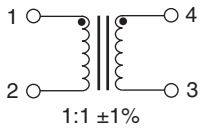
ID		Reference Values			Control Values		Calculation Data	
Part Number	Hookup	I_{DC} (A)	L @ DC L_{DC} (µH)	ET (V-µsec)	L w/o DC L_0 ±20% (µH)	DCR (MAX) (mΩ)	100 Gauss ET_{100} (V-µsec)	1 Amp DC H_1 (Orsted)
P0183	Series	0.61	336.7	92.43	364.0	1295	15.66	70.59
P0182	Series	0.74	245.3	81.70	270.2	897	13.50	60.82
P0181	Series	0.90	170.3	68.99	190.3	603	11.33	51.05
P0180	Series	1.08	117.3	57.00	131.0	424	9.40	42.36
P0183	Parallel	1.22	84.2	46.22	91.0	324	7.83	35.30
P0179	Series	1.32	79.0	46.90	88.2	265	7.71	34.75
P0182	Parallel	1.48	61.3	40.85	67.5	224	6.75	30.41
P0178	Series	1.56	56.2	39.46	62.8	181	6.51	29.32
P0181	Parallel	1.80	42.6	34.49	47.6	151	5.66	25.52
P0177	Series	1.92	37.3	32.25	41.7	119	5.30	23.89
P0180	Parallel	2.16	29.3	28.50	32.8	106	4.70	21.18
P0176	Series	2.60	20.0	23.43	22.1	76.0	3.86	17.38
P0179	Parallel	2.64	19.7	23.45	22.1	66.3	3.86	17.38
P0178	Parallel	3.12	14.1	19.73	15.7	45.3	3.25	14.66
P0175	Series	3.60	9.6	15.62	10.4	43.6	2.65	11.95
P0177	Parallel	3.84	9.3	16.12	10.4	29.8	2.65	11.95
P0174	Series	4.15	7.8	14.61	8.6	30.3	2.41	10.86
P0176	Parallel	5.20	5.0	11.72	5.5	19.0	1.93	8.69
P0175	Parallel	7.20	2.4	7.81	2.6	10.9	1.33	5.97
P0174	Parallel	8.30	2.0	7.31	2.2	7.6	1.20	5.43

NOTES:
1. The reference inductance at rated DC current is a typical value.
2. Temperature rise is 50°C in typical buck or boost circuits at 250 KHz and with the reference ET applied to the inductor.
3. Total loss in the inductor is 380 mWatts for a 50°C temperature rise above ambient.
4. To estimate temperature rise in a given application, determine copper and core losses, divide by 380 and multiply by 50.
5. For the copper loss, calculate $I_{DC}{}^2 X R_N$.
6. For core loss, using frequency (f) and operating flux density (B), calculate $6.11 \times 10^{-18} \times B^{2.7} \times f^{2.04}$.
7. For flux density (B), calculate ET (V-µsec) for the application, divide by ET_{100} from the table, and multiply by 100.
8. Limit the DC bias (H) to 46 orsteds. Calculate H by multiplying H_1 from the table by I_{DC} of the application.
9. The maximum DCR listed is approximately 17% over the nominal DCR.
10. Add suffix **"T"** to part number for tape and reel package (i.e. P0183**T**).

Mechanical



Schematic



Weight . . . . . 1.5 grams
Tape & Reel. 500/reel
Tube 40/tube

Dimensions: Inches / mm
Unless otherwise specified, all tolerances are ± .010 / 0,25

SELF-LEADED SMT DUAL INDUCTORS

Pulse
A TECHNITROL COMPANY

- Materials meet UL 94V-0 rating
- Frequency range of up to 1 MHz
- Can be used as a simple inductor, 1:1 coupled inductor, or 1:1 transformer

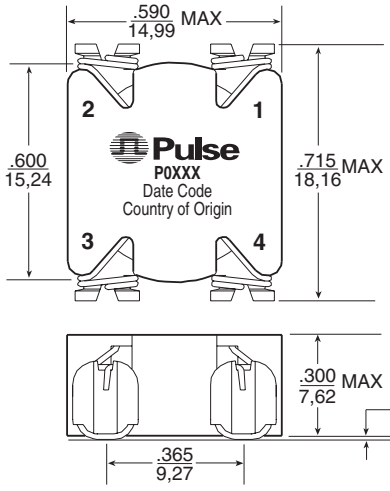
Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

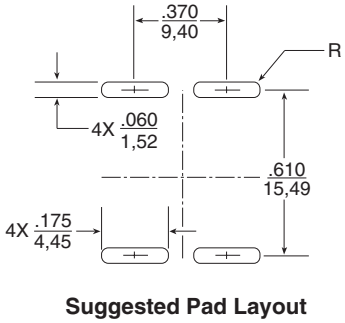
ID		Reference Values				Control Values		Calculation Data	
Part Number	Hookup	I_{DC} (amp)	L @ DC L_{DC} (µH)	ET (V-µsec)	Storage Capacity (µJoules)	$L_{W/O}$ DC L_0 ±20% (µH)	DCR (TYP) (mΩ)	100 Gauss ET_{100} (V-µsec)	1 Amp DC H_1 (Orsted)
P0403	Series	1.50	139.1	45.00	156.47	202.2	295.60	16.26	35.78
P0402	Series	1.77	108.0	41.00	169.14	161.8	212.80	14.55	32.01
P0401	Series	2.20	72.0	33.00	174.26	109.8	152.60	11.98	26.36
P0400	Series	2.70	48.5	27.70	176.62	74.1	93.00	9.84	21.66
P0399	Series	2.85	30.6	20.50	124.18	40.5	84.00	7.27	16.01
P0403	Parallel	3.00	34.8	22.50	156.47	50.5	73.89	8.13	17.89
P0398	Series	3.40	23.1	18.10	133.80	31.5	59.70	6.42	14.12
P0402	Parallel	3.54	27.0	20.50	169.14	40.5	53.21	7.27	16.01
P0397	Series	4.10	17.0	15.70	142.57	23.7	41.90	5.56	12.24
P0401	Parallel	4.40	18.0	16.50	174.26	27.4	38.15	5.99	13.18
P0400	Parallel	5.40	12.1	13.85	176.62	18.5	23.24	4.92	10.83
P0396	Series	5.60	9.7	12.00	152.83	14.0	26.20	4.28	9.42
P0399	Parallel	5.70	7.6	10.25	124.18	10.1	20.99	3.64	8.00
P0398	Parallel	6.80	5.8	9.05	133.80	7.9	14.94	3.21	7.06
P0395	Series	7.20	6.1	9.60	159.01	9.0	17.60	3.42	7.53
P0397	Parallel	8.20	4.2	7.85	142.57	5.9	10.47	2.78	6.12
P0396	Parallel	11.20	2.4	6.00	152.83	3.5	6.54	2.14	4.71
P0395	Parallel	14.40	1.5	4.80	159.01	2.2	4.41	1.71	3.77

NOTES:

1. The reference inductance is a typical value at the AC and DC excitation listed.
2. Temperature rise is 55°C in typical buck or boost circuits at 100 KHz and with the reference ET applied to the inductor.
3. Total loss in the inductor is 634 mWatts for a 55°C temperature rise above ambient.
4. To estimate temperature rise in a given application, determine copper and core losses, divide by 634 and multiply by 50.
5. For the copper loss, calculate $I_{DC}{}^2 X R_N$.
6. For core loss (mW), using frequency (f in Hertz) and operating flux density (B in Gauss), calculate $2.24 \times 10^{-10} \times B^{2.11} \times f^{1.26}$.
7. For flux density (B), calculate ET (V-µsec) for the application, divide by ET_{100} from the table, and multiply by 100.
8. For estimating L with DC current, calculate H by multiplying H_1 from the table by I_{DC} of the application. Using H, determine the DC perm Factor (F_{UDC}). Multiply $L_{W/O}$ DC by F_{UDC} for L @ DC.
9. Add suffix **"T"** to part number for tape and reel package (i.e. P0395**T**).

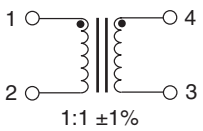
Mechanical





Suggested Pad Layout

Schematic



Weight . . . . . 4.2 grams
Tape & Reel. 300/reel
Tube 35/tube

Dimensions: Inches / mm

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

HIGH AND LOW CURRENT COUPLED INDUCTORS

Pulse
A TECHNITROL COMPANY

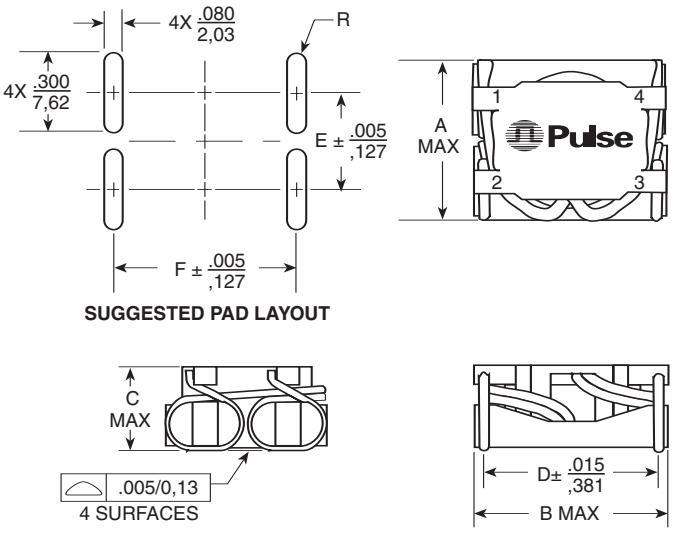
- Materials meet UL 94V-0 rating
- Self-leaded, surface mount
- Frequency range up to 1 MHz

Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C

Part Number	I_{DC} (Amps)	$L_{W/DC}$ (µH)	ET (V-µ sec)	Size Code	$L_{W/oDC}$ (µH ± 20%)	Max DCR (mΩ)
PE-53361	23.8	.53	1.00	HCCI-44	.88	6.0
PE-53362	21.0	1.10	1.75	HCCI-50	2.10	5.0
PE-53363	22.4	2.10	3.25	HCCI-68	4.00	6.8
PE-53717	1.1	43.6	7.83	LCCI-37	77.0	309
PE-53718	2.7	21.9	6.90	LCCI-44	39.5	90.5
PE-53719	6.4	4.025	3.135	LCCI-50	6.575	23

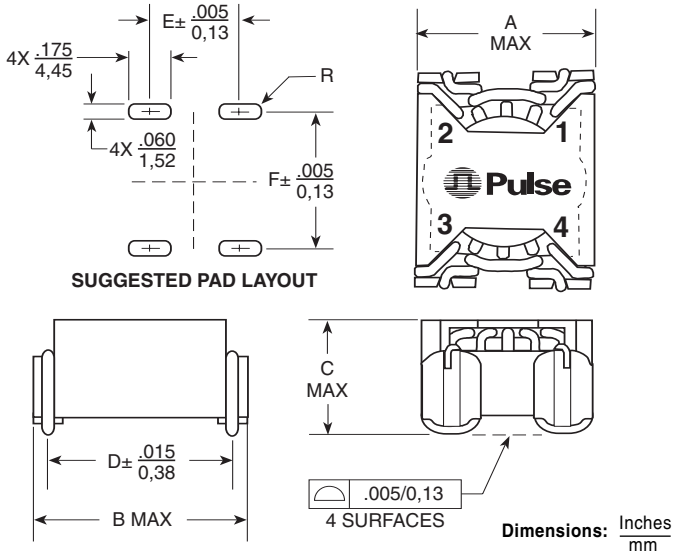
Mechanicals

HCCI



SUGGESTED PAD LAYOUT

LCCI



SUGGESTED PAD LAYOUT

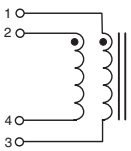
Dimensions: Inches / mm

Size Codes

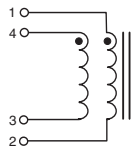
	HCCI-44	HCCI-50	HCCI-68	LCCI-37	LCCI-44	LCCI-50
A	.715/18,16	.800/20,32	1.000/25,40	.560/14,22	.590/14,99	.670/17,02
B	.865/21,97	.910/23,11	1.110/28,19	.645/16,38	.715/18,16	.770/19,56
C	.390/9,91	.390/9,91	.395/10,03	.350/8,89	.390/9,91	.390/9,91
D	.760/10,30	.800/20,32	1.000/25,40	.520/13,21	.600/15,24	.650/16,51
E	.360/9,14	.440/11,18	.620/15,75	.340/8,64	.370/9,40	.445/11,30
F	.770/19,56	.810/20,57	1.010/25,65	.530/13,46	.610/15,49	.660/16,76

Schematics

HCCI



LCCI



HIGH CURRENT SELF-LEADED SMT INDUCTORS

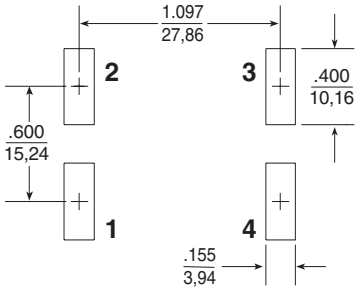
Pulse
A TECHNITROL COMPANY

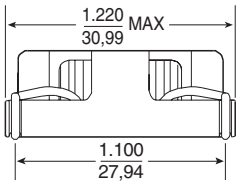
- Materials meet UL 94V-0 rating
- Frequency range of up to 1 MHz
- Can be used in series, parallel or as a 1:1 coupled inductor

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

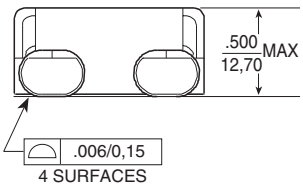
ID		Reference Values				Control Values		Calculation Data
Part Number	Hookup	I_{DC} (amp)	L @ DC L_{DC} (µH)	ET (V-µsec)	Storage Capacity (µJoules)	L w/o DC L_0 ±15% (µH)	DCR (MAX) (mΩ)	ET_{100} (V-µsec)
P0595	Series	9.5	18.10	18.0	816	38.00	16.8	7.22
P0596	Series	12.0	12.80	8.4	922	28.68	12.0	8.33
P0597	Series	13.5	9.80	12.0	893	20.40	8.8	9.84
P0598	Series	17.0	6.40	8.4	919	13.80	5.6	12.03
P0595	Parallel	19.0	4.52	9.0	816	9.50	4.2	14.43
P0599	Series	19.0	4.30	8.4	780	8.40	4.4	15.46
P0596	Parallel	24.0	3.20	4.2	922	7.17	3.0	16.65
P0597	Parallel	27.0	2.45	6.0	893	5.10	2.2	19.68
P0598	Parallel	34.0	1.60	4.2	919	3.45	1.4	24.05
P0599	Parallel	38.0	1.10	4.2	780	2.10	1.1	30.92

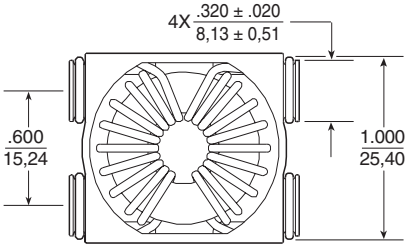
Mechanical





SUGGESTED PAD LAYOUT





Weight . . . . . 18.7 grams
Tape & Reel. 75/reel
Tube 20/tube

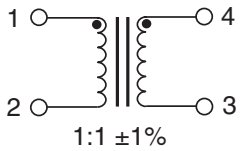
Dimensions: Inches / mm

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

NOTES:

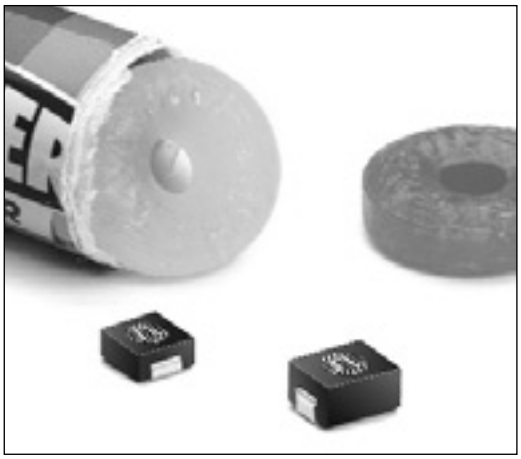
1. Temperature rise is 55°C in typical buck or boost circuits operating at 300 KHz with the rated Idc current and reference ET applied to the inductor.
2. Total loss in the inductor is 1.8 watts for 55°C temperature rise above ambient.
3. To estimate temperature rise in a given application, determine total losses (copper losses + core losses) and apply this formula: TempRise (C) = (Total Losses(W))$^{.833}$ x 33.783
4. For copper losses, calculate: CopperLoss(mW) = Idc^2 x DCR
5. For core loss, using frequency (f: hertz) and flux density (B: gauss): CoreLoss(mW) = 1.0769E-09 * f$^{1.26}$ x B$^{2.11}$
6. For flux density (B), calculate ET (V-µsec) for the application, and multiply by the ET_{100} factor from the table.
7. Add suffix **"T"** to part number for tape and reel package (i.e. P0595**T**).

Schematic



SMT POWER INDUCTORS
For Use with Volterra's Chipset

Pulse
A TECHNITROL COMPANY



- **Two package sizes**
- **Height:** .125" and .177" Max
- **Footprint:** .276" x .250" and .340" x .250" Max
- **Current Range:** up to 15 Arms
- **Typical Energy Storage Density:** 1450 µJ/in^3
- **Frequency Range:** 300 kHz to 2 MHz

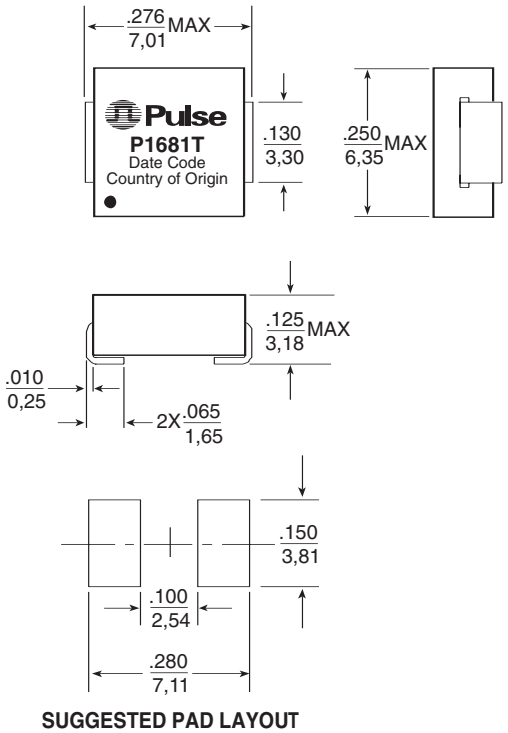
Electrical Specifications @ 25°C — Operating Temperature -40°C to 125°C

Part Number	Inductance @Irated (nH ± 20%)	Irated[1] (ADC)	DCR (mΩ)		Inductance @0ADC (nH ± 20%)	Saturation Current [2] (A)			Heating Current [3] (A)	Trise Factor K0 [4] (cm^2)	Core Loss [4]	
			Typical	Max		-40°C	25°C	125°C			Factor K1	Factor K2
P1681T	95	15	.31	.39	100	18.2	18	16.2	15	1.0032	.00319	.07381
P2005T	142.5	15	.45	.56	150	18.2	18	16.2	15	2.2458	.00638	.05961
P2004T	190	15	.45	.56	200	17	16.8	15.12	15	2.2458	.00638	.07949

Mechanicals

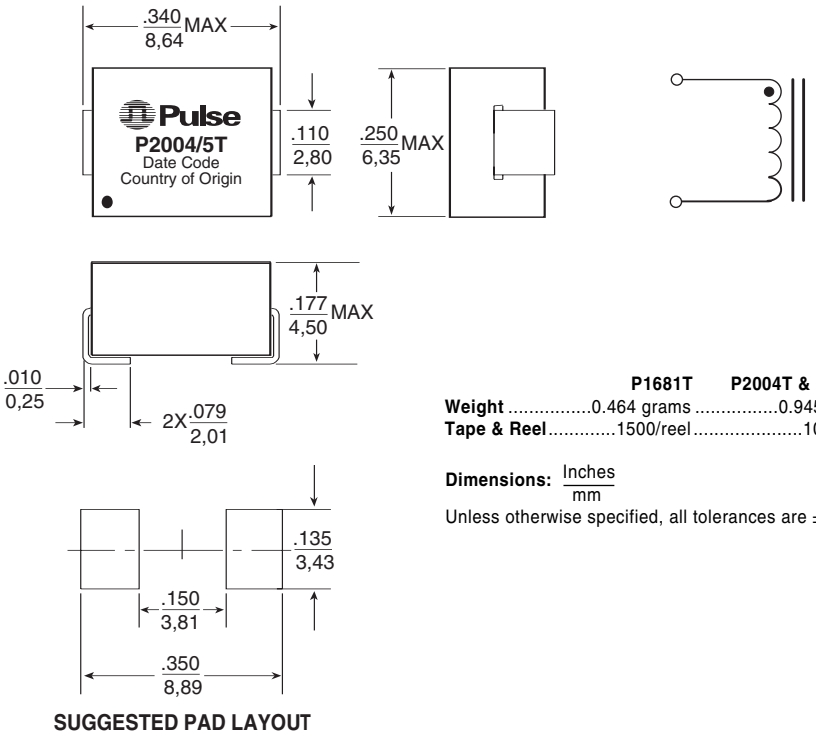
Schematic

P1681T (Volta 1)



SUGGESTED PAD LAYOUT

P2004T/P2005T (Volta 2)



SUGGESTED PAD LAYOUT

	P1681T	P2004T & P2005T
Weight	0.464 grams	0.945 grams
Tape & Reel	1500/reel	1000/reel

Dimensions: Inches / mm

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

Notes from Tables

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 by 10% at the stated ambient temperatures (-40°C, 25°C, 125°C). This current is determined by placing the component in the specified ambient environment 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 approximately 30°C. This current is determined by mounting the component on a PCB with .25" wide, 3 oz. equivalent copper traces, and applying the current to the device for 30 minutes.
4. In high volt*time applications, additional heating in the component can occur due to core losses in the inductor which may neccessitate derating the current in order to limit the temperature rise of the component. In order to determine the approximate total losses (or temperature rise) for a given application both copper losses and core losses should be taken into account.

