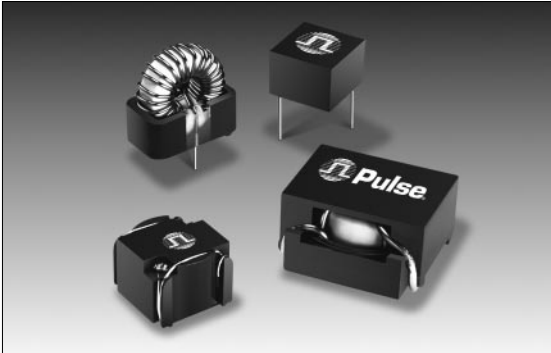





# INDUCTORS DESIGNED FOR NATIONAL'S 150 KHz SIMPLE SWITCHER™



-  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 -30° to +130° C

Pulse THT Part Number	Pulse <sup>5</sup> SMT Part Number	National Part Number	In Circuit Operating Parameters <sup>1</sup>			Nominal DCR (Ω)	Package	
			Nominal Inductance (μH)	Rated Current (Amps DC)	Max <sup>2</sup> ETop (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 <sup>(3)</sup>	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.  
5. Add suffix "T" to part for tape and reel packaging.

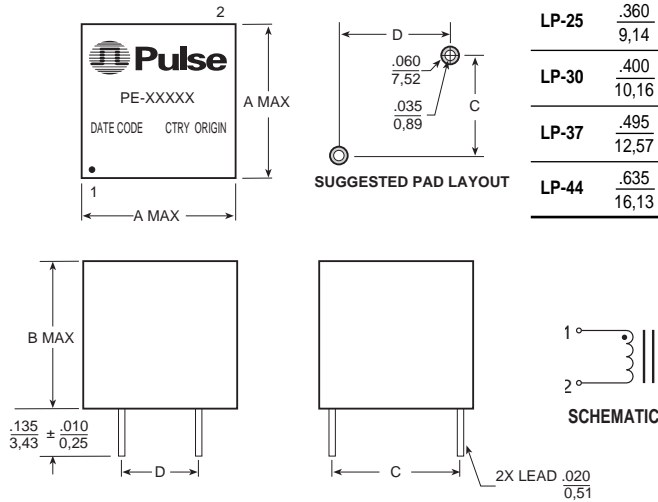
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# INDUCTORS DESIGNED FOR NATIONAL'S 150 KHz SIMPLE SWITCHER™



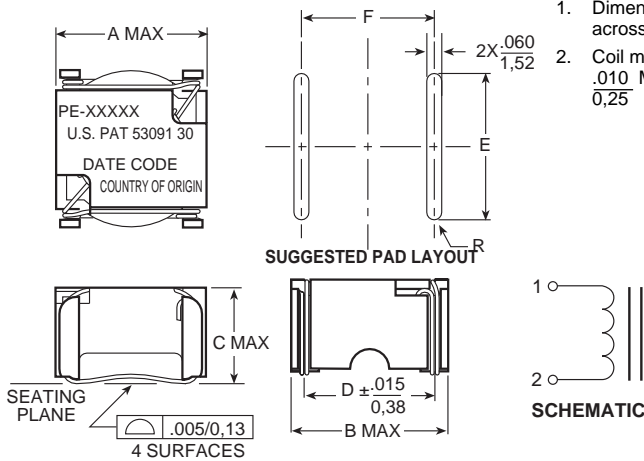
## Mechanicals

### 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

### LCI Series

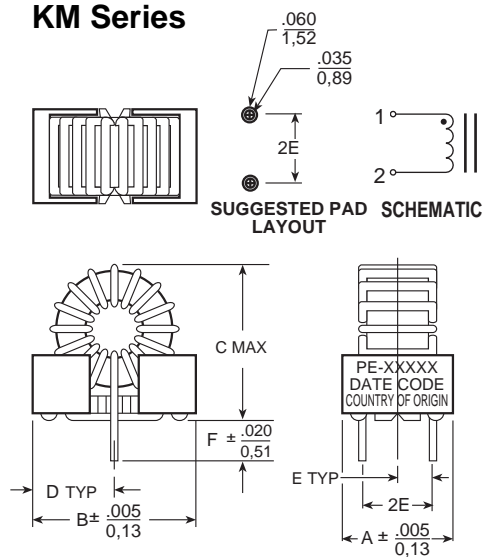


#### Notes:

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

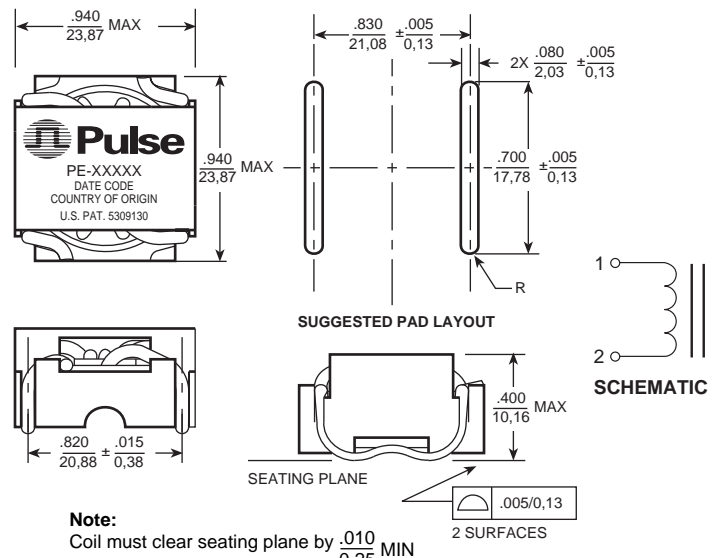
PKG	A	B	C	D	E	F
LCI-20	.340 8,64	.340 8,64	.270 6,86	.260 6,60	.300 7,62	.270 6,86
LCI-30	.435 11,05	.440 11,18	.360 9,14	.350 8,89	.400 10,16	.360 9,14
LCI-37	.565 14,35	.570 14,48	.360 9,14	.450 11,43	.520 13,21	.460 11,68
LCI-44	.600 15,24	.620 15,75	.390 9,91	.500 12,7	.550 13,97	.510 12,95
LCI-50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

### KM Series



Package	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	.600 15,24	.950 24,13	1.00 25,4	.475 12,07	.225 5,72	.130 3,30

### HCI-68



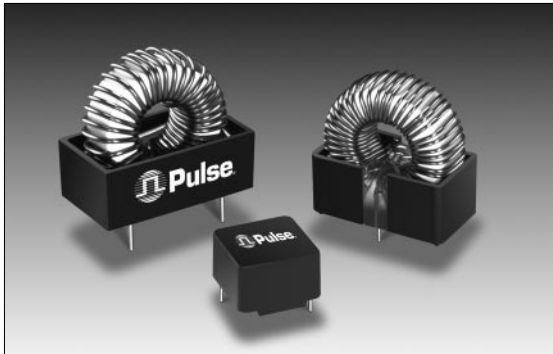
#### Note:




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

Dimensions: Inches  
mm

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

# INDUCTORS DESIGNED FOR NATIONAL'S 50 KHz SIMPLE SWITCHER™



- 
 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 <sup>(1)</sup>			Design Control Values			
Pulse Part Number	Inductor Code	Inductance Typical (μHy)	I <sub>DC</sub> (Amps)	ET <sub>OP</sub> (V-μSec)	Inductance No DC <sup>(2)</sup> (μHy ± 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:

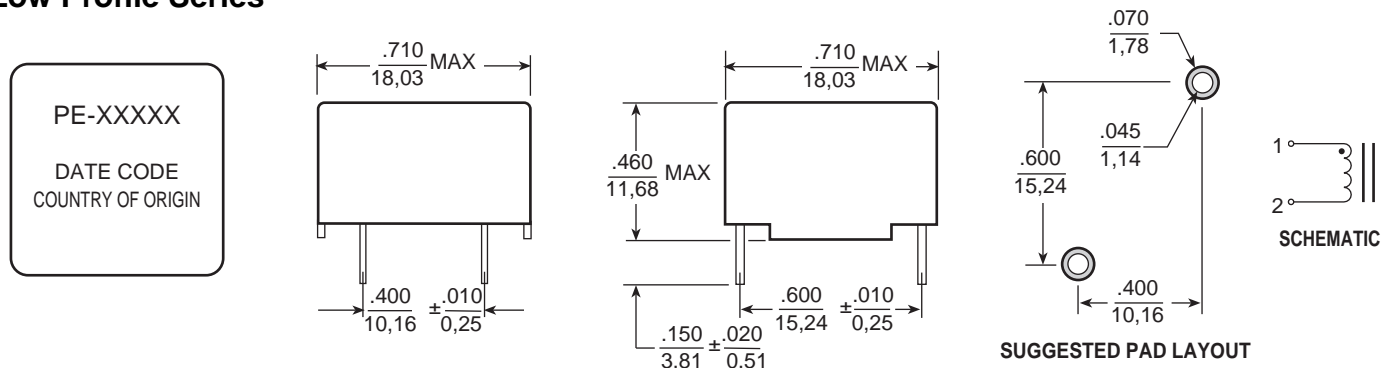
1. Typical inductance occurs at the I<sub>DC</sub> and ET<sub>OP</sub> values shown.
2. The control value of inductance is measured at B<sub>OP</sub> equal to or less than 10 gauss (10 mV @ 20 KHz) without DC current.
3. Inductance decreases with higher values of DC current and increases with lower values of DC current.
4. Inductance increases with increase in B<sub>OP</sub> or ET<sub>OP</sub>.
5. SIMPLE SWITCHER™ is a trademark of National Semiconductor Corporation.