Estimated Temperature Rise:

$$\textbf{Trise} = \left[\frac{Coreloss\ (mW) + DCRloss\ (mW)}{K0}\right]^{.833} (°C)$$

$$\textbf{Coreloss} = K1 * \left(Fsw(kHz)\right)^{1.6688} * (K2 * dI)^{2.17}\ (mW)$$

$$\textbf{DCRloss} = Irms^2 * DCR(m\Omega)\ \ (mW)$$

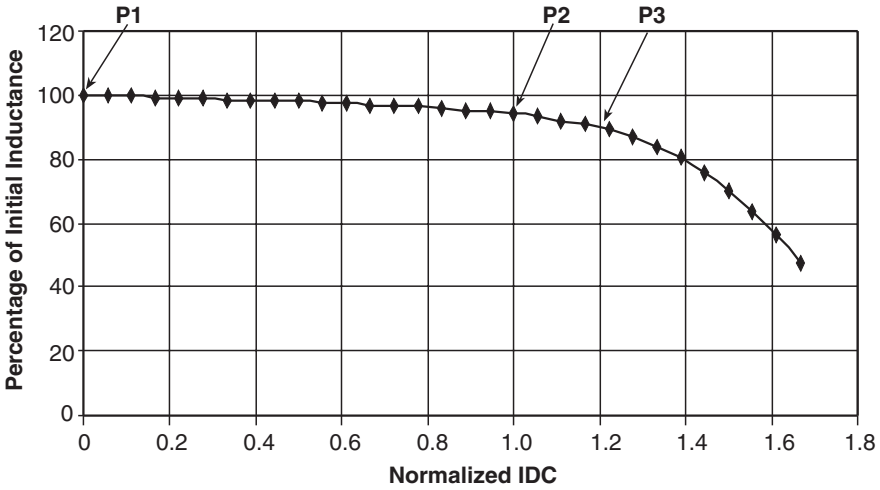
$$\textbf{Irms} = \left[IDC^2 + \left[\frac{dI}{2}\right]^2\right]^{1/2} (Arms)$$

$$\textbf{Fsw(kHz)} = switching\ frequency\ (kHz)$$

$$\textbf{dI} = delta\ I\ across\ the\ component\ (A)$$

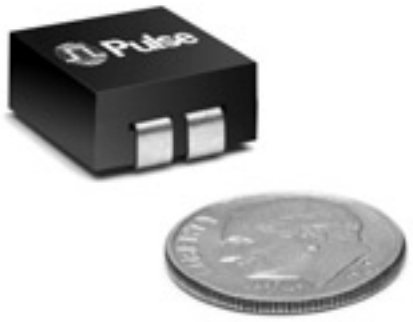
The temperature of the component (ambient temperature + temperature rise) should be within the listed operating temperature range.

Inductance vs Current Characteristics



P1 - Initial Inductance, Lo (.1Vrms, 1MHz, 0ADC, 25C)
P2 - Inductance (typically 95% Lo) at Rated IDC.
P3 - Inductance (typically 90% Lo) at Ipk.

SMT POWER INDUCTORS
Volta-5 Series



- **Height:** .280" Max
- **Footprint:** .51" x .51"
- **Current Range:** up to 40 Arms
- **Typical Energy Storage:** 120 µJ
- **Typical Energy Storage Density:** 2640 µJ/in^3
- **Frequency Range:** 100 kHz to 2 MHz

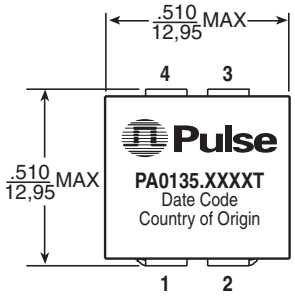
Electrical Specifications @ 25°C — Operating Temperature -40°C to +125°C

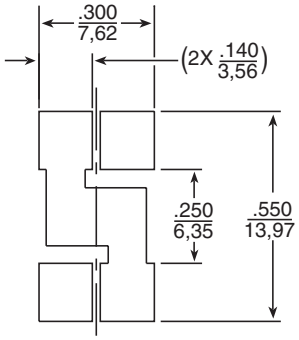
Part Number	Hookup	Inductance @ Irated (nH ±20%)	Irated[1] (ADC)	DCR (mΩ TYP)	DCR (mΩ MAX)	Inductance @ 0 ADC (nH ±20%)	Saturation Current[2] @ -40°C(A)	Saturation Current[2] @ 25°C(A)	Saturation Current[2] @ 125°C(A)	Heating Current[3] (A)	Trise[4] (Factor K0)	Core Loss[4] (Factor K1)	Core Loss[4] (Factor K2)	Outline & PCB Layout
PA0135.331T	Series	297	20	.74	.90	330.0	40+	40+	32	20	6.38037	0.02566	0.03094	Fig. 1
PA0135.331T	Parallel	74	40	.18	.225	82.5	40+	40+	40+	40	6.38037	0.02566	0.01547	Fig. 2
PA0135.471T	Series	423	20	.74	.90	470.0	37	35	26	20	6.38037	0.02566	0.04407	Fig. 1
PA0135.471T	Parallel	105	40	.18	.225	117.5	40+	40+	40+	40	6.38037	0.02566	0.02204	Fig. 2
PA0135.681T	Series	612	19	.74	.90	680.0	26	25	19	20	6.38037	0.02566	0.06377	Fig. 1
PA0135.681T	Parallel	153	34	.18	.225	170.0	40+	40+	34	40	6.38037	0.02566	0.03188	Fig. 2
PA0135.102T	Series	900	14	.74	.90	1000.0	19	18	14	20	6.38037	0.02566	0.09377	Fig. 1
PA0135.102T	Parallel	225	24	.18	.225	250.0	36	35	24	40	6.38037	0.02566	0.04689	Fig. 2

Mechanical

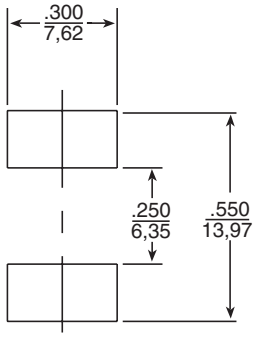
Schematic

PA0135.XXXXT

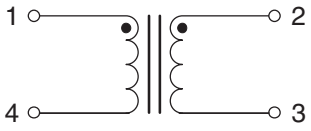


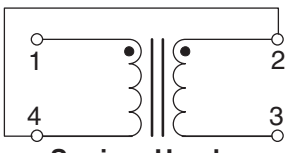


SUGGESTED PAD LAYOUT
(Series Configuration)

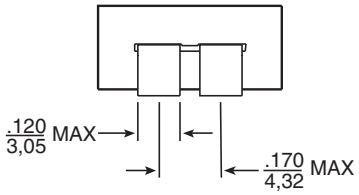


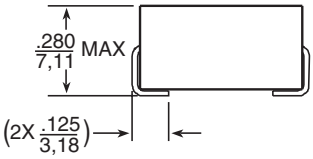
SUGGESTED PAD LAYOUT
(Parallel Configuration)





Series Hookup

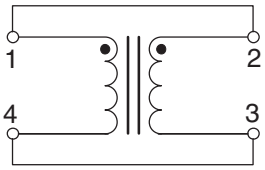




Weight . . . . . 4.15 grams
Tape & Reel. 500/reel

Dimensions: Inches / mm

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



Parallel Hookup

Notes from Tables

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 by 10% at the stated ambient temperatures (-40°C, 25°C, 125°C). This current is determined by placing the component in the specified ambient environment 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 approximately 40°C. This current is determined by mounting the component on a PCB with .25" wide, 2 oz. equivalent copper traces, and applying the current to the device for 30 minutes. In the series hookup mode, the resistance of the interconnection needs to be taken into account when calculating temperature rise.
4. In high volt*time applications additional heating in the component can occur due to core losses in the inductor which may neccessitate derating the current in order to limit the temperature rise of the component. In order to determine the approximate total losses (or temperature rise) for a given application both copper losses and core losses should be taken into account.

Estimated Temperature Rise:

$$\textbf{Trise} = \left[\frac{\text{Coreloss (mW)} + \text{DCRloss (mW)}}{K0}\right]^{.833} \text{(°C)}$$

$$\textbf{Coreloss} = K1 * \left(Fsw(kHz)\right)^{1.6688} * (K2 * dI)^{2.17} \text{ (mW)}$$

$$\textbf{DCRloss} = Irms^2 * DCR(m\Omega) \text{ (mW)}$$

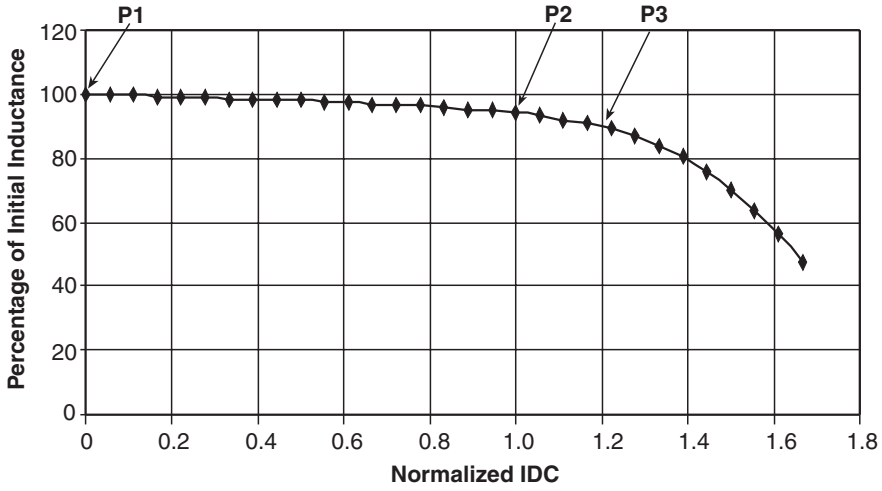
$$\textbf{Irms} = \left[IDC^2 + \left[\frac{dI}{2}\right]^2\right]^{½} \text{(Arms)}$$

Fsw(kHz) = switching frequency (kHz)

dI = delta I across the component (A)

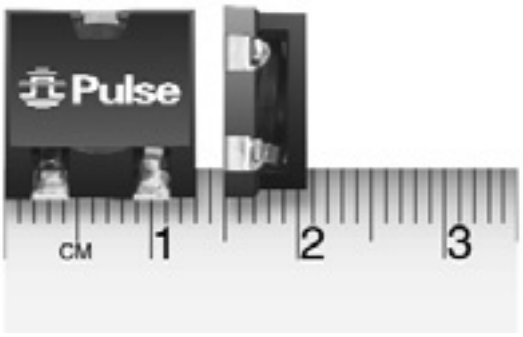
The temperature of the component (ambient temperature + temperature rise) should be within the listed operating temperature range.

Inductance vs Current Characteristics



P1 - Initial Inductance, Lo (.1Vrms, 300 kHz, 0ADC, 25C)
P2 - Inductance (typically 95% Lo) at Rated IDC.
P3 - Inductance (typically 90% Lo) at Ipk.

SMT POWER INDUCTORS
Flat Coil Series



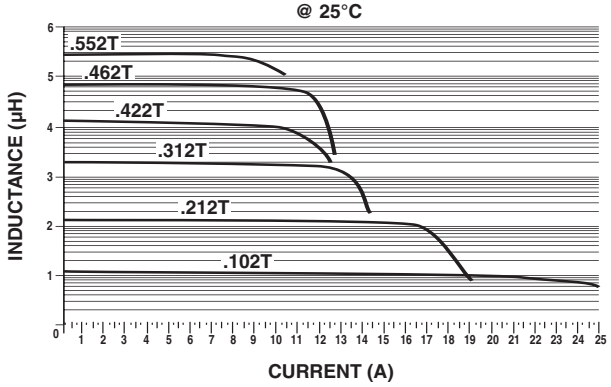
- Low profile and suitable for compact surface area mounting
- Large permissible DC current
- Low DC resistance
- Robust design

Electrical Specifications @ 25°C — Operating Temperature -40°C to 100°C

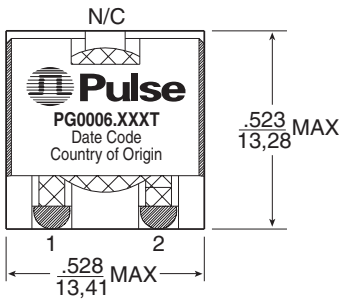
Part Number	Reference Values			Control Values	
	I_{SAT} [1] (A)	L @ I_{SAT}, L_{SAT} [2] (µH)	I_{DC} [3] (A)	L w/o DC, L_0 ±20% (µH)	DCR MAX (mΩ)
PG0006.102T	20	0.90	15.0	1.0	1.75
PG0006.212T	15	1.89	12.0	2.1	3.60
PG0006.312T	12	2.79	9.0	3.1	7.50
PG0006.422T	10	3.78	8.5	4.2	7.50
PG0006.462T	9	4.14	8.0	4.6	10.40
PG0006.552T	8	4.95	7.5	5.5	12.40

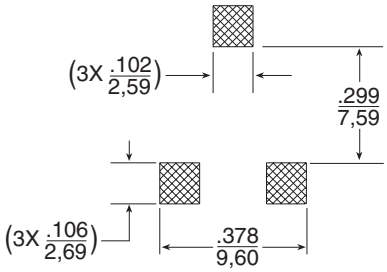
NOTES:
1. I_{SAT} value is the current that will make inductance drop by ≤10%.
2. L_{SAT} value is a typical inductance value, once the inductor is subjected to I_{SAT}.
3. I_{DC} is the current that will make a temperature rise (Δt) of <40°C.
4. All measurements are done at room temperature (25°C), 100 kHz, 250 mV.

TYPICAL INDUCTANCE VS. DC BIAS
@ 25°C

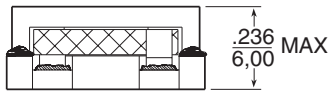


Mechanical

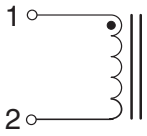


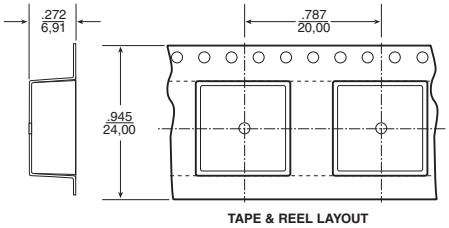


SUGGESTED PAD LAYOUT



Schematic





TAPE & REEL LAYOUT

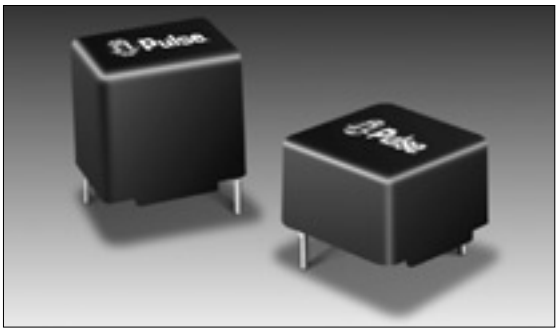
Weight . . . . . 3.0 grams
Tape & Reel. 340/reel

Dimensions: Inches / mm

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

STANDARD LOW POWER INDUCTORS

Switch Mode Power Converters and Ripple Filters



- Designed for general purpose use
- High inductance stability with varying volt-seconds and load currents
- Compact, standard packages
- Low profile or vertical packages

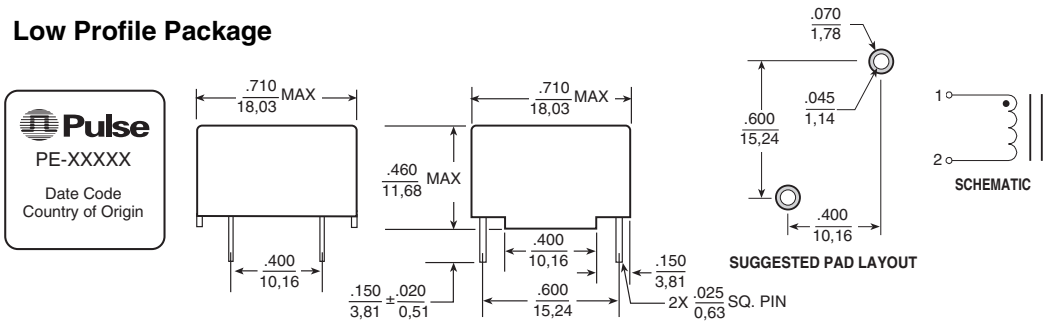
Electrical Specifications @ 25°C — Operating Temperature -30°C to 130°C

		Reference Operating Values				Design Control Values		
Low Profile Part Number	Vertical Part Number	Inductance Typical (µH)	I_{DC} (AMPS)[1]	Maximum ET_{OP}[2] (V-µSec)	Energy Storage (µJ)[1]	Inductance No DC (µH ± 20%)	20 KHz Test mV No DC	DCR (Ω MAX)
PE-52625	PE-52645	150	1.7	80	215	145	110	.42
PE-52626	PE-52646	220	1.5	90	240	226	140	.42
PE-52627	PE-52647	330	1.0	100	165	316	170	.78
PE-52628	PE-52648	470	.90	120	190	480	210	1.26
PE-52629	PE-52649	680	.85	175	245	690	250	1.50
PE-52630	PE-52650	820	.75	175	230	780	270	2.40
PE-52631	PE-52651	1000	.50	175	125	975	300	2.60

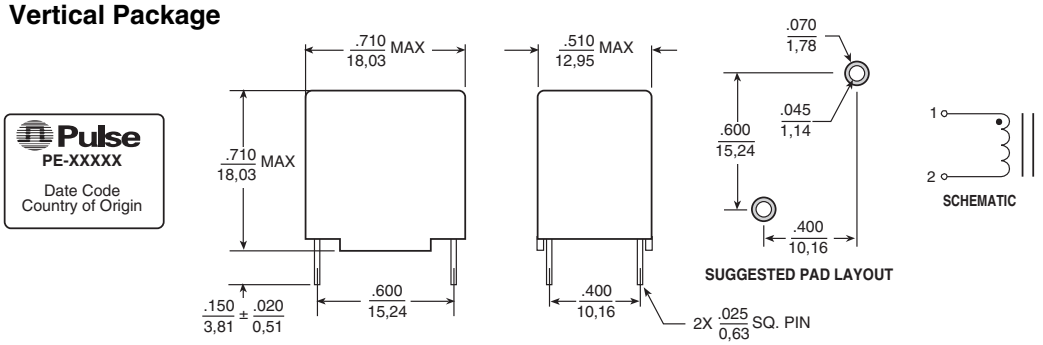
NOTES: 1. I_{DC} rated for 40°C Temperature rise @ low ET_{OP}. 2. Derate current 20% at this ET_{OP}.

Mechanicals

Low Profile Package



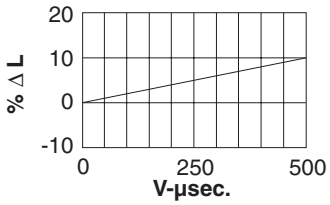
Vertical Package



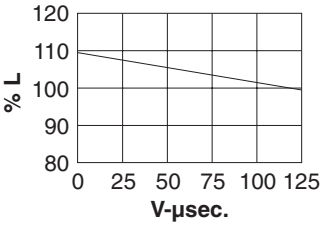
Unless otherwise specified, all tolerances are ± .010 / 0,25

Dimensions: inches / mm

Inductance Characteristics

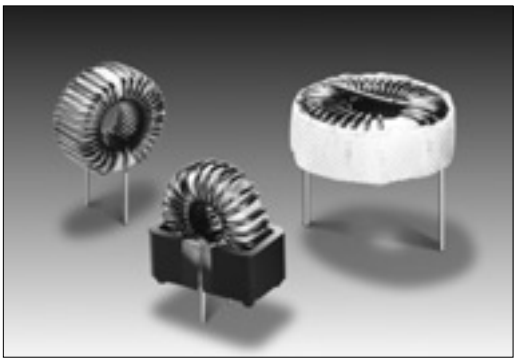


Inductance Variance vs. E.T.



Inductance Variance vs. Load Current

LOW COST INDUCTORS
Electrical Information



- Available in vertical, low profile and *Klipmount™*
- SMPS averaging filter
- Characterized for general purpose use and ripple filters
- Single-layer designs
- Can be used as differential mode inductors in EMI filters[3]

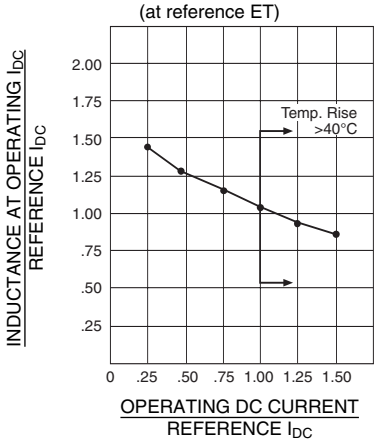
Electrical Specifications @ 25°C — Operating Temperature -30°C to 130°C

		Reference Operating Values				Design Control Values					
Vertical Part Number	Low Profile Part Number	Inductance Typical (µH)[1]	I_{DC} (AMPS)	ET_{OP} (V-µSec)	Energy Storage (µJ)[4]	Inductance No DC (µHy) ±20%	20 KHz Test mV No DC[2]	DCR (Ω MAX)[5]	Coil Size Code	Klip Mount Package*	Lead Diameter (In) ±.003
PE-51591	—	20	2.0	52	40	32.8	33	.060	H	—	.020
PE-92100	—	25	2.6	30	85	20.7	22	.043	A	KM1	.020
PE-92101	**PE-92401**	50	2.6	50	169	45.7	45	.071	B	KM2	.020
PE-92102	**PE-92402**	100	2.6	90	338	94.1	90	.100	C	KM3	.020
PE-92103	—	35	2.6	55	118	28.4	36	.037	B	KM2	.025
PE-92104	**PE-92404**	70	3.0	85	315	61.0	73	.052	C	KM3	.025
PE-92105	**PE-92405**	145	3.0	140	653	141.8	140	.087	D	KM4	.025
PE-92106	—	285	3.0	300	1283	264.1	340	.140	E	KM5	.025
PE-92107	—	450	3.0	425	2025	436.3	500	.200	F	—	.025
PE-92108	**PE-92408**	67	3.6	130	648	90.7	110	.045	D	KM4	.032
PE-92109	—	165	4.0	240	1320	152.0	260	.070	E	KM5	.032
PE-92110	—	270	4.0	350	2160	263.9	400	.100	F	—	.032
PE-92111	—	40	4.0	70	320	37.9	57	.027	C	KM3	.032
PE-51590	—	22	5.0	44	275	20.3	37	.020	G	—	.032
PE-92112	**PE-92412**	100	5.0	200	1250	90.7	180	.034	E	KM5	.042
PE-92113	—	170	5.0	300	2125	159.7	310	.050	F	—	.042
PE-92114	**PE-92414**	55	5.0	100	688	54.9	88	.023	D	KM4	.042
PE-92115	—	95	7.0	225	2328	96.0	200	.025	F	—	.051
PE-92116	**PE-92416**	55	7.0	150	1348	49.1	100	.017	E	KM5	.051
PE-92117	—	55	10.0	175	2750	55.9	120	.013	F	—	.064

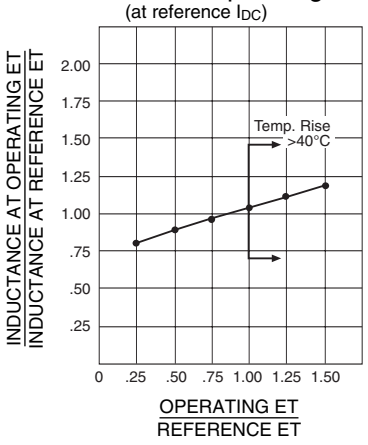
*Parts available with ***KlipMount*** option can be ordered by adding a "K" suffix to the part number (i.e. PE-92100**K**).

Relationships Between Reference and Operating Conditions

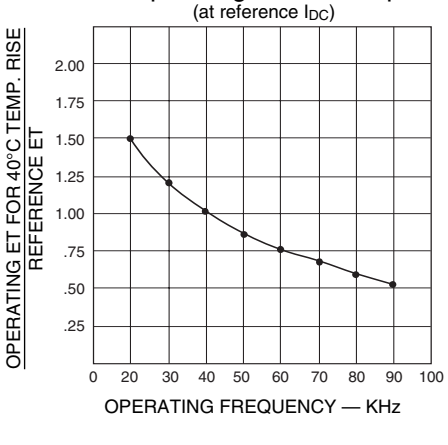
Inductance vs. DC Current
(at reference ET)



Inductance vs. Operating ET
(at reference I_{DC})



Max. Operating ET vs. Frequency
(at reference I_{DC})



LOW COST INDUCTORS
Mechanical Information

Mechanicals

- Base material meets flammability requirements of UL 94V-0
- Mechanically rigid mount
- PC board — automatic insertability
- Lowest cost

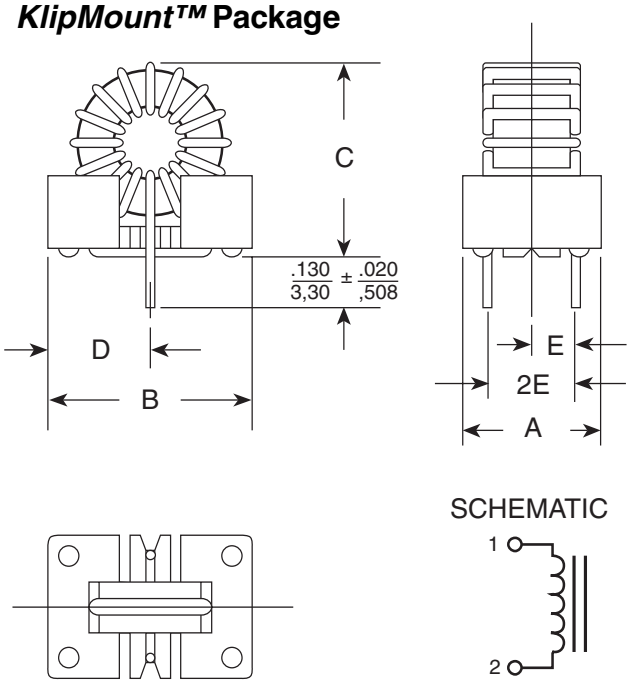
Standard Package	A	B	C	D	E
	Nom. ± .005/0,13		Nom.	Typical	
KM-1	.340 / 8,64	.580 / 14,73	.650 / 16,51	.29 / 7,37	.110 / 2,79
KM-2	.450 / 11,43	.650 / 16,51	.700 / 17,78	.325 / 8,26	.150 / 3,81
KM-3	.450 / 11,43	.830 / 21,08	.950 / 24,13	.415 / 10,54	.150 / 3,81
KM-4	.610 / 15,50	.970 / 24,64	1.10 / 27,94	.475 / 12,07	.225 / 5,72
KM-5	.700 / 17,78	1.30 / 33,02	1.40 / 35,56	.625 / 15,88	.250 / 6,35

Note: Units with large wire sizes may exceed B dimension.
KLIPMOUNT™ is a trademark of Pulse Engineering, Inc.

Dimensions: Inches / mm

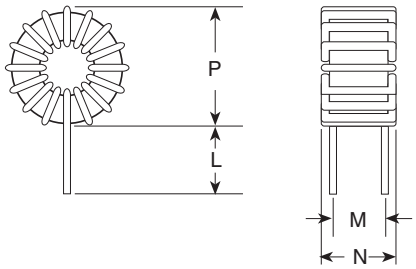
Unless otherwise specified, all tolerances are ± .010 / 0,25

KlipMount™ Package

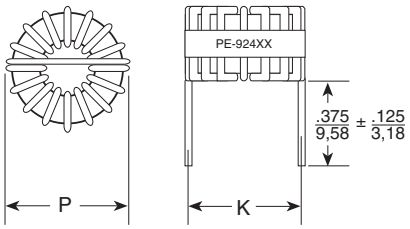


Coil Size	P (MAX)	N (MAX)	L (+.125/-.025)	M	K
A	.550 / 13,97	.250 / 6,35	.375 / 9,53	.180 / 4,57	—
B	.700 / 17,78	.380 / 9,65	.375 / 9,53	.280 / 7,11	.530 / 13,46 ± .050 / 1,27
C	.850 / 21,59	.410 / 10,41	.375 / 9,53	.280 / 7,11	.720 / 18,29 ± .050 / 1,27
D	1.050 / 26,67	.550 / 13,97	.375 / 9,53	.400 / 10,16	.840 / 21,24 ± .020 / 0,51
E	1.400 / 35,56	.700 / 17,78	.375 / 9,53	.500 / 12,7	1.100 / 27,94 ± .100 / 2,54
F	1.650 / 41,91	.700 / 17,78	.375 / 9,53	.500 / 12,7	—
G	.850 / 21,59	.330 / 8,38	.875 / 22,23	.330 / 8,38	—
H	.640 / 16,26	.280 / 7,11	.875 / 22,23	.280 / 7,11	—

Vertical Package



Low Profile Package

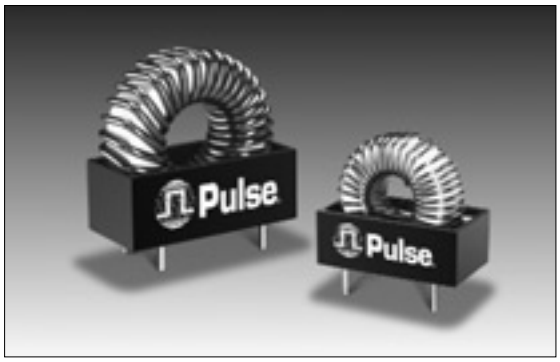


NOTES:

1. Typical Inductance occurs at I_{DC} and ET_{OP} values shown.
2. Design control test voltage critical. Inductance increases with voltage.
3. For line filter applications RMS line current is limited to specified reference DC Current.
4. $\frac{LI^2}{2}$ rating is the ability of the inductor to store energy.
5. DCR for vertical part measured close to coil. Add 10% more for Low Profile part.

TOROIDAL INDUCTORS
HIGH CURRENT

Pulse
A TECHNITROL COMPANY



- Cost-effective designs
- Semi-encapsulated construction
- Maximum operation temperature of 130°C (Ambient + Rise)
- A 2:1 inductance swing from zero to maximum current

Electrical Specifications @ 25°C

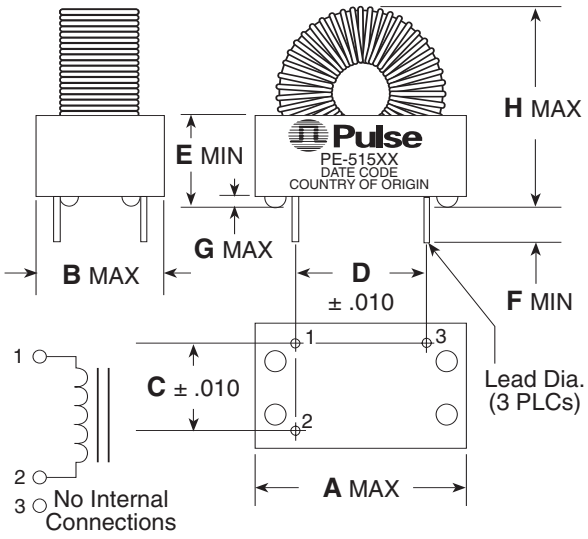
Reference Operating Values						Design Control Values				
Part Number	Inductance Typical (µH)2	I_{DC} (AMPS)	ET_{OP}1 (V-µSec)		Energy Storage (µJ MIN)3	Inductance No DC (µH) (±20%)	50 kHz Test mV No DC5	DCR (Ω MAX)	Size Code	Lead Diameter (in ±.003)
			20 kHz	40 kHz						
PE-51506	17.0	17.0	190	130	2460	40.0	140	0.0065	3	0.081
PE-51507	32.0	16.0	290	200	4100	70.7	270	0.0092	4	0.081
PE-51508	60.0	16.0	390	270	7700	120.0	470	0.012	5	0.081
PE-51509	14.0	10.0	135	95	700	28.5	73	0.009	1	0.057
PE-51510	23.0	11.0	170	120	1400	43.5	130	0.012	2	0.057
PE-51511	43.0	10.0	280	195	2150	85.5	210	0.018	3	0.057
PE-51512	90.0	10.0	430	300	4500	158.0	420	0.028	4	0.057
PE-51513	144.0	10.0	570	400	7200	262.0	700	0.032	5	0.057
PE-51514	32.0	6.6	200	140	700	60.5	110	0.025	1	0.040
PE-51515	52.0	7.0	230	160	1275	92.0	190	0.032	2	0.040
PE-51516	98.0	6.0	400	280	1765	188.0	310	0.048	3	0.040
PE-51517	175.0	6.0	620	425	3150	315.0	560	0.068	4	0.040
PE-51518	335.0	6.0	840	580	6030	571.0	1000	0.095	5	0.040
PE-51520	400	3.6	600	420	2700	688.0	640	0.130	3	0.036

NOTES:

1. To prevent excessive temperature rise, limit ET_{OP} to the rated ET_{OP} specified. This is not a saturation limit. Temperature rise of inductors is 40°C MAX at MAX current and rated ET_{OP}.
2. A 2:1 nominal inductance swing from no I_{DC} to operating I_{DC} gives improved protection against current discontinuities at light loading. Inductance increases with greater ET_{OP}. Reference values occur at I_{DC} and low flux density.
3. $\frac{LI^2}{2}$ rating is the ability of the inductor to store energy.
4. Design control test voltage is critical. Inductance increases with voltage.

Size Code	1	2	3	4	5
A	1.20/30,48	1.44/36,57	1.60/40,64	1.95/49,53	2.30/58,42
B	0.60/15,24	0.80/20,32	0.80/20,32	0.91/23,11	1.11/28,19
C	0.40/10,16	0.60/15,24	0.60/15,24	0.70/17,78	0.90/22,85
D	0.80/20,32	0.90/22,86	0.90/22,86	1.20/30,48	1.50/38,10
E	0.45/11,43	0.70/17,78	0.70/17,78	0.90/22,86	1.00/25,40
F	0.20/5,08	0.20/5,08	0.20/5,08	0.20/5,08	0.20/5,08
G	.015/0,381	0.03/0,76	0.03/0,76	0.03/0,76	0.03/0,76
H	1.20/30,48	1.44/36,57	1.72/43,68	2.00/50,80	2.30/58,42

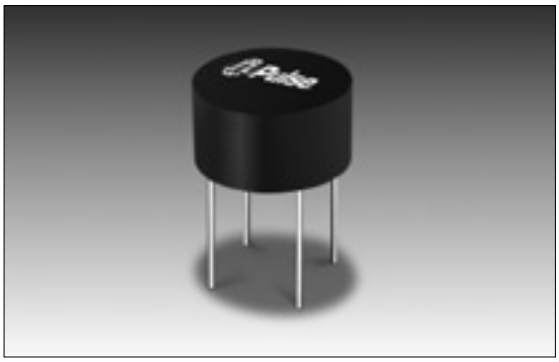
Mechanicals



Dimensions: Inches / mm

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

TOROIDAL INDUCTORS
HIGH INDUCTANCE



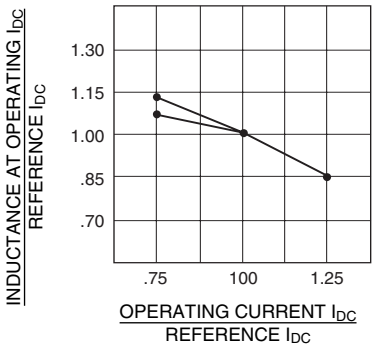
- High frequency, low loss operation (up to 100 kHz)
- Encapsulated construction
- Ambient temperature range of -55°C to +70°C
- Good inductance stability with temperature

Electrical Specifications @ 25°C

	Reference Operating Values				Design Control Values		
Part Number	Inductance Typical (mH)	I_{DC} (AMPS)	Maximum ET_{OP} (V-µSec)	Energy Storage (µJ MIN) [1]	Inductance No DC (mHy) (±20%) [2]	DCR (Ω MAX)	Size Code
PE-50500	0.5	.60	110	90	.72	0.35	7
PE-50501	1.0	.35	160	60	1.51	0.75	7
PE-50502	2.0	.25	225	60	2.88	1.30	7
PE-50503	0.5	1.75	325	765	.72	0.35	8
PE-50506	0.5	2.75	650	1890	.75	0.25	9
PE-50508	2.0	1.50	1200	2250	2.70	0.75	9

NOTES: 1. $\frac{LI^2}{2}$ rating is the ability of the inductor to store energy. 2. Inductance measured at 0.4 Volts and 20 kHz.

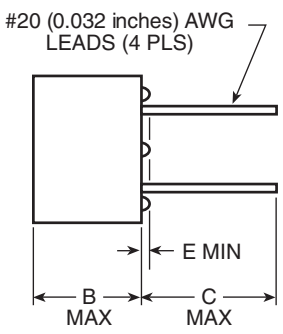
Inductance Variation with I_{DC} Change

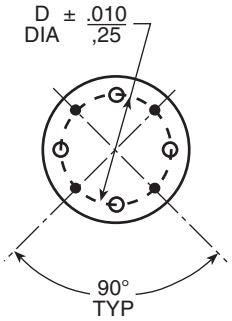


Dimensions: Inches / mm

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

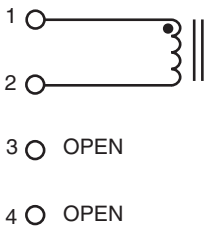
Mechanical

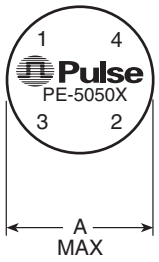




Size Code	A	B	C	D	E
7	.754 / 19,15	.400 / 10,16	.500 / 12,70	.625 / 15,87	0.03 / 0,76
8	1.140 / 28,95	.665 / 16,89	.500 / 12,70	1.00 / 25,40	0.03 / 0,76
9	1.416 / 35,96	.850 / 21,59	.500 / 12,70	1.250 / 13,75	0.03 / 0,76

Schematic





SMT POWER TRANSFORMER
Matched to Linear Technology Chipset

- DC/DC converter for use with Linear Technology LTC 1535 isolated RS485 transceiver
- Compact and cost-effective industrial design: EP7 format
- 500 Vrms isolation

Electrical Specifications @ 25°C — Operating Temperature -0°C to +85°C

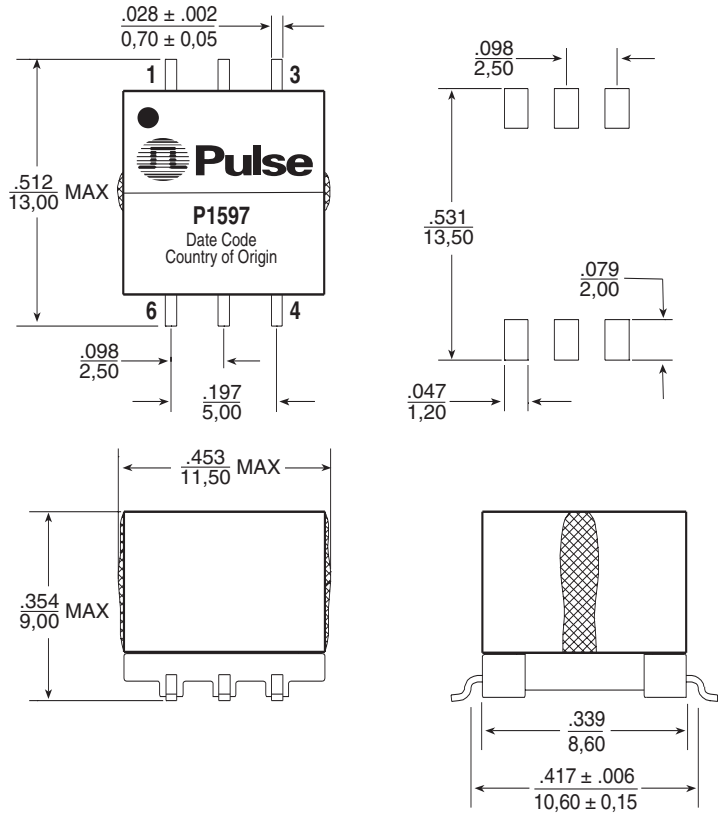
Part Number	Turns Ratio	OCL (@ 25°C) (µH ±30%)	LL (@100 kHz/100 mV) (µH MAX)	Isolation Voltage (Vrms)	Mounting
P1597	1:1.35:1.35	578	0.35	500	SMT

NOTE: Add suffix "**T**" to part number for Tape & Reel package (i.e. P1597**T**).