# INDUCTORS DESIGNED FOR NATIONAL'S 50 KHz SIMPLE SWITCHER™

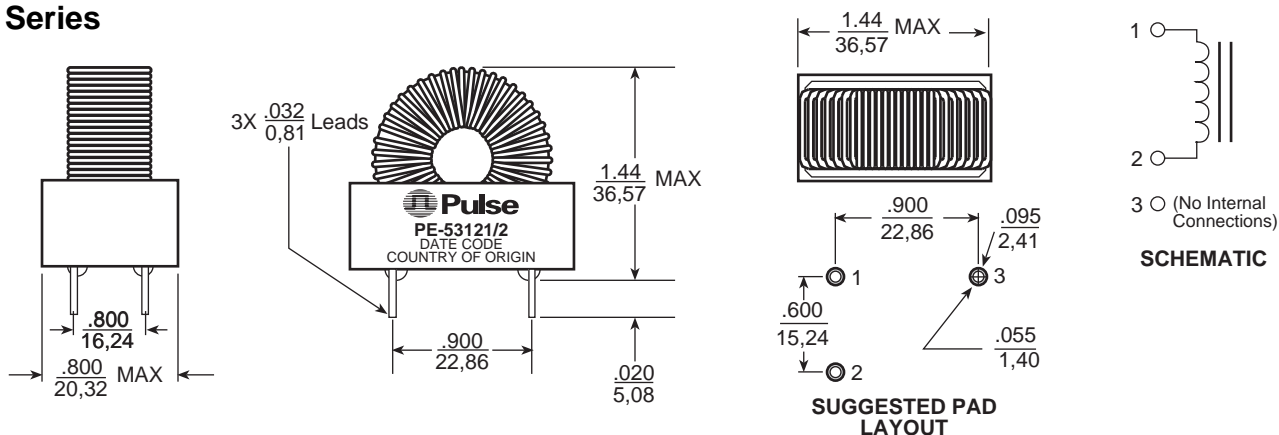


## Mechanicals

### Low Profile Series



### Case Series

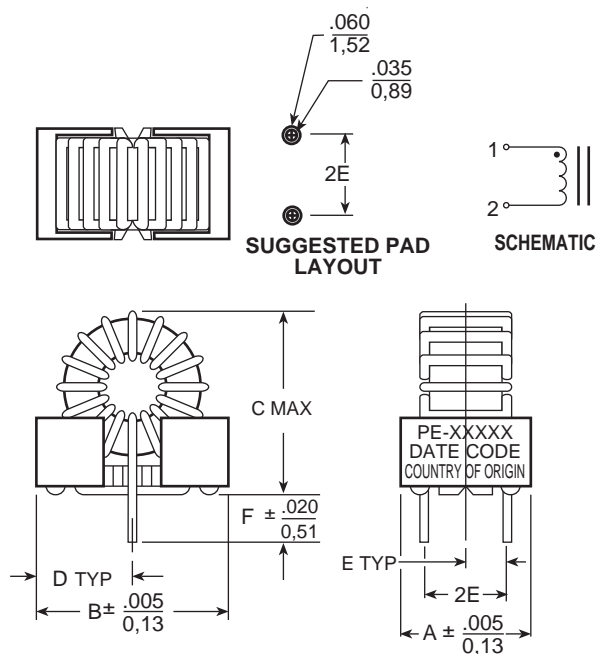


### KlipMount Series

PKG	A	B	C	D	E	F
KM-2.0	.450 11,43	.650 16,51	.700 17,73	.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	.600 15,24	.950 24,13	1.00 25,4	.475 12,07	.225 5,72	.130 3,30
KM-5.0	.700 17,73	1.30 33,02	1.40 35,56	.625 15,88	.250 6,35	.130 3,30