Mechanical

Schematic

P1597



Weight . . . . . .1.8 grams
Tape & Reel 300/reel
Tube 80/tube
Dimensions: Inches / mm

Unless otherwise specified, all tolerances are ± .004 / 0,10

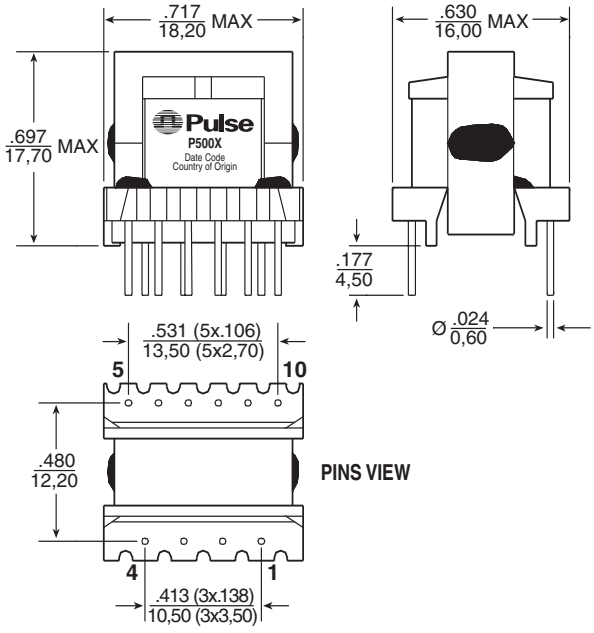
POWER TRANSFORMERS
For TinySwitch™ TNY253, TNY254 and TNY255

- Designed for use with Power Integration TNY253, TNY254 and TNY255 in low cost AC to DC converters for a large range of applications
- 4000 Vrms isolation
- Materials meet UL 94V-0 and IEC 950
- No audible noise
- Only two parts to cover a large range of output voltage

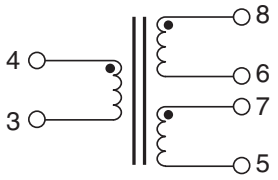
Electrical Specifications @ 25°C — Operating Temperature -30°C to +110°C

Part Number	Turns Ratio	Leakage Inductance (µH)	Matched To	Power	Applications
P5000	1:0.07:0.07	180 MAX	**TNY253**	Up to 2 W	AC: 85 to 265 Vac, 2 DC outputs from 3.3 Vdc up to 6 Vdc or 1 DC output from 6 Vdc up to 12 Vdc
P5001	1:0.1:0.1	180 MAX			AC: 85 to 265 Vac, 2 DC outputs from 6 Vdc up to 12 Vdc or 1 DC output from 12 Vdc up to 24 Vdc
P5004	1:0.07:0.07	200 MAX	**TNY254**	Up to 4 W	AC: 85 to 265 Vac, 2 DC outputs from 3.3 Vdc up to 5.5 Vdc or 1 DC output from 6 Vdc up to 12 Vdc
P5005	1:0.1:0.1	200 MAX			AC: 85 to 265 Vac, 2 DC outputs from 6 Vdc up to 10 Vdc or 1 DC output from 12 Vdc up to 24 Vdc
P5008	1:0.07:0.07	100 MAX	**TNY255**	Up to 5.5 W	AC: 85 to 265 Vac, 2 DC outputs from 3.3 Vdc up to 6 Vdc or 1 DC output from 6 Vdc up to 18 Vdc
P5009	1:0.1:0.1	100 MAX			AC: 85 to 265 Vac, 2 DC outputs from 6 Vdc up to 12 Vdc or 1 DC output from 12 Vdc up to 24 Vdc

Mechanical

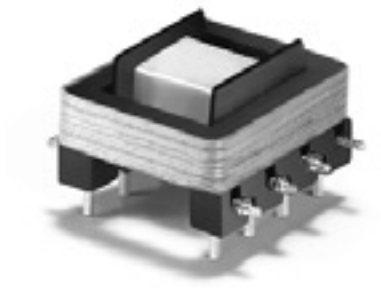


Schematic



Weight . . . . . 6.7 grams
Tray 40/tray
Dimensions: Inches / mm

FLYBACK TRANSFORMER FOR LT®1171™

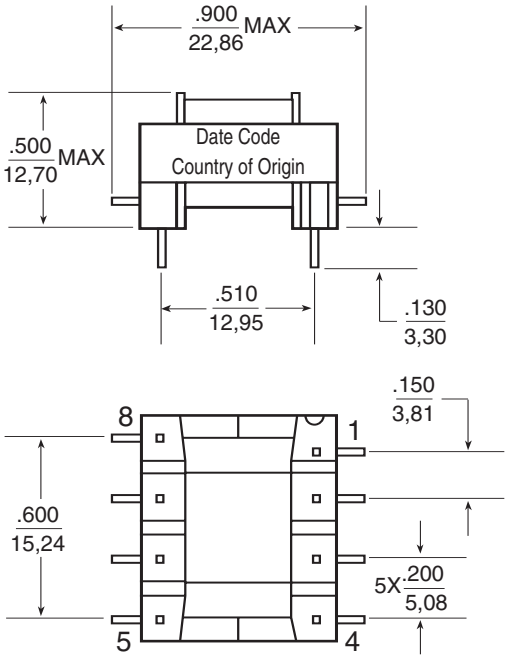


- Designed for use with Linear Technology's LT®1171™ in power supplies for Subscriber Line Interface Circuits
- Turns ratio 1:1:1:1 with low leakage inductance

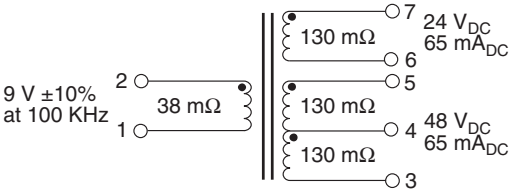
Performance verified by Linear Technology Corporation

Electrical Specifications @ 25°C — Operating Temperature -30°C to +130°C					
Part Number	**Turns Ratio**	**Primary Inductance** (µH)	**Leakage Inductance** (µH)	**DCR** (mΩ)	**Hipot** (V_{RMS})
PE-68488	1:1:1:1	36 ± 25%	0.30 MAX	(See schematic and note 1)	(See note 2)

Mechanical



Schematic



FLYBACK TRANSFORMER
(approximately 10° C temperature rise)

NOTES:
1. DCR's listed are nominal. Maximum DCR's are 20% over nominals.
2. Primary (1-2) to Secondaries (6-7) and (3-5): 1000 Vrms, 2 seconds. Secondary (3-5) to Secondary (6-7): 200 Vrms, 2 seconds.
3. Through-hole pins are .025 inches square.
4. LT®1171™ is a trademark of Linear Technology Corporation.

Weight . . . . . .7 grams
Tray 50/tray

Dimensions: Inches / mm

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

LOW PROFILE SELF-LEADED CURRENT SENSE TRANSFORMERS

Pulse
A TECHNITROL COMPANY

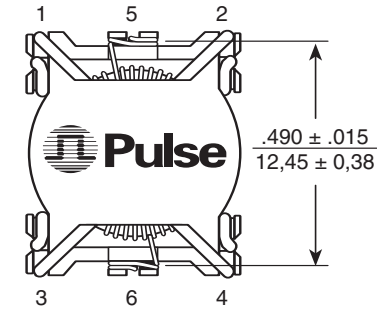
- Materials meet UL 94V-0 rating
- Self-leaded, surface mount
- Designed for switching power supply applications

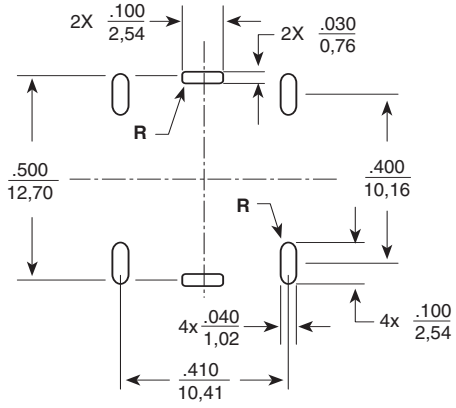
Electrical Specifications @ 25°C — Operating Temperature -30°C to 130°C

Part Number	I (Amps)	R_T (Ω)	Droop (%)	L_S (mH MIN)	R_S (Ω MAX)	Turns (N_S)	Hipot (V_{RMS})
PE-68210	15.3	25	1.3	3.8	.38	50	500
PE-68280	16.3	50	0.7	14.8	.93	100	500
PE-68383	16.4	100	0.3	57.0*	4.2	200	500

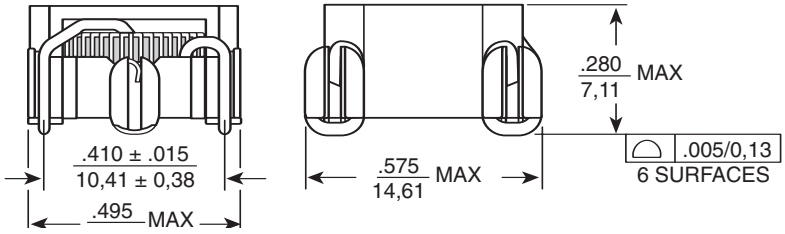
NOTES:
1. Inductance is measured at 100 KHz, 20 mVrms. *10 kHz, 60 mVrms.
2. Hipot is 500 Vrms, measured at 60 Hz, 2 seconds.
3. I, R_T, and Droop are reference values only.
4. Reference values are for the one turn winding connected in parallel for unipolar operation at 200 KHz.
5. Add suffix **"T"** to part number for tape and reel package (i.e. PE-68210**T**).

Mechanical

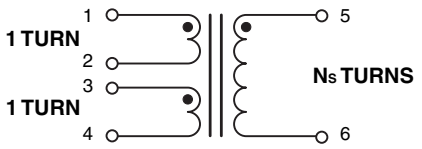




SUGGESTED PAD LAYOUT



Schematic



Dimensions: Inches / mm

Unless otherwise specified, all tolerances are ± .005 / 0,13

SMT CURRENT SENSE TRANSFORMERS
For DC/DC Converter Applications

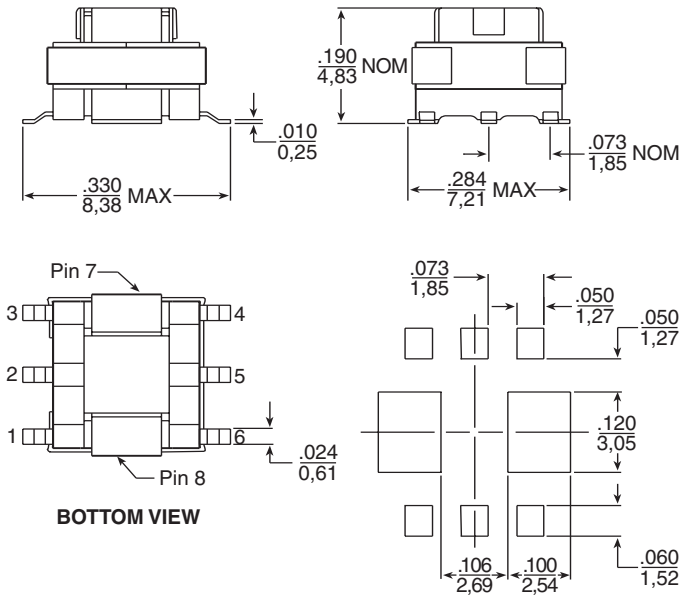
- Primary rated for 10 amps
- Full selection of turns ratios
- Pick and place compatible
- Optimal performance @ 100 kHz and above
- Low profile - height is .19" (4,83 mm)

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

Pulse Number	Turns ratio	Ls[1] (µH)	Rs (Ω MAX)	Terminating Resistor[2] (Ω)	HiPot (Vrms)
P8202T	1:20	80	0.55	2.0	500
P8203T	1:30	180	0.87	3.0	500
P8204T	1:40	320	1.14	4.0	500
P8205T	1:50	500	1.50	5.0	500
P8206T	1:60	720	1.75	6.0	500
P8207T	1:70	980	4.75	7.0	500
P8208T	1:100	2000	5.50	10.0	500
P8209T	1:125	3000	6.50	12.5	500

NOTES:
1. Inductance at 0.1 Vac, 10 kHz.
2. Terminating resistor for 1 V out with 10 amps peak in the primary.
3. The operating temperature range includes the ambient temperature and the temperature rise.
4. The temperature rise of the component is calculated based on the total core and copper loss:
   Copper loss (W) : $Pcu = (Ipk/Ns)^2*(Dmax/3)*Rs$.
   Core loss (W) : $Pfe=1.3*10^{-17}*f(Hz)^{1.63}*B(Gauss)^{2.45}$
   $Bmax(Gauss) = 3.75*10^9*(Ipk*Rt/Ns+Vd)*Dmax/(k*Ns*f)$, where f is in Hz, k=1 for unipolar and 2 for bipolar waveform. Keep Bmax below 2000 Gauss.
   Temperature rise (°C): ~300*(Pcu+Pfe)
5. Reverse polarity parts are available for all turns ratios : **P8222T** through **P8229T**.

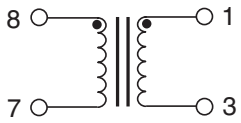
Mechanical



BOTTOM VIEW

RECOMMENDED PAD LAYOUT

Schematic



Weight . . . . . .0.34 grams
Tray 120/tray
Tape & Reel 900/reel
Coplanarity . . . . . .0.006 inches

Dimensions: Inches / mm

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

SMT CURRENT SENSE TRANSFORMERS
For DC/DC Converter Applications

Pulse
A TECHNITROL COMPANY

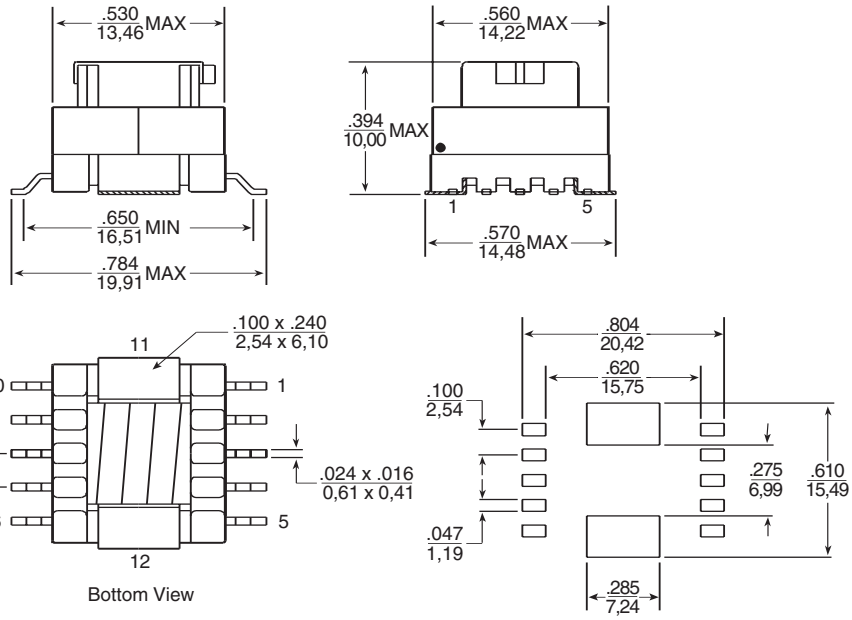
- High Current Design - primary rated for 35 Amps
- Designed for easy pick and place
- Operating Frequency Range: 50 kHz to 500 kHz
- Low Profile Design - .394" (10,00 mm) maximum height

Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C

Pulse number	Turns ratio	L_S [1] (mH)	R_S (Ω) MAX	Terminating Resistor [2]		Hipot (Vrms)
				1 V_P OUT (Ω)	(Ω) MAX	
PB0025	50:1	1.40	0.70	1.43	11.0	500
PB0026	100:1	5.60	1.40	2.86	43.6	500
PB0027	200:1	22.40	2.90	5.72	175.0	500

NOTES: **1.** Inductance at 0.1 Vac, 10 kHz.
2. Terminating resistor for 1 V out with 35 amps peak in the primary.
3. The operating temperature range includes the ambient temperature plus the component temperature rise.
4. The temperature rise of the component is calculated based on the total core and copper loss:
Copper loss (W) : $Pcu=(Ipk/Ns)^2*(Dmax/3)*Rs$.
Core loss (W) : $Pfe=1.5*10^{-17}*f(Hz)1.63*B(Gauss)^{2.45}$
$Bmax(Gauss) = 8*10^8*(Ipk*Rt/Ns+Vd)*Dmax/(k*Ns*f)$, where f is in Hz, k=1 for unipolar and 2 for bipolar waveform,
Ipk is the input current, Rs is the secondary turns. Keep Bmax below 2000 Gauss.
Temperature rise (°C): ~90*(Pcu+Pfe)
5. Add suffix **"T"** to part number for tape and reel packaging (i.e. PB0025**T**).

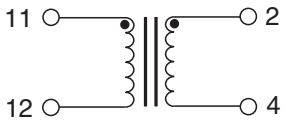
Mechanical



Bottom View

RECOMMENDED PAD LAYOUT

Schematic



Weight . . . . . .4.7 grams
Tray 100/tray
Tape & Reel 300/reel
Coplanarity . . . . . .0.006 inches

Dimensions: Inches / mm

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

THT CURRENT SENSE TRANSFORMERS

Pulse
A TECHNITROL COMPANY

- UL/C-UL recognized components
- 3000 Vrms gate to drive winding test
- Useful operating frequency from 50 kHz to 500 kHz
- Most popular winding configurations

Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C

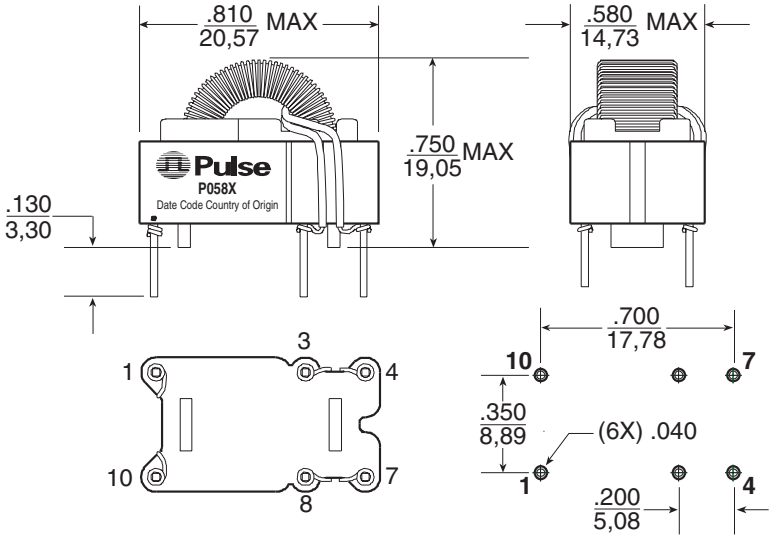
Part Number	Turns Ratio	Primary Inductance (1-10) (mH MIN)	DCR Pri (1-10) (Ω MAX)	DCR Sec1 (3-7) (mΩ ±15%)	DCR Sec2 (4-8) (mΩ ±15%)	Hi-Pot (Pri-Sec) (Vrms)
P0581	200:1:1	76	2.8	1.7	1.7	3000
P0582	100:1:1	19	1.4	1.7	1.7	3000
P0583	50:1:1	5	0.7	1.7	1.7	3000

Additional Specifications

Part Number	Reference Data				Calculation Data	
	RT	Ipk (Amps)	Droop (%)	Max Flux Density	Kb	Req (mΩ)
P0581	200	34	1.00	2000	17.12	.9
P0582	100	35	1.98	2000	68.49	.8
P0583	15	36	1.19	2000	273.97	.75

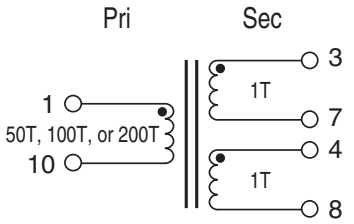
NOTES:
1. These current sense transformers have two one turn primaries that can be used in parallel. The listed current ratings are for parallel connection.
2. The reference values are for an application using the termination resistor (Rt) and operating with unipolar waveform at 100 kHz, 40% duty cycle. The estimated temperature rise is 55° C.
3. The peak flux density should remain below 2100 Gauss to ensure that the core does not saturate. Use the following formula to calculate the peak flux density: Bpk = Kb * Ipk * Rt * don/(Ff * Freq. in kHz) where: Rt is the terminating resistor in the application and Ff is 1 for unipolar waveform and 2 for bipolar waveform
4. To calculate the droop: Droop Exponent (D) = Rt * don/(Lpri in mH * Freq. in kHz) %Droop = $(1-e^{-D}) * 100$
5. The temperature rise of the component is calculated based on the total core loss and copper loss:
   A. To calculate total copper loss (W): P(cu) = Ipk^2 * Req * Ff * don where: Ff is 1 for unipolar waveform and 2 for bipolar waveform
   B. To calculate total core loss (W): P(core) = 0.000073 * (Freq. in kHz)$^{1.67}$ * (Bop in kG)$^{2.532}$ where: Bop in kG = Kb * Ipk * Rt * don/(2000 * Freq. in kHz)
   C. To calculate temperature rise: Temperature Rise (C) = 60.18 * (Core Loss(W) + Copper Loss (W))$^{.833}$

Mechanical



SUGGESTED PCB HOLE PATTERN

Schematic



Weight . . . . . .5 grams
Tray 20/tray

Dimensions: Inches / mm

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

THROUGH HOLE CURRENT SENSE TRANSFORMERS

VDE Approved

- Meets IEC950 insulation requirements
- 3750 V_{RMS} primary to secondary breakdown voltage
- Frequency range 10 kHz to 200 kHz

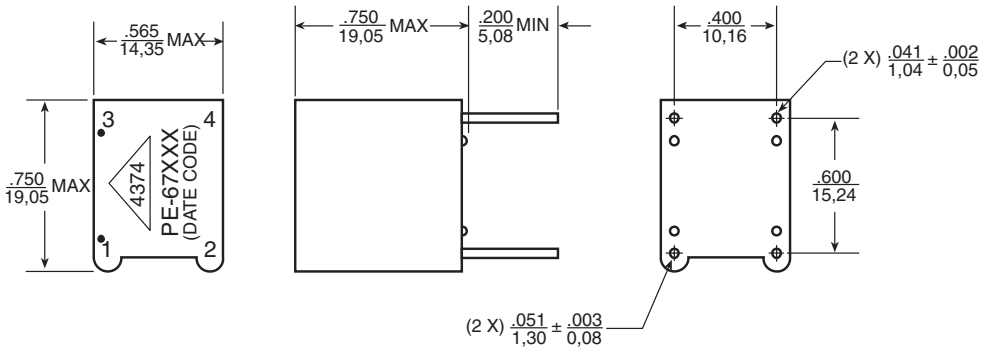
Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C

Part Number	I_{PK} (Amps)	R_T (Ω)	Droop (%)	K_{VI} (Volt/Amp)	L_S (mH MIN)	DCR R_S (Ω MAX)	Turns (Ns ± 1%)	K_B	K_{CL}	R_{EQ} (mΩ)
PE-67050	35	15	2.4	0.30	5.0	0.70	50	$.269x10^{6}$	$51.2x10^{-6}$	.95
PE-67100	37	56	2.2	0.56	20	1.40	100	$.0671x10^{6}$	$1.56x10^{-6}$	.85
PE-67200	38	200	2.0	1.00	80	4.50	200	$.0168x10^{6}$	$47.3x10^{-9}$	.82
PE-67300	37	510	2.2	1.70	180	11.0	300	$.00746x10^{6}$	$6.13x10^{-9}$	.84

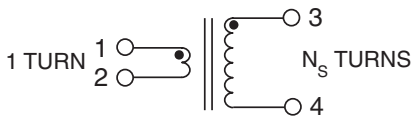
NOTES:

1. These current sense transformers have a 1 turn primary winding, secondary turns (Ns) as indicated in the table, and a 130°C insulation system.
2. The reference values are for unipolar operation, 50 kHz, 40% duty factor, and an estimated 55°C temperature rise.
3. The maximum useable peak sense current (I_{PK}) depends on temperature rise or core saturation, which should be evaluated for the operating conditions.
4. These Current Sense Transformers are recommended for switch mode power supply applications, unipolar or bipolar, operating at frequencies from 10 kHz to 200 kHz.
5. The maximum recommended operating flux density (B_{OP}) is 2000 gauss to prevent saturation at an operating temperature of 105°C.
6. The core loss factor (K_{CL}) is valid from 10 kHz to 200 kHz at 105°C.
7. The terminating resistor (R_T) may be varied to adjust operating flux (B_{OP}), droop, or scale factor (K_{VI}).
8. The scale factor (K_{VI}) is proportional to the terminating resistor (R_T) and is equal to 1 volt/amp when R_T=N_S.
9. The secondary inductance (L_S) is measured at 15 kHz and .5V for PE-67050, 1V for PE-67100, 2V for PE-67200 and 3V for PE-67300.

Mechanical



Schematic

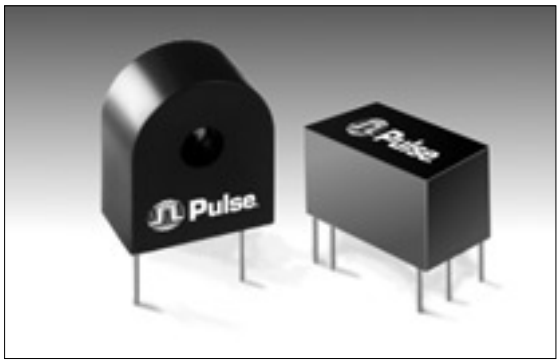


Unless otherwise specified, all tolerances are ± .005 / 0,13

Dimensions: Inches / mm

Parts per package 80

THROUGH HOLE CURRENT SENSE TRANSFORMERS AND INDUCTORS



- VDE Approved
- Designed for switching power supply applications
- Transformer meets IEC950 insulation requirements
- Frequency range from 20 kHz to 200 kHz

Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C

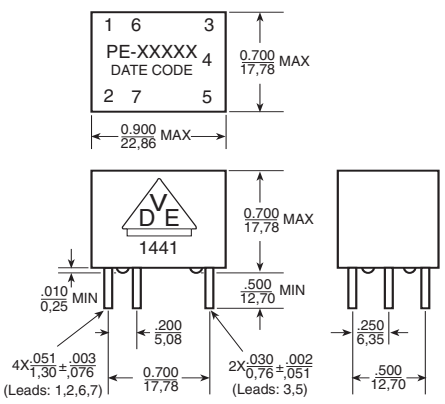
Part Number Transformer with 2-1 T Primaries	Schem. Figure	Part Number Transformer with 1T Primary	Schem. Figure	Part Number Inductor without Primary	Schem. Figure	Turns N_S	Secondary Inductance MH (MIN)	Secondary Inductance Test Voltage (15.75 KHz)	RS (Ω MAX)	RT (Ω NOM)	Primary Unipolar Amp µ Sec. Rating (MAX)	Primary Bipolar Amp µ Sec. Rating (MAX)
—	1C	**PE-63586**	1A	**PE-51686**	2A	50	5.0	0.5	0.7	50	150	300
PE-64487	1C	**PE-63587**	1A	**PE-51687**	2A	100	20.0	1.0	1.40	100	300	600
PE-64488	1C	**PE-63588**	1A	**PE-51688**	2A	200	80.0	2.0	4.50	200	600	1200
PE-64517	1D	**PE-63617**	1B	**PE-51717**	2B	50CT	5.0	0.5	0.7	50	150	300
PE-64518	1D	**PE-63618**	1B	**PE-51718**	2B	100CT	20.0	1.0	1.40	100	300	600
PE-64519	1D	**PE-63619**	1B	**PE-51719**	2B	200CT	80.0	2.0	4.50	200	600	1200
—	—	**PE-63691**	1B	—	—	300CT	180.0	3.0	11.0	300	900	1800

NOTES:

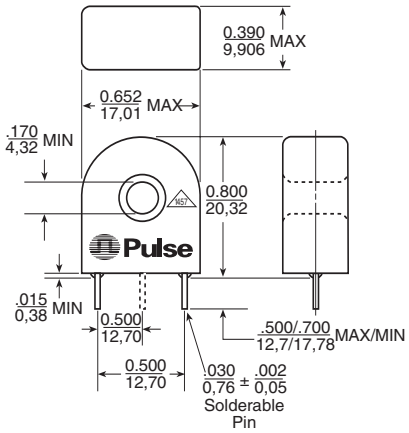
1. Maximum ratings specified with rated secondary terminating resistance and 1 turn primary.
2. Amp-microsecond (AµSec.) rating of primary equals volt microsecond (VµSec.) rating of secondary when secondary is terminated in rated resistance. (Amp—microseconds is equal to the product of a square pulse of current in amps, times the current pulse width in microseconds.
3. Maximum operating temperature 105°C (ambient plus rise).
4. When terminated with rated terminating resistance, the inductor scale factor is Vout = 1 volt per amp. for center tapped units terminating resistance for each half of winding is listed value divided by two.
5. 1 turn primary peak sense current is 20 amps for all parts listed above.

Mechanicals

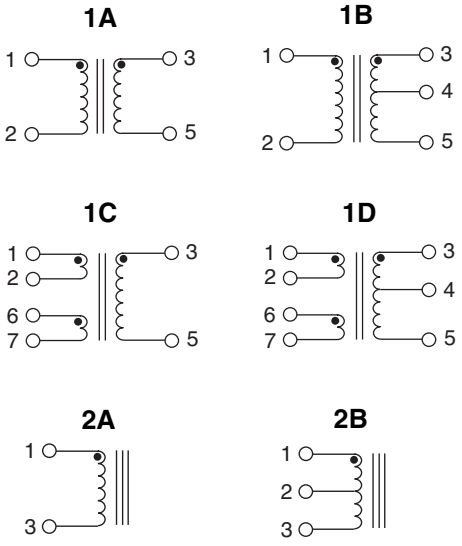
Transformer



Inductor



Schematics

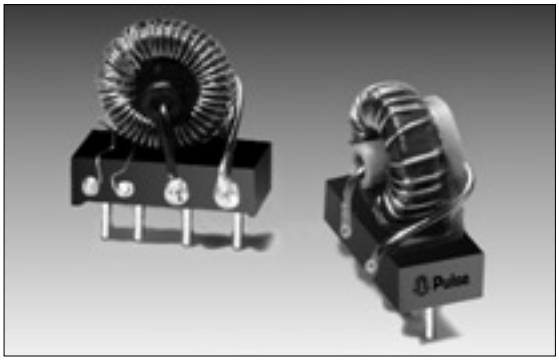


Dimensions: Inches / mm Unless otherwise specified, all tolerances are ± .005 / 0,13

500 KHz CURRENT SENSE TRANSFORMERS & INDUCTORS

Through Hole Package

Pulse
A TECHNITROL COMPANY



- Frequency range from 200 to 500 kHz
- 1250 VRMS isolation
- 20 Amp peak sense current

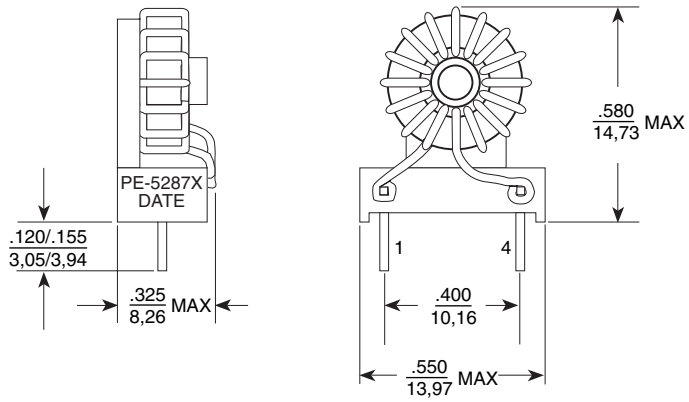
Electrical Specifications @ 25°C — Operating Temperature -30°C to 130°C

Part Number Inductor	Part Number Transformer	RT[1] (Ω)	Secondary Turns[2] NS	Secondary Inductance[3] (µH MIN)	DCR Secondary (Ω MAX)	DCR Primary (Ω)	VS (mV)
PE-52876	**PE-64976**	1.50	10	150	.055	.006	30
PE-52877	**PE-64977**	3.00	20	600	.097	.006	60
PE-52878	**PE-64978**	7.50	50	4000	.240	.006	160

NOTES: 1. Terminating resistance for .15 Volt/Amp
2. ± 1 turn
3. @ 100 kHz, @ VS

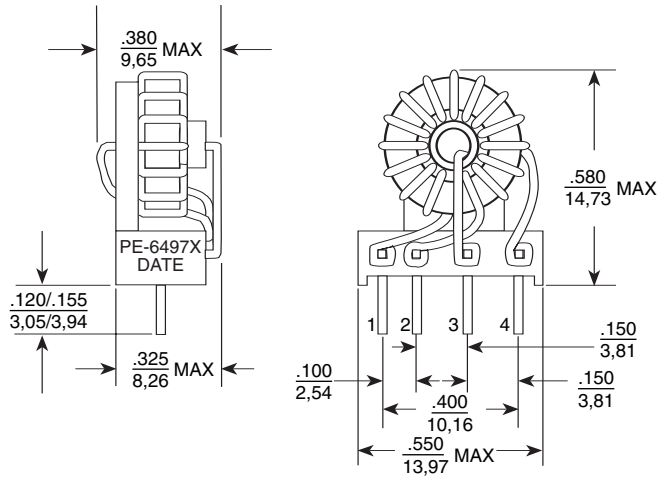
Mechanicals

Inductor

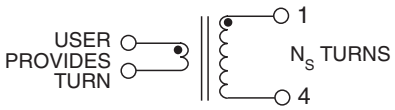


Dimensions: Inches / mm
Unless otherwise specified, all tolerances are ± .010 / 0,25

Transformer

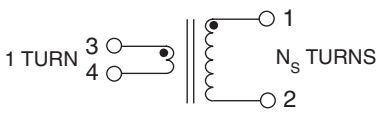


Inductor



PE-52876, PE-52877, PE-52878

Transformer



PE-64976, PE-64977, PE-64978

CURRENT SENSE INDUCTORS

FIS Series

- Current sense inductors, as feedback elements linking the output and pulse control circuitry, allow low-cost regulation of switch-mode power supplies
- Fully encapsulated with a frequency of 200 kHz maximum
- Isolation Pri to Sec: 2500 VAC
- Pri. current: 15 A maximum

Electrical Specifications @ 25°C

Part No.	Prim/Sec Ratio	Sec L (mH MIN)	Sec DCR (Ω MAX)	V x τ (MAX)
FIS 101	1/50	5.0	0.65	175 VμS
FIS 111	1/100	22.0	1.30	350 VμS
FIS 121	1/200	94.5	4.50	700 VμS

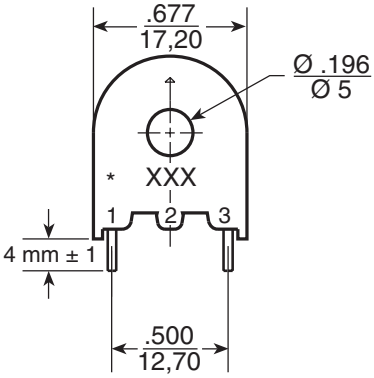
Notes:

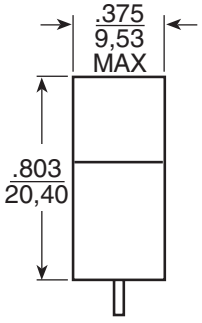
L: Inductance: (1-3) tested at 10 KHz & 10 mV

V x τ: V = Rt x Is $\quad \tau = \frac{1}{2F}$

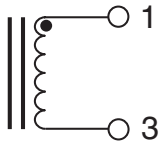
Rt (Ω): Recommended Terminating Resistance
Is (A): sec. current
F(Hz): Frequency

Mechanical





Schematic



DC/DC SURFACE MOUNT GATE DRIVE TRANSFORMERS

For SELV Operation

- 1500 VDC isolation between Gate and Drive
- Basic insulation (1.4 mm creepage/clearance) and operational available
- Operating frequency: 50 kHz and up

Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C

Part Number	Turns Ratio	Pri-Sec Insulation (VDC)	MAX [1] V*µsec	Primary Inductance (µH MIN)	Leakage [2] Inductance (µH MAX)	DCR Primary (Ω MAX)	DCR Secondary (Ω MAX)	MAX Package Size (L x W) (mm)	Package Height (mm MAX)
OPERATIONAL INSULATION									
PE-68386	1:1	1500	9.7	785	0.36	0.60	0.52	8.6 x 6.7	2.5
P0926	1:1:1	1500	23.8	330	0.40	2.00	2.00	8.0 x 6.6	5.3
P0544	1:1:1	1500	45.1	3950	0.70	1.60	1.60	9.0 x 8.6	7.6
PA0264	1:1:1	1500	12.7	1140	0.40	0.75	0.75	8.6 x 6.7	3.6
BASIC INSULATION (1.4 MM CREEPAGE AND CLEARANCE BETWEEN PRIMARY AND SECONDARY)									
P2033	1:1	1500	9.3	600	12.30	0.80	0.80	7.2 x 6.1	3.8
PA0173	1:1:1	1500	17.2	980	0.75	0.62	0.88	11.8 x 8.8	4.0
PA0185	1:1	1500	17.2	980	0.75	0.88	0.62	11.8 x 8.8	4.0
PA0184	1:1	1500	27.2	1400	0.50	1.50	1.50	9.0 x 8.6	7.6

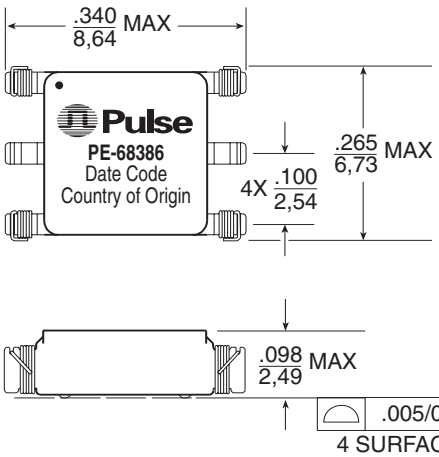
NOTES:

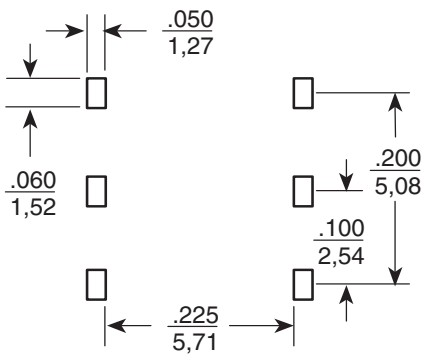
1. The maximum volt-µsec rating limits the peak flux density to 2200 Gauss when used in a unipolar drive application. For bi-polar drive applications a maximum volt-µsec of two times this rating is acceptable (ie: 2* (volt*µsec rating)) Volt*µsec = (voltage applied to the primary) * dutycycle / Frequecy = V * alpha / Freq_Hz = V * usec
2. The leakage inductance is measured at the primary terminals with all secondaries shorted.
3. Add suffix "**T**" to part number for Tape and Reel package (ie: P0544**T**)

Mechanical

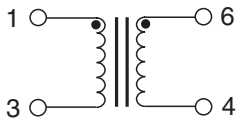
Schematic

PE-68386





SUGGESTED PAD LAYOUT



Weight . . . . . .0.28 grams
Tape & Reel 1500/reel
Tube 60/tube

Dimensions: Inches / mm

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

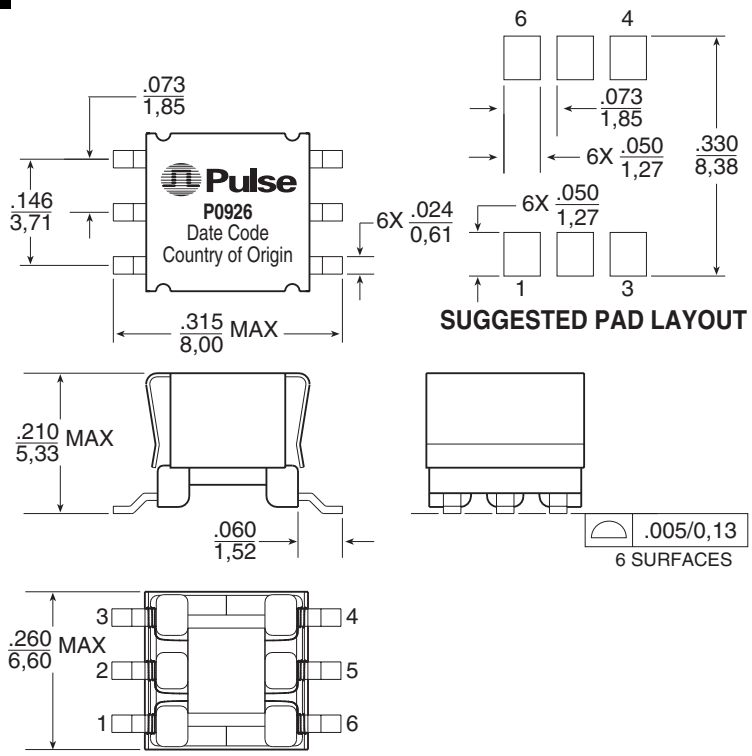
DC/DC SURFACE MOUNT GATE DRIVE TRANSFORMERS
For SELV Operation

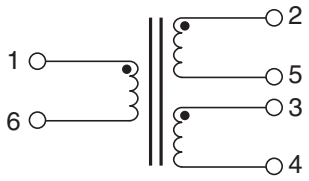
Pulse
A TECHNITROL COMPANY

Mechanicals

Schematics

P0926



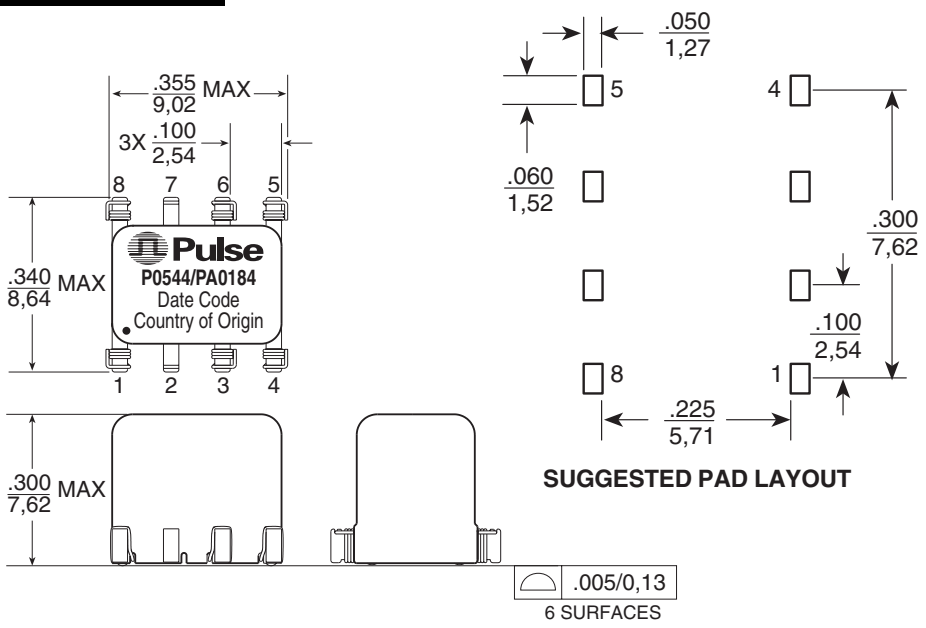


Weight . . . . . .0.48 grams
Tape & Reel 1000/reel
Tube 80/tube

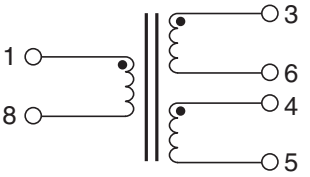
Dimensions: Inches / mm

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

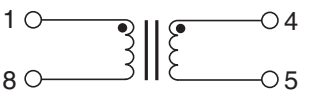
P0544/PA0184



P0544



PA0184



Weight . . . . . .0.60 grams
Tape & Reel 400/reel
Tube 50/tube

Dimensions: Inches / mm

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

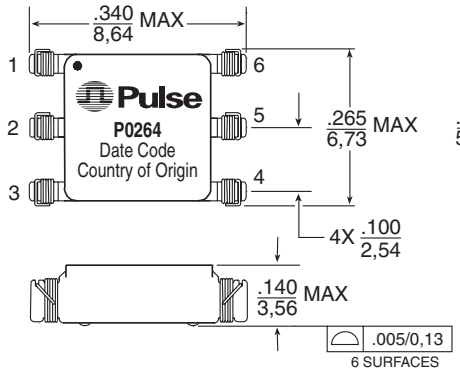
DC/DC SURFACE MOUNT GATE DRIVE TRANSFORMERS
For SELV Operation