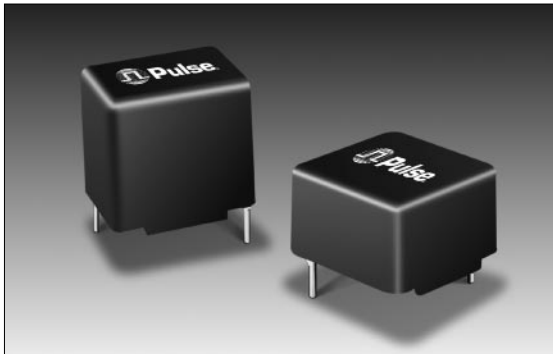
Unless otherwise specified,  
all tolerances are ±.010  
0,25

Dimensions: Inches  
mm



# STANDARD LOW POWER INDUCTORS

Designed for General Purpose Use — Switch Mode Power Converters and Ripple Filters



- High inductance stability with varying volt-seconds and load currents
- Compact, standard packages
- Low profile or vertical packages

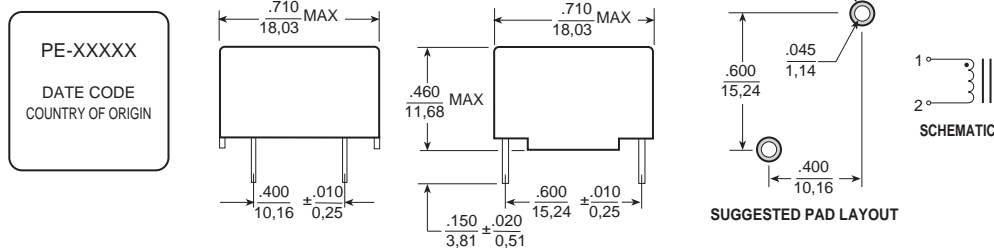
## Electrical Specifications @ 25°C — Operating Temperature -30°C to 130°C

REFERENCE OPERATING VALUES						DESIGN CONTROL VALUES		
Low Profile Part Number	Vertical Part Number	Inductance Typical (μHy)	I <sub>DC</sub> (AMPS) <sup>(1)</sup>	Maximum E <sub>TOP</sub> <sup>(2)</sup> (V-μSec)	Energy Storage (μJ) <sup>(1)</sup>	Inductance No DC (μHy ± 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

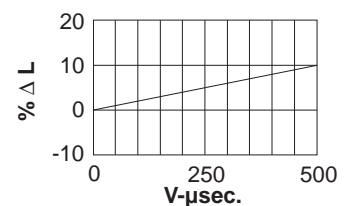
NOTES: 1. I<sub>DC</sub> rated for 40°C Temperature rise @ low E<sub>TOP</sub>. 2. Derate current 20% at this E<sub>TOP</sub>.

## Mechanicals

### Low Profile Package

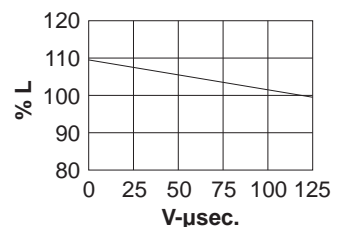
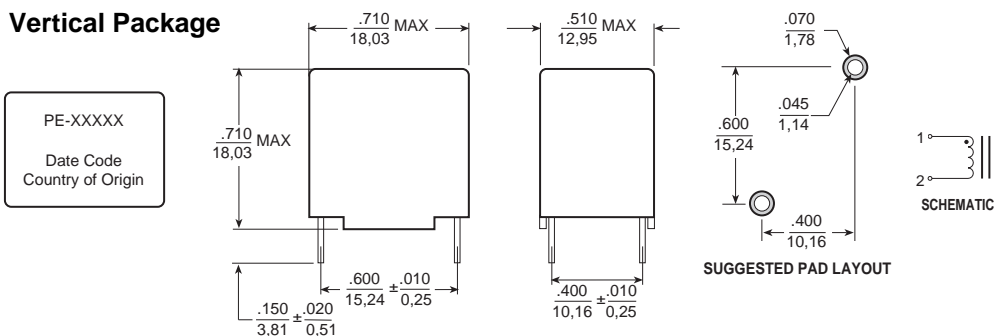


### Inductance Characteristics



Inductance Variance vs. E.T.

### Vertical Package



Inductance Variance vs. Load Current

Unless otherwise specified, all tolerances are ± .010 / 0.25

Dimensions: inches / mm

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