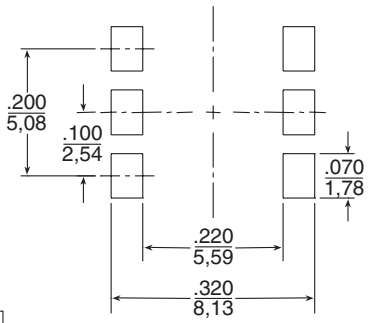
Pulse
A TECHNITROL COMPANY

Mechanicals

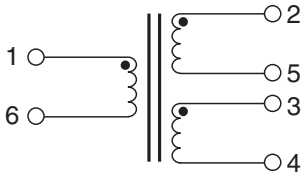
Schematics

PA0264





SUGGESTED PAD LAYOUT

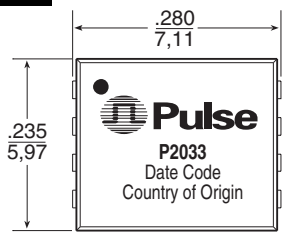


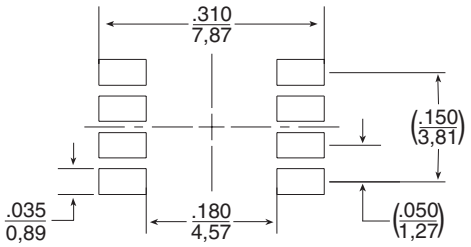
Weight . . . . . .0.23 grams
Tape & Reel 800/reel
Tube 75/tube

Dimensions: Inches / mm

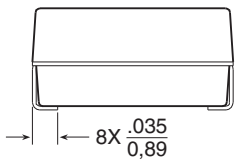
Unless otherwise specified, all tolerances are ± .010 / 0,25

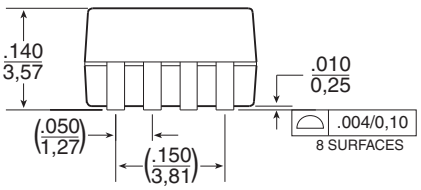
P2033

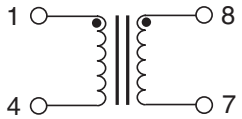




SUGGESTED PAD LAYOUT





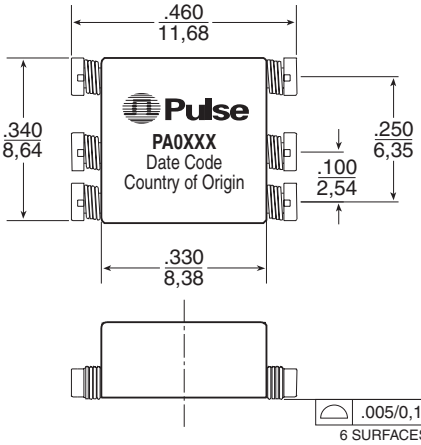


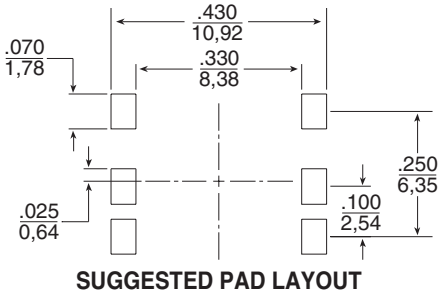
Weight . . . . . .0.29 grams
Tape & Reel 1200/reel
Tube 80/tube

Dimensions: Inches / mm

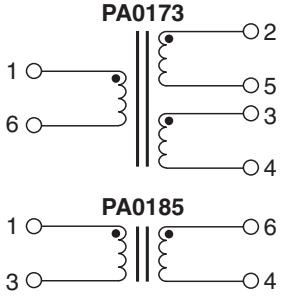
Unless otherwise specified, all tolerances are ± .010 / 0,25

PA0173, PA0185





SUGGESTED PAD LAYOUT



Weight . . . . . .0.48 grams
Tape & Reel 900/reel
Tube 60/tube

Dimensions: Inches / mm

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

OFFLINE GATE DRIVE TRANSFORMERS

Pulse
A TECHNITROL COMPANY

- UL and C-UL recognized, TÜV approved components
- 3000 Vrms gate to drive winding test
- Useful operating frequency from 50 kHz to 500 kHz
- Most popular winding configurations

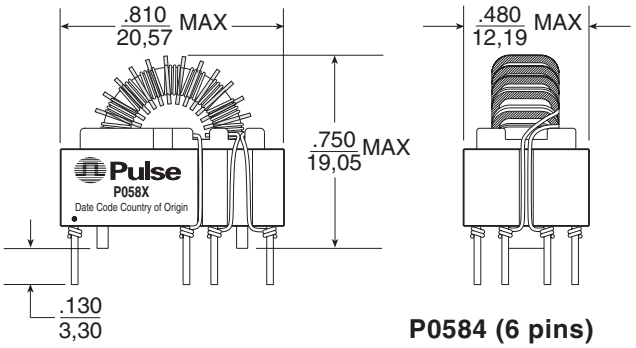
Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C

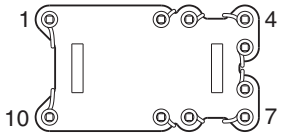
Part Number	Turns Ratio	Reference Data		Primary Inductance (1-10) (µH MIN)	Leakage Inductance Gate to Drive (µH MAX)	DCR Drive (1-10) (mΩ ±20%)	DCR Gates (mΩ ±20%)	Drive Pri-Sec (Vrms)
		ET (V * µsec MAX)	Maximum Flux Density					
P0584	1:1:1	95.0	2100	450	0.5	80	72	3000
P0585	1:1:1:1:1	95.0	2100	450	3.0	330	180	3000

NOTES:

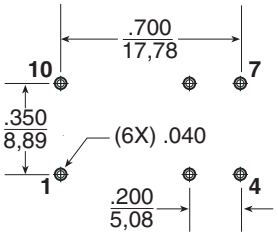
1. These gate drive transformers are meant to operate between 50 and 300 kHz with a 12 V, 45% bipolar waveform.
2. The peak flux density should remain below 2100 Gauss to ensure that the core does not saturate. Use the following procedure to calculate the peak flux density:
   A. Calculate the Volt-µsec product (ET): ET = (Drive Voltage) * (Don) / (Frequency in kHz) * 10^3
   B. Calculate the operating flux density (B): Bpk (Gauss) = 40.32 * ET/Ff where: Ff = 1 for unipolar drive applications and 2 for bipolar drive applications
3. The temperature rise of the component is calculated based on the total core loss and copper loss:
   A. To calculate total copper loss (W), use the following formula: Copper Loss (W) = $Irms^2$ * (DCR_Drive + (# of Gates) * DCR_Gates)
   B. To calculate total core loss (W), use the following formula: Core Loss (W) = 7.5E-5 * (Frequency in kHz)$^{1.67}$ * (20.16 * ET/1000)$^{2.532}$
   C. To calculate temperature rise, use the following formula: Temperature Rise (C) = 60.18 * (Core Loss(W) + Copper Loss (W))$^{.833}$

Mechanical

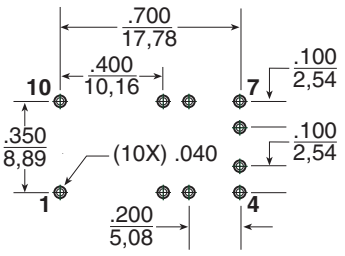




P0584 (6 pins)

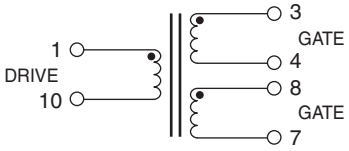


P0585 (10 pins)

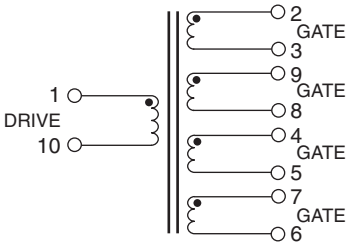


Schematics

P0584



P0585



Weight . . . . . .5 grams
Tray 20/tray

Dimensions: Inches / mm

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

MOSFET GATE DRIVE TRANSFORMERS

- International safety construction, VDE approved
- 3750 V_{RMS} gate to drive winding test
- Useful operating frequency from 20 kHz to 100 kHz

Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

Part Number	Turns Ratio (±5%)	Inductance 1VRMS 1 kHz Term 1-2 (µH MIN)	Leakage[1] Inductance Term 1-2 (µH MAX)	DCR Drive Winding (Ω MAX)	DCR Gate Winding (Ω MAX)	Cww Drive To Gate (pf MAX)	Cww Gate To Gate (pf MAX)	Typical Operating Frequency (kHz)
PE-63385	1:1	1500	4.0	0.40	0.75	50	NA	20-100
PE-63387*	1:1:1	1500	4.0	0.40	0.75	50	130	20-100
PE-63386	1:1.5	1500	4.0	0.40	2.50	50	NA	20-100
PE-63388	1:1.5:1.5	1500	4.0	0.40	2.50	50	130	20-100

*Also Available with a U-L B1 Insulation (1446C) system, tested to 4400 Vrms for 1 minute as **PE-68448.**

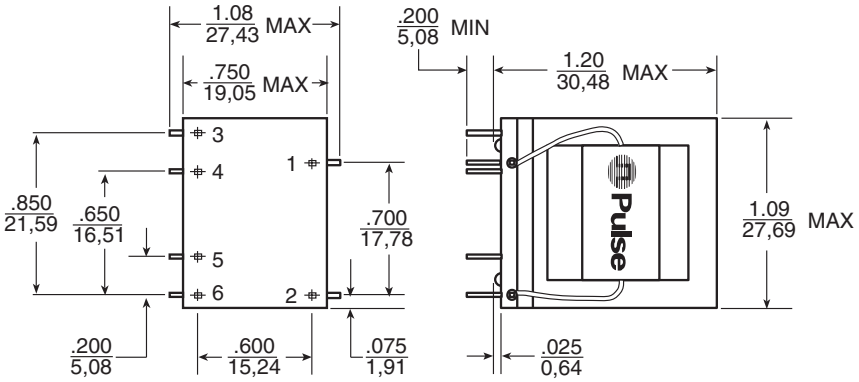
Maximum Ratings

Rating	Sym	PE-63385 PE-63386	PE-63387 PE-63388	Unit
Drive Excitation, Unipolar	ET_U[6]	200	320	V-µS
Drive Excitation, Bipolar	ET_B[6]	400	640	V-µS
Secondary RMS Current	I_{SR}[7]	640	500	ma
Operating & Storage Temp.	T_{OP}, T_{STG}	105	105	°C

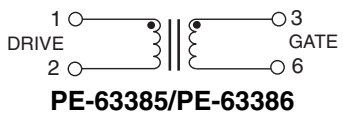
Dielectric Strength

Test Between	RMS Test Volts 60 Hz, 1 Minute Hold
Gate-Drive	3750
Gate-Gate	1500
Gate-Core	2000
Drive-Core	1750

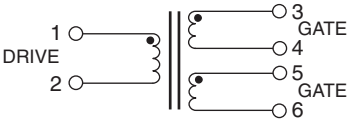
Mechanical



Schematics



PE-63385/PE-63386



PE-63387/PE-63388/PE-68448

Notes:
1. Measured with secondaries shorted
2. Pins .025/0,64 square solderable
3. Unused pins not provided
4. Pin numbers not marked on part
5. Mounting header flammability rating: UL-94V0
6. At 2480 Gauss
7. At 200 CM/Amp

Dimensions: Inches / mm

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

SELF-LEADED SMT COMMON MODE CHOKE

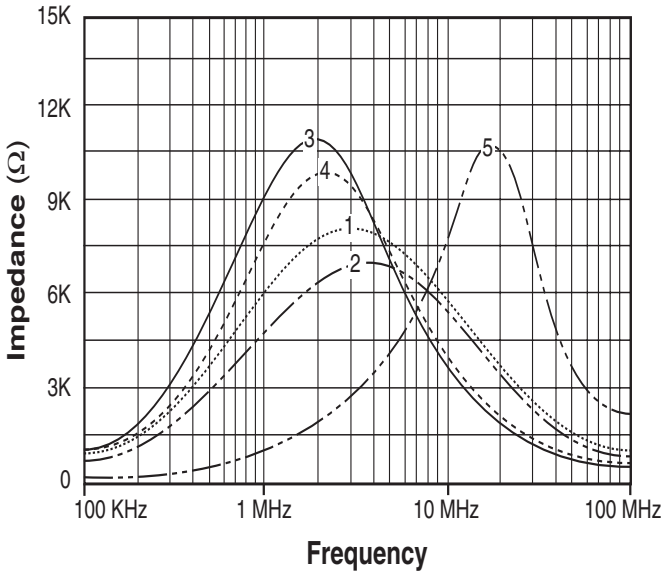
- Solutions based on impedance, size and current
- Designed for DC/DC converters
- Wide variety of inductor sizes and current ratings available
- Dielectric strength: 500 V_{RMS}

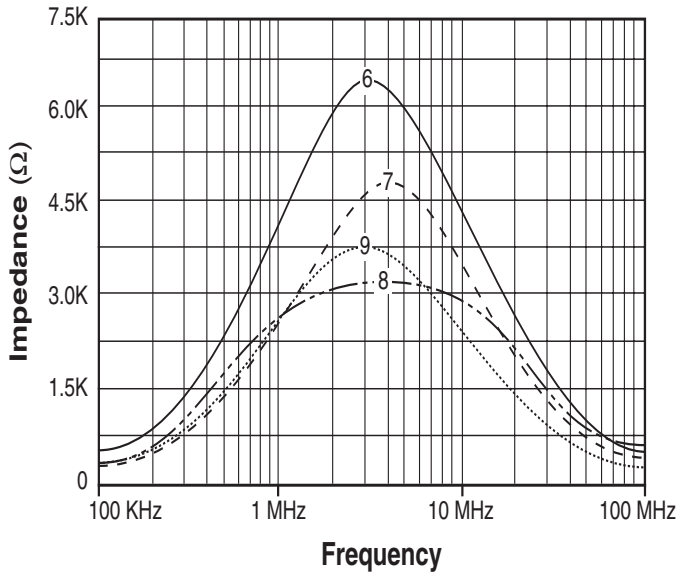
Electrical Specifications @ 25°C — Operating Temperature -40°C to +120°C

Part Number	RatedCurrent For 55°C Rise (Amps)	Inductance (mH ±35%)	DCR (MAX) (mΩ)	Impedance Curve (see # below)	Package	Weight (Grams)	Quantity In Tube	Quantity In Reel
P0354	1.22	1.170	200	1	Polecat	1.4	40	500
P0473	1.63	0.884	110	2	Polecat	1.5	40	500
P0351	2.80	1.470	80	3	LCCI-50	4.3	30	200
P0420	3.30	1.320	60	4	LCCI-50	4.6	30	200
P0421	3.30	0.225	60	5	LCCI-50	4.7	30	200
P0422	4.70	0.768	40	6	LCCI-50	4.9	30	200
P0353	5.60	0.590	20	7	LCCI-50	5.2	30	200
P0527	7.20	0.530	15	8	HCCI-68	7.7	20	100
P0429	9.70	0.809	14	6	Big Foot	13.5	15	75
P0469	11.6	0.630	10	7	Big Foot	14.3	15	75
P0502	14.0	0.473	8	9	Big Foot	14.8	15	75

NOTE: Add suffix "**T**" to part number for tape and reel package (i.e. P0354**T**).

Impedance Curves

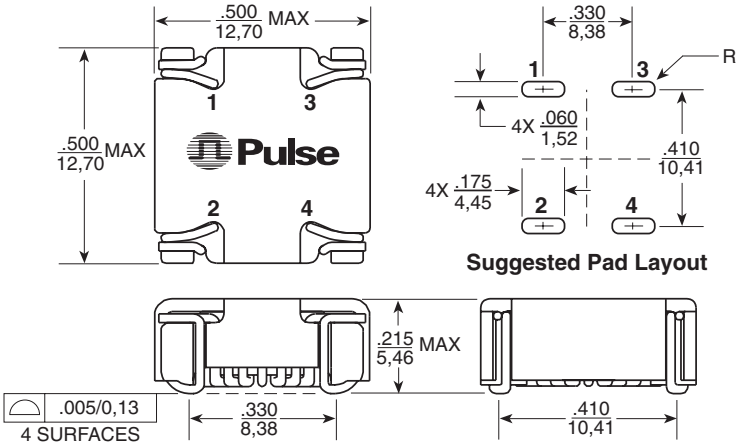




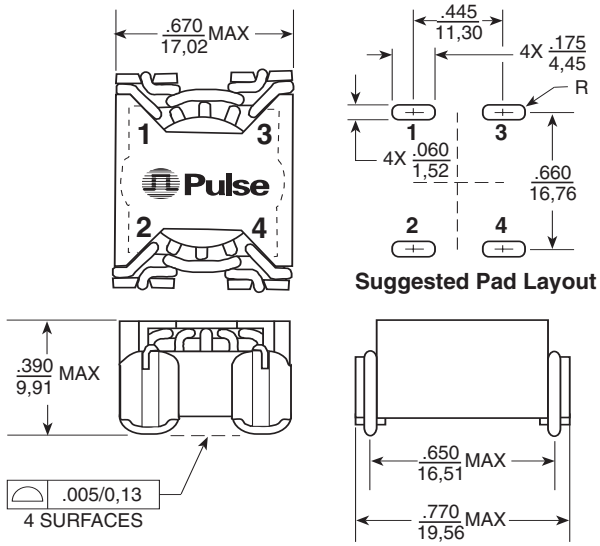
SELF-LEADED SMT COMMON MODE CHOKE

Mechanicals

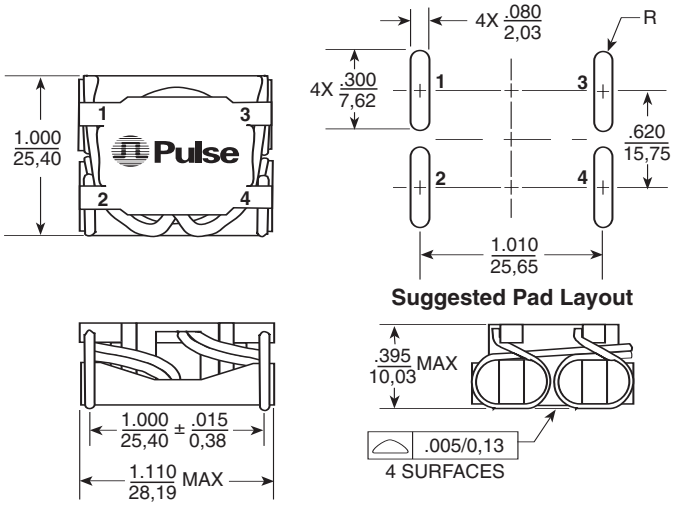
Polecat



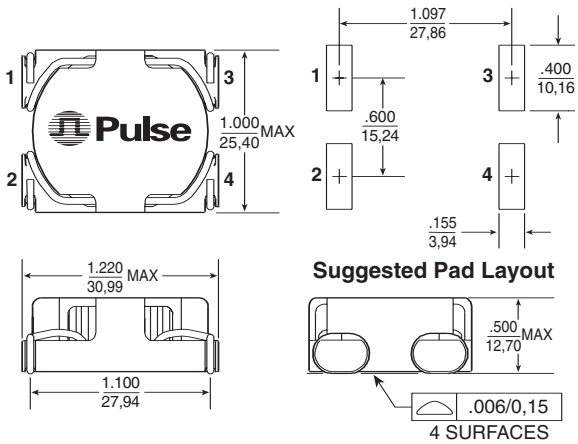
LCCI-50



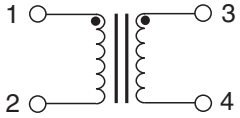
HCCI-68



Big Foot



Schematic



Dimensions: Inches / mm

Unless otherwise specified, all tolerances are ± .005 / 0,13

SELF-LEADED SMT COMMON MODE INDUCTORS

Pulse
A TECHNITROL COMPANY

- Pick and place compatible
- Rated voltage 250Vac
- Low RFI toroid
- Tape & Reel packaging available
- VDE approval and U.L. recognition pending

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

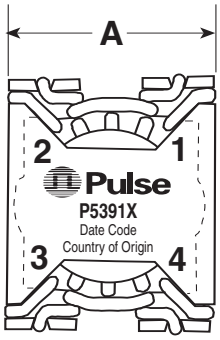
Part Number	1 RMS (Amps)	Inductance (mH ±30%)	DCR (MAX) (mΩ)	SRF (MHz)	Impedance Curve (see back page)	Size Code	Weight (Grams)	Quantity In Tube
PE-53910	3.60	1.0	50	4	1	LCCI-3	5.3	30
PE-53911	1.50	1.0	60	2	2	LCCI-1	2.5	40
PE-53912	2.50	3.0	80	2.2	3	LCCI-3	5.2	30
PE-53913	1.00	10.0	450	0.5	4	LCCI-1	2.4	40
PE-53914	0.50	22.0	850	0.3	5	LCCI-1	2.4	40

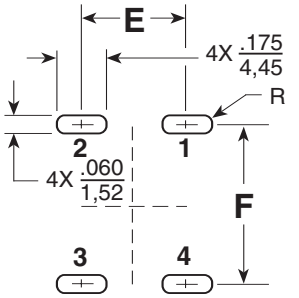
NOTE: Add suffix "**T**" to part number for tape and reel package (i.e. PE-53910**T**).

Mechanical

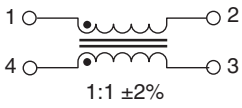
Schematic

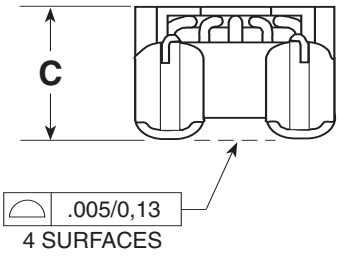
PE-5391X

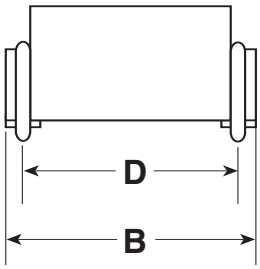




Suggested Pad Layout







Dimensions: Inches / mm

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

Size	A	B	C	D	E	F
LCCI-1	.560/14,22	.645/16,38	.350/8,89	.520/13,21	.340/8,64	.530/13,46
LCCI-3	.670/17,02	.770/19,56	.390/9,90	.650/16,51	.445/11,30	.660/16,76

SELF-LEADED SMT COMMON MODE INDUCTORS

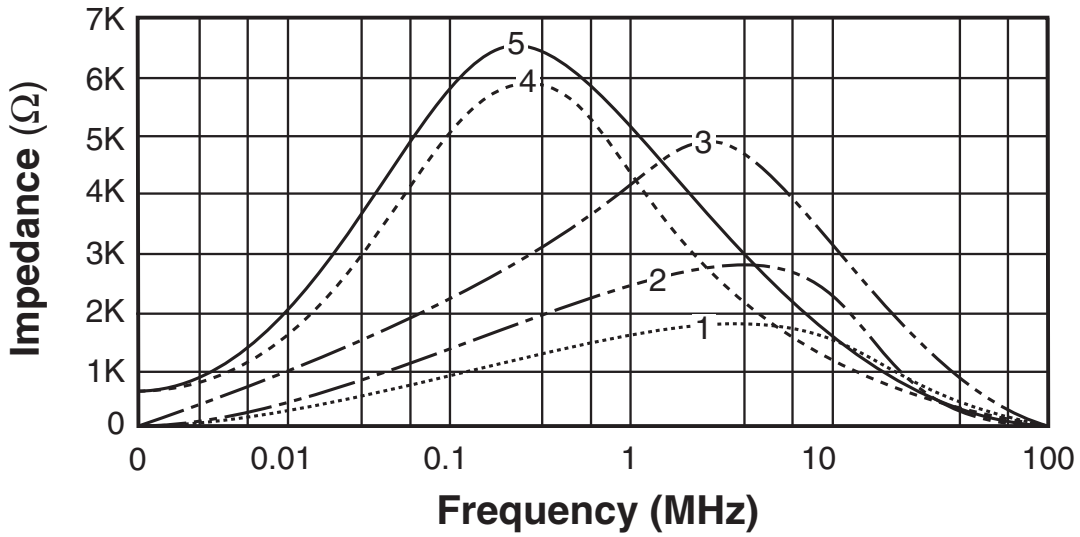
Performance Description

The common mode choke family has been developed to attenuate conductor noise (EMI) in systems. The designs on high permeability toroidal cores, performs two different filter functions. There is one winding for each of the two polarity lines with the inductors coupled by a single core.

Common mode signals (referred to ground) are suppressed by the full inductance of each coil. As an added benefit, differential signals are attenuated by the leakage inductance of the windings.

The full inductance in connection with capacitances (0.1 to 1µF) connected to earth ground will yield filtering results required for switch mode power supplies.

Impedance Curves



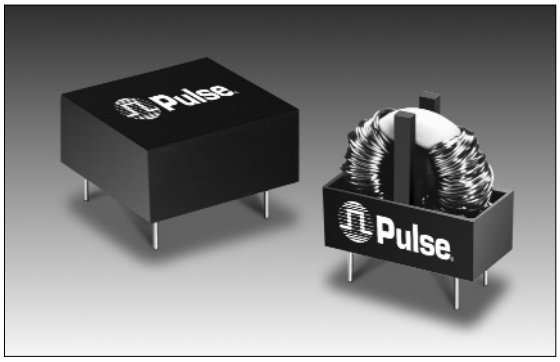
Application Notes

Pulse can assist you with successful solutions to pass world EMI/EMC standards such as FCC, VDE & IDE. Our safe and cost effective products span the application spectrum. EMI/EMC Control products include low power signal filtering devices, toroidal inductor product families and a wide selection of VDE/UL approved common mode chokes.

Please call our applications engineering locations for EMC technical support services including catalogs, samples, measurements, screenroom testing or design assistance.

COMMON MODE EMI SUPPRESSION INDUCTORS

Pulse
A TECHNITROL COMPANY



- Low profile or vertical mounting available
- Windings balanced within one percent
- For use in switching power supply input filter circuits
- Dielectric strength 1250 VRMS
- Designed with 3.0 mm minimum creep distance between windings

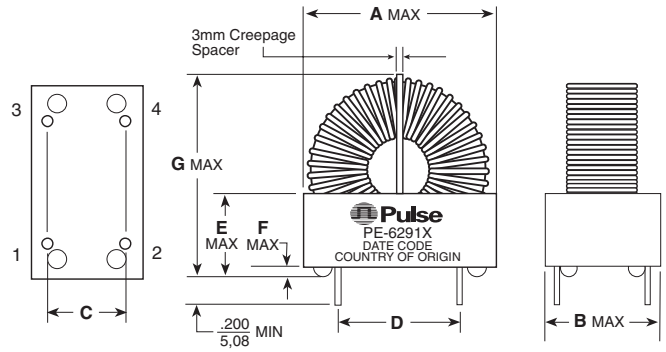
Electrical Specifications @ 25°C— Operating Temperature -40° to +130° C

Low Profile Part Number	Vertical Mount Part Number	Rated RMS Current[1] (Amps)	Load VA[2] at RMS Line 117 V	Load VA[2] at RMS Line 220 V	Inductance at 1 kHz (mH MIN)	Test Level Volts RMS 1.0 kHz	Leakage Inductance 130 kHz (µH MIN)	DCR Max. each WDG (Ω)	Package Number	Lead Diameter Inches ± .003 Low Profile	Lead Diameter Inches ± .003 Vertical Mount
PE-62891	**PE-62911**	1.8	210	420	10.0	0.50	130	0.240	1	0.032	0.032
PE-62892	**PE-62912**	3.5	400	800	3.0	0.20	35	0.060	1	0.032	0.032
PE-62893	**PE-62913**	6.0	700	1400	1.0	0.08	12	0.020	1	0.036	0.036
PE-62894	**PE-62914**	2.6	300	600	16.0	1.00	180	0.160	2	0.032	0.040
PE-62895	**PE-62915**	3.2	375	750	8.0	0.50	90	0.120	2	0.032	0.040
PE-62896	**PE-62916**	5.2	600	1200	4.0	0.20	45	0.040	2	0.036	0.036
PE-62897	**PE-62917**	7.5	875	1750	2.0	0.08	25	0.020	2	0.047	0.047

NOTES: 1. Rated RMS current for 40°C rise at any input voltage. 2. **Caution** — do not exceed rated RMS current ratings.

Mechanicals

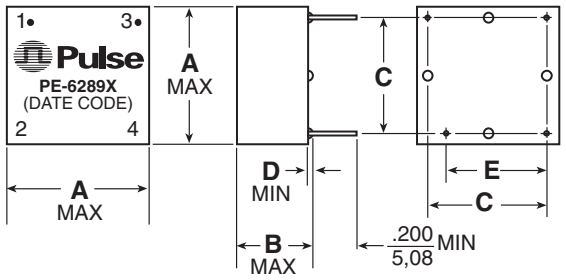
Vertical Package



Package Number	A	B	C	D	E	F	G
1	1.15 / 29,21	.550 / 13,97	.400 / 10,15	.800 / 20,32	.45 / 11,43	.015 / 0,38	1.15 / 29,21
2	1.44 / 36,57	.800 / 20,32	.600 / 15,24	.900 / 22,86	.70 / 17,78	.030 / 0,76	1.50 / 38,10

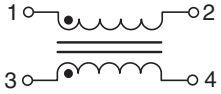
Unless otherwise specified, all tolerances are ± .010 / 0,25 **Dimensions:** Inches / mm

Low Profile Package



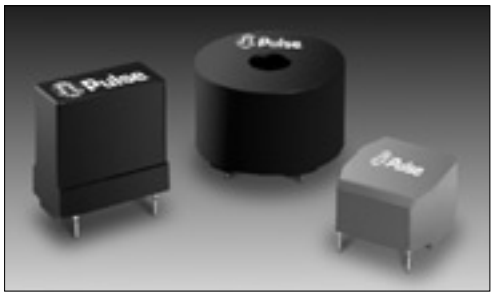
Package Number	A	B	C	D	E
1	1.25 / 31,75	.600 / 15,24	1.00 / 25,40	.015 / 0,38	.900 / 22,86
2	1.50 / 38,10	.800 / 20,32	1.28 / 32,51	.010 / 0,25	1.083 / 27,50

Schematic



500 kHz COMMON MODE EMI INDUCTORS

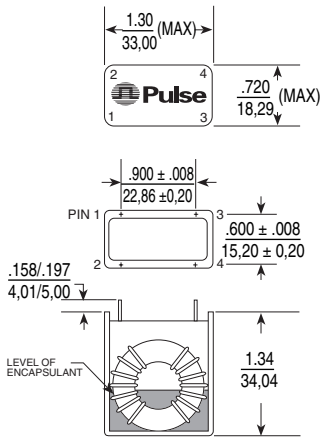
Pulse
A TECHNITROL COMPANY



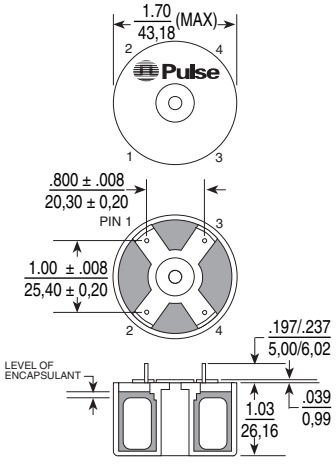
- Common mode EMI Inductors
- Designed for higher frequency power conversion
- For use in SMPS input filtering circuits

Mechanicals

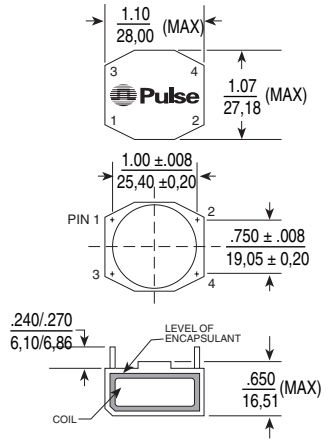
CASE 1[1]



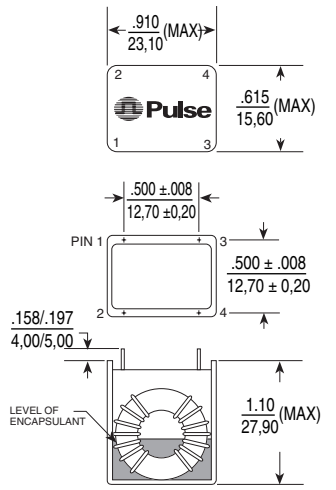
CASE 2[2]



CASE 3[1]



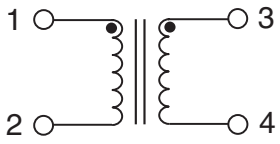
CASE 4[1]



Elect. Specs. @ 25°C— Operating Temp. -30° to +130° C

Part Number	Rated RMS Current (A.Normal)	Inductance mH (± 30%)	DCR (Ω MAX)	Case Style	Leakage Inductance (MIN/MAX µH)
PE-96161	0.5	33	1.40	3	160/320
PE-96165	1.0	18	0.50	1	120/320
PE-96166	1.0	5.6	0.30	3	30/60
PE-96168	2.0	15	0.29	1	100/220
PE-96173	3.15	5.6	0.10	1	40/80
PE-96175	3.15	3.3	0.07	3	15/35
PE-96177	3.15	2.2	0.06	3	10/20
PE-96178	3.15	1.2	0.04	3	6/15
PE-96179	3.15	1.2	0.04	4	5/14
PE-96181	5.0	3.9	0.06	1	25/60
PE-96186	6.3	2.7	0.04	1	20/45
PE-96187	8.0	3.3	0.033	2	20/45
PE-96188	10.0	1.8	0.02	2	10/25
PE-96189	12.5	1.5	0.015	2	10/20
PE-96190	15.0	1.0	0.01	2	7/15

Schematic



NOTES: 1. Leads have $\frac{.031/.039}{.700/.900}$ diameter.

2. Self-leaded: **96187** has .036 nom. diameter leads.
96188 & **96189** have .045 nom. diameter leads.
96190 has .051 nom. diameter leads.

Dimensions: Inches / mm — Unless otherwise specified, all tolerances are ± $\frac{.010}{0,25}$

INDUCTORS DESIGNED FOR NATIONAL'S 260 kHz SIMPLE SWITCHER™

Pulse
A TECHNITROL COMPANY

- Tested and recommended by National Semiconductor for the LM267X series
- Base material meets flammability requirements of UL 94V-0
- Available in surface mount and through hole versions

Electrical Specifications @ 25°C— Operating Temperature -40° to +130° C

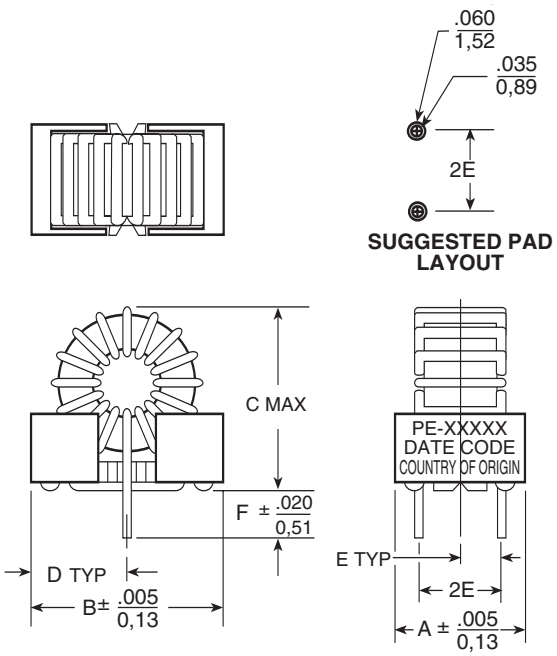
Pulse THT Part Number	Pulse SMT Part Number	National Part Number	In Circuit Operating Parameters [1]			Nominal DCR (Ω)	Package	
			Nominal Inductance (µH)	Rated Current (ADC)	Max [2] ETOP (V-µSec)		Through Hole	Surface Mount
P0841	—	LM267X-L41	22.8	4.9	23.3	.036	KM-30	—
P0845	—	LM267X-L45	10.2	4.3	10.0	.026	KM-1.1	—
P0846	—	LM267X-L46	14.8	5.0	17.0	.023	KM-2.1	—
P0847	—	LM267X-L47	10	5.0	13.0	.025	KM-20	—
P0848	—	LM267X-L48	50	5.0	40.0	.050	KM-40	—
P0849	—	LM267X-L49	33	5.0	36.0	.047	KM-40	—
P0850	—	LM267X-L50	23	5.0	24.0	.026	KM-30	—
—	**P0841S**	LM267X-L41	22.8	4.9	23.3	.036	—	HCI-68
—	**P0845S**	LM267X-L45	10	4.3	10.0	.050	—	LCI-44
—	**P0846S**	LM267X-L46	15	5.0	17.0	.027	—	LCI-50
—	**P0847S**	LM267X-L47	11	5.0	13.0	.025	—	LCI-50
—	**P0848S**	LM267X-L48	52	5.0	40.0	.025	—	Bigfoot
—	**P0849S**	LM267X-L49	36	5.0	36.0	.019	—	Bigfoot
—	**P0850S**	LM267X-L50	24.7	5.0	24.0	.013	—	Bigfoot

Notes : **1.** Inductance values may vary ±20%.
2. ETop rated at 260 kHz.
3. SIMPLE SWITCHER™ is a trademark of National Semiconductor Corporation.

KlipMount Series

PKG	A	B	C	D	E	F
KM-1.1	.350 / 8,89	.580 / 14,74	.715 / 18,17	.290 / 7,37	.110 / 2,80	.130 / 3,31
KM-2.0	.450 / 11,43	.650 / 21,08	.700 / 17,78	.325 / 8,26	.150 / 3,81	.130 / 3,31
KM-2.1	.460 / 11,69	.670 / 17,02	.750 / 19,05	.335 / 8,51	.150 / 3,81	.130 / 3,31
KM-3.0	.450 / 11,43	.830 / 21,09	.950 / 24,13	.415 / 10,55	.150 / 3,81	.130 / 3,31
KM-4.0	.600 / 15,24	.950 / 24,13	1.350 / 34,29	.475 / 12,07	.225 / 5,72	.130 / 3,31

Dimensions: Inches / mm
Unless otherwise specified, all tolerances are ± .010 / 0,25

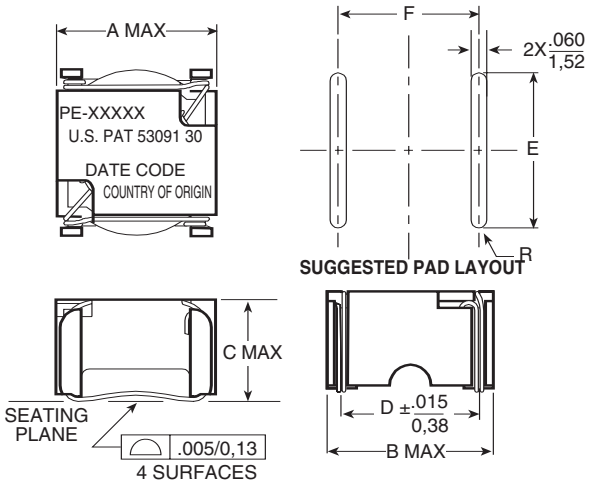


INDUCTORS DESIGNED FOR NATIONAL'S 260 kHz SIMPLE SWITCHER™

Pulse
A TECHNITROL COMPANY

Mechanicals

LCI Series



PKG	A	B	C	D	E	F
LCI-44	.600 15,24	.620 15,75	.390 9,91	.500 12,70	.550 13,97	.510 12,95
LCI-50	.670 17,02	.700 17,78	.390 9,91	.580 14,74	.620 15,75	.590 14,99

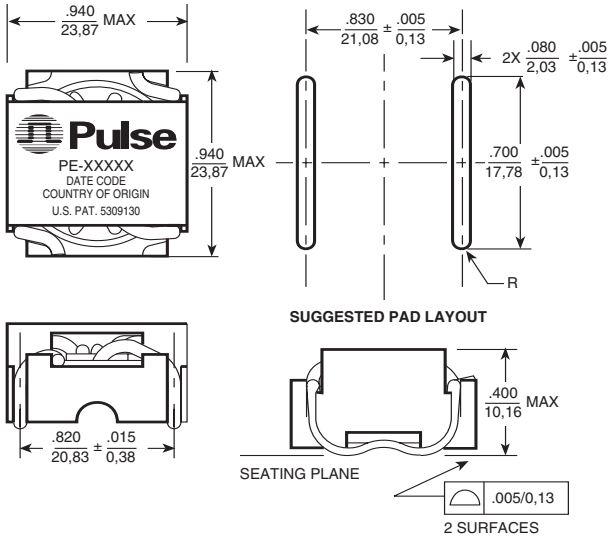
Note:
Coil must clear seating plane by .010 / 0,25 MIN

Dimensions: Inches / mm

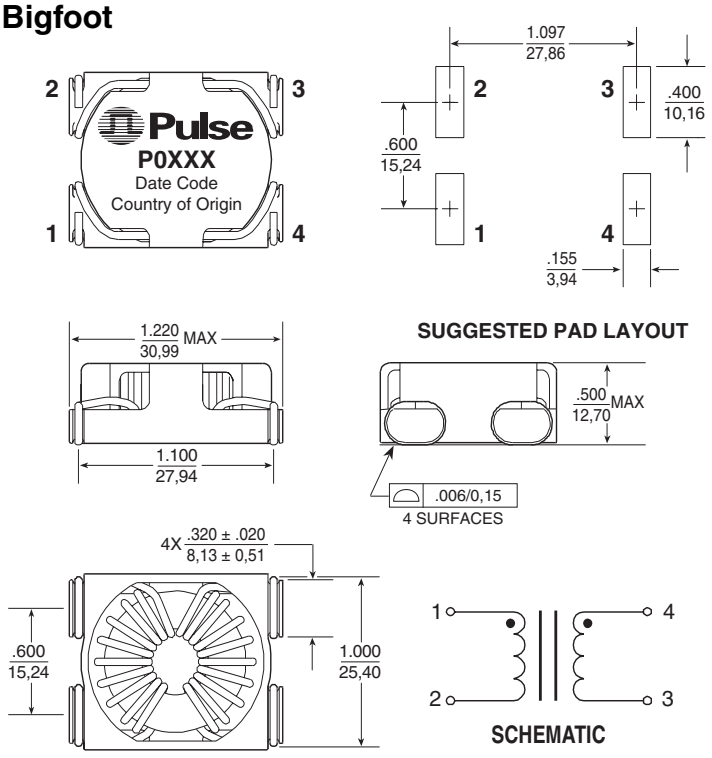
Unless otherwise specified, all tolerances are ± .010 / 0,25

Notes:
1. Dimension "D" is measured across terminal blocks only.
2. Coil must clear seating plane by .010 / 0,25 MIN.

HCI-68

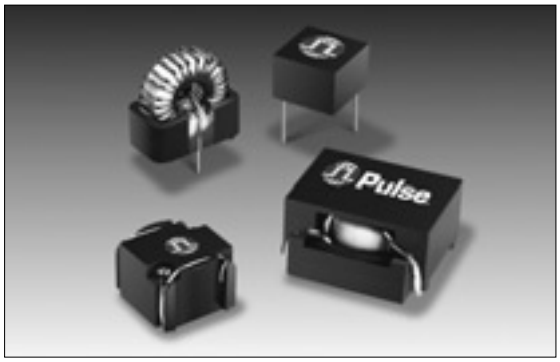


Bigfoot



INDUCTORS DESIGNED FOR NATIONAL'S 150 kHz SIMPLE SWITCHER™

Pulse
A TECHNITROL COMPANY



- Tested and recommended by National Semiconductor
- Base material meets flammability requirements of UL 94V-0
- Available in surface mount and through hole versions

Electrical Specifications @ 25°C— Operating Temperature -40° to +130° C

Pulse THT Part Number	Pulse SMT Part Number	National Part Number	In Circuit Operating Parameters [1]			Nominal DCR (Ω)	Package	
			Nominal Inductance (µH)	Rated Current (A_{DC})	Max [2] E_{TOP} (V-µSec)		Through Hole	Surface Mount
PE-53801	**PE-53801S**	LM259X-L1	259	0.13	23.1	3.4	LP-25	LCI-20
PE-53802	**PE-53802S**	LM259X-L2	178	0.16	16.5	2.8	LP-25	LCI-20
PE-53803	**PE-53803S**	LM259X-L3	118	0.2	13.2	1.8	LP-25	LCI-20
PE-53804	**PE-53804S**	LM259X-L4	79	0.25	9.9	1.5	LP-25	LCI-20
PE-53805	**PE-53805S**	LM259X-L5	55	0.3	6.6	1.0	LP-25	LCI-20
PE-53806	**PE-53806S**	LM259X-L6	39	0.34	6.6	.80	LP-25	LCI-20
PE-53807	**PE-53807S**	LM259X-L7	26	0.45	6.6	.62	LP-25	LCI-20
PE-53808	**PE-53808S**	LM259X-L8	374	0.2	75.9	2.7	LP-30	LCI-30
PE-53809	**PE-53809S**	LM259X-L9	256	0.25	33	2.2	LP-30	LCI-30
PE-53810	**PE-53810S**	LM259X-L10	176	0.3	26.4	1.4	LP-30	LCI-30
PE-53811	**PE-53811S**	LM259X-L11	118	0.38	19.8	1.2	LP-30	LCI-30
PE-53812	**PE-53812S**	LM259X-L12	78	0.46	16.5	0.8	LP-30	LCI-30
PE-53813	**PE-53813S**	LM259X-L13	55	0.56	13.2	0.5	LP-30	LCI-30
PE-53814	**PE-53814S**	LM259X-L14	39	0.68	9.9	0.3	LP-30	LCI-30
PE-53815	**PE-53815S**	LM259X-L15	26	0.84	6.6	0.2	LP-30	LCI-30
PE-53816	**PE-53816S**	LM259X-L16	17	1.02	6.6	0.1	LP-30	LCI-30
PE-53817	**PE-53817S**	LM259X-L17	375	0.36	75.9	1.3	LP-37	LCI-37
PE-53818	**PE-53818S**	LM259X-L18	252	0.44	49.5	0.9	LP-37	LCI-37
PE-53819	**PE-53819S**	LM259X-L19	173	0.54	36.3	0.6	LP-37	LCI-37
PE-53820	**PE-53820S**	LM259X-L20	115	0.67	29.7	0.4	LP-37	LCI-37
PE-53821	**PE-53821S**	LM259X-L21	78	0.82	23.1	0.3	LP-37	LCI-37
PE-53822	**PE-53822S**	LM259X-L22	54	1.0	16.5	0.2	LP-37	LCI-37
PE-53823	**PE-53823S**	LM259X-L23	38	1.2	13.2	0.1	LP-37	LCI-37
PE-53824	**PE-53824S**	LM259X-L24	26	1.48	9.9	0.1	LP-37	LCI-37
PE-53825	**PE-53825S**	LM259X-L25	18	1.81	9.9	0.06	LP-37	LCI-37
PE-53826	**PE-53826S**	LM259X-L26	377	0.68	75.9	1.0	LP-44	LCI-44
PE-53827	**PE-53827S**	LM259X-L27	248	0.83	72.6	0.6	LP-44	LCI-44
PE-53828	**PE-53828S**	LM259X-L28	168	1.02	56.1	0.4	LP-44	LCI-44
PE-53829	**PE-53829S**	LM259X-L29	112	1.26	42.9	0.3	LP-44	LCI-44
PE-53830	**PE-53830S**	LM259X-L30	77	1.54	33	0.2	LP-44	LCI-44
PE-53831	**PE-53831S**	LM259X-L31	53	1.87	26.4	0.13	LP-44	LCI-44
PE-53932	**PE-53932S**	LM259X-L32	37	2.24	19.8	0.10	LP-44	LCI-44
PE-53933	**PE-53933S**	LM259X-L33	24	2.74	16.5	0.07	LP-44	LCI-44
PE-53934	**PE-53934S**	LM259X-L34	17	3.0	13.2	0.05	KM-10	LCI-44
PE-53935	**PE-53935S**	LM259X-L35	250	1.5	72.6	0.23	KM-30	HCI-68
PE-54036	**PE-54036S**	LM259X-L36	168	1.81	75.9	0.18	KM-30	HCI-68
PE-54037	**PE-54037S**	LM259X-L37	114	2.22	62.7	0.10	KM-30	HCI-68
PE-54038	**PE-54038S**	LM259X-L38	77	2.7	52.8	0.09	KM-30	HCI-68
PE-54039	**PE-54039S**	LM259X-L39	53	3.0	42.9	0.08	KM-30	HCI-68
PE-54040	**PE-54040S**	LM259X-L40	38	3.0	29.7	0.05	KM-30	HCI-68
PE-54041	**PE-54041S**	LM259X-L41	25	3.0	19.8	0.04	KM-20	LCI-50
PE-54042	—	LM259X-L42	167	2.5	75.9	0.14	KM-40	—
PE-54043	—	LM259X-L43	110	3.0	75.9	0.09	KM-40	—
PE-54044	**PE-54044S**	LM259X-L44	77	3.0	59.4	0.08	KM-30	HCI-68
PE-53900	—	LM258X-L	19	4.5	32[3]	0.02	KM-30	—

Notes :
1. Inductance values may vary ±20%.
2. ETop rated at 150 kHz except where designated.
3. ETop rated at 100 KHz.
4. SIMPLE SWITCHER™ is a trademark of National Semiconductor Corporation.

INDUCTORS DESIGNED FOR NATIONAL'S 150 kHz SIMPLE SWITCHER™

Pulse
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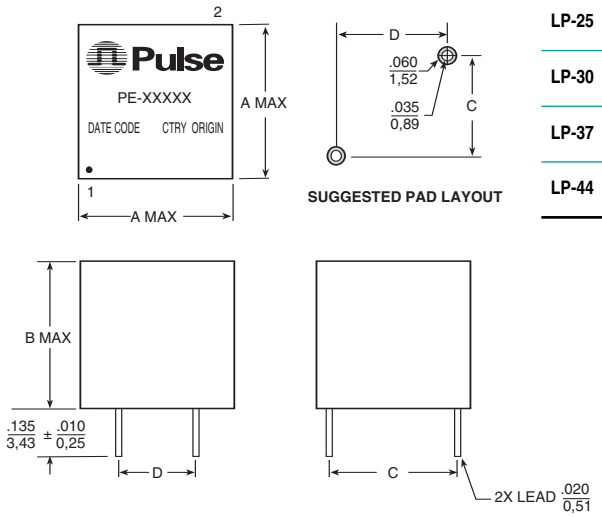
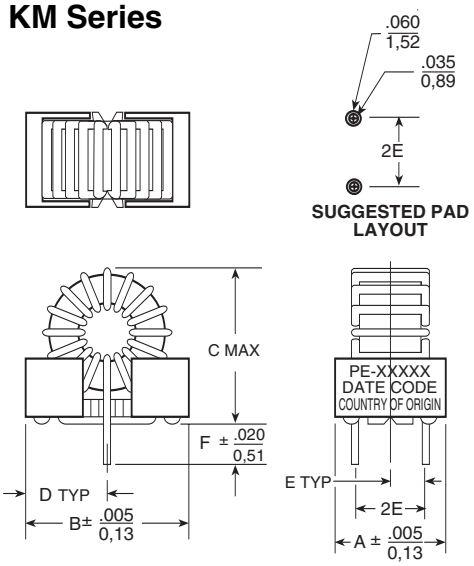
Mechanicals

LP Series



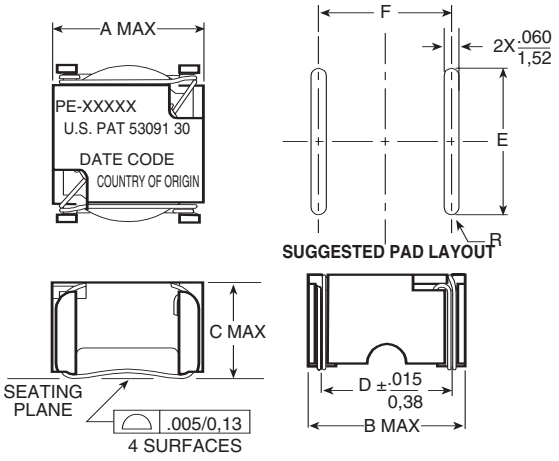
PKG	A	B	C	D
LP-25	.360 9,14	.310 7,87	.250 6,35	.250 6,35
LP-30	.400 10,16	.300 7,62	.300 7,62	.300 7,62
LP-37	.495 12,57	.375 9,52	.375 9,52	.375 9,52
LP-44	.635 16,13	.365 9,27	.500 12,7	.300 7,62

KM Series



PKG	A	B	C	D	E	F
KM-10	.340 8,64	.580 14,73	.650 16,51	.290 7,37	.110 2,79	.130 3,30
KM-20	.450 11,43	.650 16,51	.700 17,73	.325 8,26	.150 3,81	.130 3,30
KM-30	.450 11,43	830 21,08	.950 24,13	.415 10,54	.150 3,81	.130 3,30
KM-40	.610 15,50	.970 24,64	1.10 27,94	.475 12,07	.225 5,72	.130 3,30

LCI Series

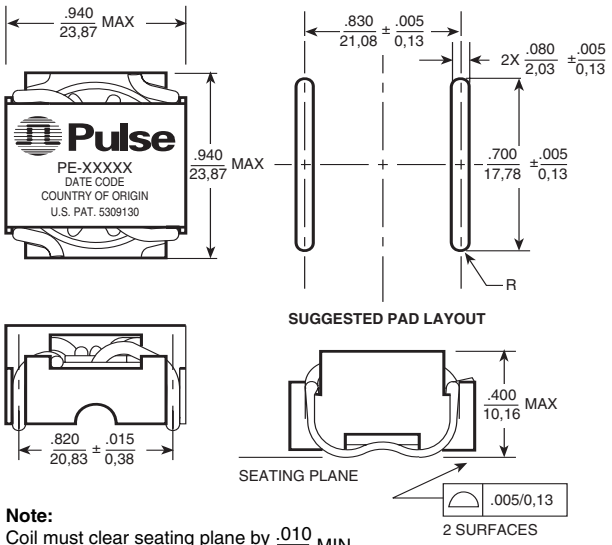


Notes:

1. Dimension "D" is measured across terminal blocks only.
2. Coil must clear seating plane by .010 0,25 MIN.

PKG	A	B	C	D	E	F
LCI-20	.340 8,64	.340 8,64	.270 6,86	.260 6,60	.300 7,62	.270 6,86
LCI-30	.435 11,05	.440 11,18	.360 9,14	.350 8,89	.400 10,16	.360 9,14
LCI-37	.565 14,35	.570 14,48	.360 9,14	.450 11,43	.520 13,21	.460 11,68
LCI-44	.600 15,24	.620 15,75	.390 9,91	.500 12,7	.550 13,97	.510 12,95
LCI-50	.670 17,02	.700 17,78	.390 9,91	.580 14,73	.620 15,75	.590 14,99

HCI-68



Note:
Coil must clear seating plane by .010 0,25 MIN

Dimensions: Inches / mm

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

INDUCTORS DESIGNED FOR NATIONAL'S 50 kHz SIMPLE SWITCHER™

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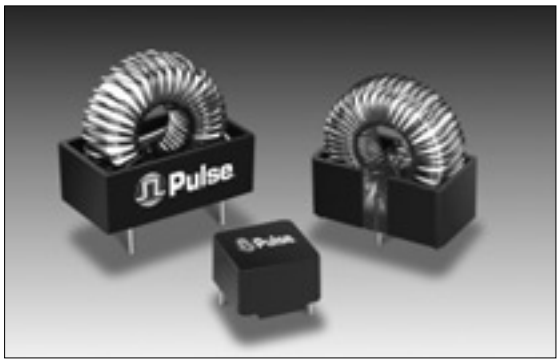

- Designed for use with National's device numbers LM2574/LM2575/LM2576
- Base material meets flammability requirements of UL 94V-0
- Performance verified by National Semiconductor

Electrical Specifications @ 25°C— Operating Temperature -30° to +130° C

Part Identification		Reference Operating Values[1]			Design Control Values			
Part Number	Inductor Code	Inductance Typical (µH)	I_{DC} (Amps)	ET_{OP} (V-µSec)	Inductance No DC[2] (µH ± 20%)	DCR (Ω MAX)	Package Style	Lead Diameter
PE-53112	L47	47	3.0	90	38	0.05	KM-2.0	.025
PE-92114K	L68	68	3.0	90	55	0.02	KM-4.0	.040
PE-92108K	L100	100	3.0	90	91	0.04	KM-4.0	.032
PE-53113	L150	150	2.0	90	130	0.10	KM-4.0	.025
PE-52626	L220	220	1.4	90	230	0.38	Low Profile	.025 SQ.
PE-53145	L220	220	1.4	90	176	0.14	KM-3.0	.020
PE-52627	L330	330	0.9	90	302	0.74	Low Profile	.025 SQ.
PE-53146	L330	330	0.9	90	267	0.18	KM-3.0	.020
PE-53114	L470	470	0.64	90	426	0.16	KM-4.0	.025
PE-52629	L680	680	.85	90	657	1.25	Low Profile	.025 SQ.
PE-53115	H150	150	3.0	200	136	0.10	KM-4.0	.025
PE-53116	H220	220	3.0	200	167	0.07	KM-5.0	.032
PE-53117	H330	330	3.0	200	292	0.15	KM-5.0	.025
PE-53118	H470	470	2.0	200	369	0.17	KM-5.0	.025
PE-53119	H680	680	1.3	200	562	0.20	KM-5.0	.025
PE-53120	H1000	1000	0.95	200	762	0.24	KM-5.0	.025
PE-53121	H1500	1500	0.62	200	1150	1.00	Case	.032
PE-53122	H220	2200	0.42	200	1730	1.80	Case	.032

NOTES:

1. Typical inductance occurs at the I_{DC} and ET_{OP} values shown.
2. The control value of inductance is measured at B_{OP} equal to or less than 10 gauss (10 mV @ 20 kHz) without DC current.
3. Inductance decreases with higher values of DC current and increases with lower values of DC current.
4. Inductance increases with increase in B_{OP} or ET_{OP}.
5. SIMPLE SWITCHER™ is a trademark of National Semiconductor Corporation.

INDUCTORS DESIGNED FOR NATIONAL'S 50 kHz SIMPLE SWITCHER™

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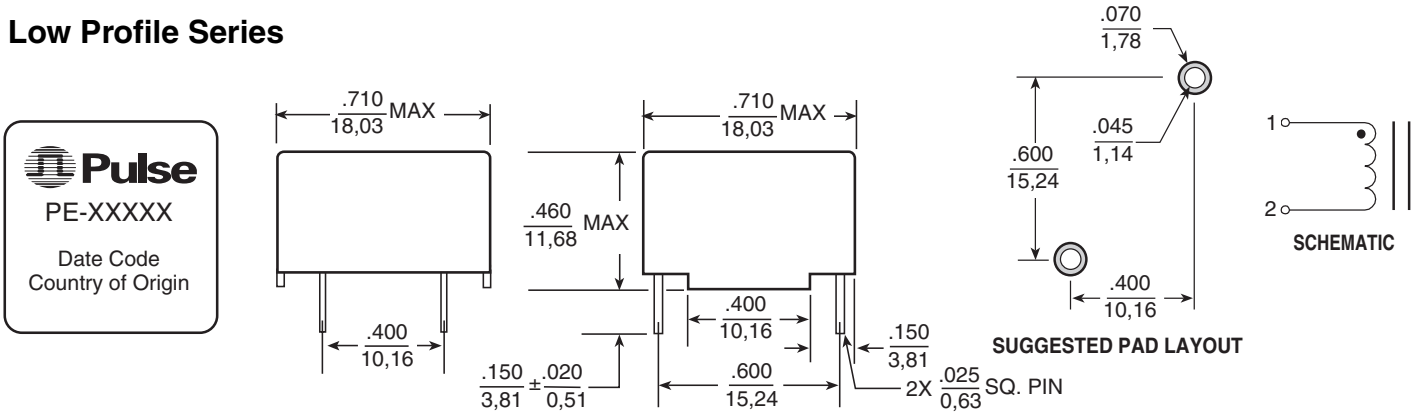
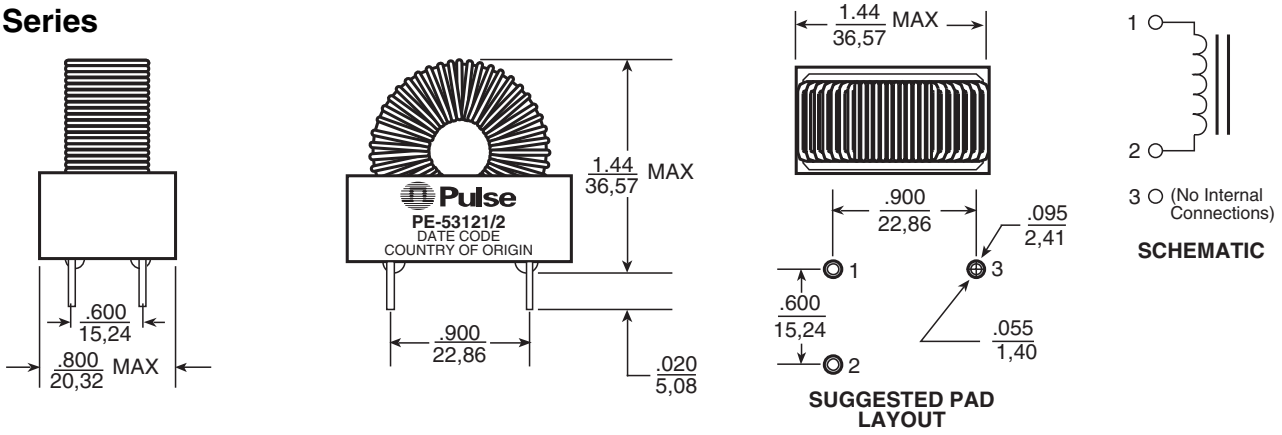
Mechanicals

Low Profile Series



Case Series

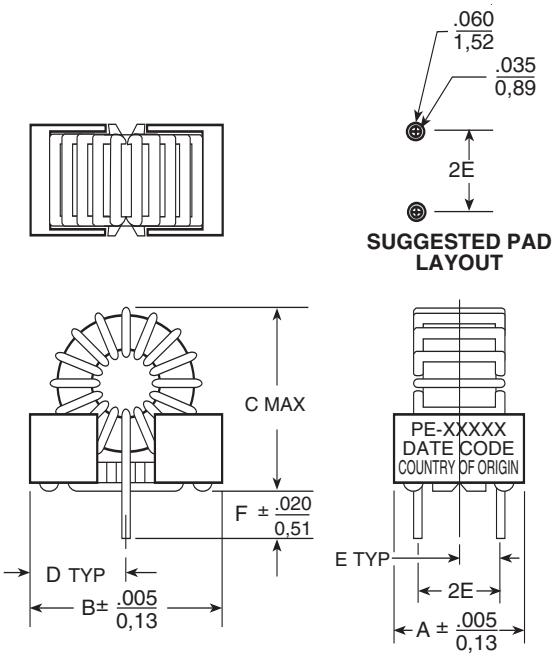


KlipMount Series

PKG	A	B	C	D	E	F
KM-2.0	.450 11,43	.650 16,51	.700 17,78	.325 8,26	.150 3,81	.130 3,30
KM-3.0	.450 11,43	.830 21,08	.950 24,13	.415 10,54	.150 3,81	.130 3,30
KM-4.0	.610 15,50	.970 24,64	1.10 27,94	.475 12,07	.225 5,72	.130 3,30
KM-5.0	.700 17,78	1.30 33,02	1.40 35,56	.625 15,88	.250 6,35	.130 3,30

Dimensions: Inches / mm

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



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