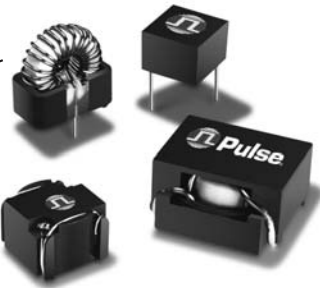


# THT/SMT POWER INDUCTORS

## Toroid - Designed for National's 150kHz 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 -40° to +130° C<sup>7</sup>

| Pulse <sup>6</sup><br>THT Part<br>Number | Pulse <sup>5,6</sup><br>SMT Part<br>Number | National<br>Part<br>Number | In Circuit Operating Parameters <sup>1</sup> |                                        |                                                  | Nominal<br>DCR<br>(Ω) | Package         |                  |                  |
|------------------------------------------|--------------------------------------------|----------------------------|----------------------------------------------|----------------------------------------|--------------------------------------------------|-----------------------|-----------------|------------------|------------------|
|                                          |                                            |                            | Nominal<br>Inductance<br>(μH)                | Rated<br>Current<br>(A <sub>DC</sub> ) | Max <sup>2</sup><br>E <sub>Top</sub><br>(V-μSec) |                       | Through<br>Hole | Surface<br>Mount | Lead<br>Diameter |
| PE-53801NL                               | PE-53801SNL                                | LM259X-L1                  | 259                                          | 0.13                                   | 23.1                                             | 3.4                   | LP-25           | LCI-20           | —                |
| PE-53802NL                               | PE-53802SNL                                | LM259X-L2                  | 178                                          | 0.16                                   | 16.5                                             | 2.8                   | LP-25           | LCI-20           | —                |
| PE-53803NL                               | PE-53803SNL                                | LM259X-L3                  | 118                                          | 0.2                                    | 13.2                                             | 1.8                   | LP-25           | LCI-20           | —                |
| PE-53804NL                               | PE-53804SNL                                | LM259X-L4                  | 79                                           | 0.25                                   | 9.9                                              | 1.5                   | LP-25           | LCI-20           | —                |
| PE-53805NL                               | PE-53805SNL                                | LM259X-L5                  | 55                                           | 0.3                                    | 6.6                                              | 1.0                   | LP-25           | LCI-20           | —                |
| PE-53806NL                               | PE-53806SNL                                | LM259X-L6                  | 39                                           | 0.34                                   | 6.6                                              | .80                   | LP-25           | LCI-20           | —                |
| PE-53807NL                               | PE-53807SNL                                | LM259X-L7                  | 26                                           | 0.45                                   | 6.6                                              | .62                   | LP-25           | LCI-20           | —                |
| PE-53808NL                               | PE-53808SNL                                | LM259X-L8                  | 374                                          | 0.2                                    | 75.9                                             | 2.7                   | LP-30           | LCI-30           | —                |
| PE-53809NL                               | PE-53809SNL                                | LM259X-L9                  | 256                                          | 0.25                                   | 33                                               | 2.2                   | LP-30           | LCI-30           | —                |
| PE-53810NL                               | PE-53810SNL                                | LM259X-L10                 | 176                                          | 0.3                                    | 26.4                                             | 1.4                   | LP-30           | LCI-30           | —                |
| PE-53811NL                               | PE-53811SNL                                | LM259X-L11                 | 118                                          | 0.38                                   | 19.8                                             | 1.2                   | LP-30           | LCI-30           | —                |
| PE-53812NL                               | PE-53812SNL                                | LM259X-L12                 | 78                                           | 0.46                                   | 16.5                                             | 0.8                   | LP-30           | LCI-30           | —                |
| PE-53813NL                               | PE-53813SNL                                | LM259X-L13                 | 55                                           | 0.56                                   | 13.2                                             | 0.5                   | LP-30           | LCI-30           | —                |
| PE-53814NL                               | PE-53814SNL                                | LM259X-L14                 | 39                                           | 0.68                                   | 9.9                                              | 0.3                   | LP-30           | LCI-30           | —                |
| PE-53815NL                               | PE-53815SNL                                | LM259X-L15                 | 26                                           | 0.84                                   | 6.6                                              | 0.2                   | LP-30           | LCI-30           | —                |
| PE-53816NL                               | PE-53816SNL                                | LM259X-L16                 | 17                                           | 1.02                                   | 6.6                                              | 0.1                   | LP-30           | LCI-30           | —                |
| PE-53817NL                               | PE-53817SNL                                | LM259X-L17                 | 375                                          | 0.36                                   | 75.9                                             | 1.3                   | LP-37           | LCI-37           | —                |
| PE-53818NL                               | PE-53818SNL                                | LM259X-L18                 | 252                                          | 0.44                                   | 49.5                                             | 0.9                   | LP-37           | LCI-37           | —                |
| PE-53819NL                               | PE-53819SNL                                | LM259X-L19                 | 173                                          | 0.54                                   | 36.3                                             | 0.6                   | LP-37           | LCI-37           | —                |
| PE-53820NL                               | PE-53820SNL                                | LM259X-L20                 | 115                                          | 0.67                                   | 29.7                                             | 0.4                   | LP-37           | LCI-37           | —                |
| PE-53821NL                               | PE-53821SNL                                | LM259X-L21                 | 78                                           | 0.82                                   | 23.1                                             | 0.3                   | LP-37           | LCI-37           | —                |
| PE-53822NL                               | PE-53822SNL                                | LM259X-L22                 | 54                                           | 1.0                                    | 16.5                                             | 0.2                   | LP-37           | LCI-37           | —                |
| PE-53823NL                               | PE-53823SNL                                | LM259X-L23                 | 38                                           | 1.2                                    | 13.2                                             | 0.1                   | LP-37           | LCI-37           | —                |
| PE-53824NL                               | PE-53824SNL                                | LM259X-L24                 | 26                                           | 1.48                                   | 9.9                                              | 0.1                   | LP-37           | LCI-37           | —                |
| PE-53825NL                               | PE-53825SNL                                | LM259X-L25                 | 18                                           | 1.81                                   | 9.9                                              | 0.06                  | LP-37           | LCI-37           | —                |
| PE-53826NL                               | PE-53826SNL                                | LM259X-L26                 | 377                                          | 0.68                                   | 75.9                                             | 1.0                   | LP-44           | LCI-44           | —                |
| PE-53827NL                               | PE-53827SNL                                | LM259X-L27                 | 248                                          | 0.83                                   | 72.6                                             | 0.6                   | LP-44           | LCI-44           | —                |
| PE-53828NL                               | PE-53828SNL                                | LM259X-L28                 | 168                                          | 1.02                                   | 56.1                                             | 0.4                   | LP-44           | LCI-44           | —                |
| PE-53829NL                               | PE-53829SNL                                | LM259X-L29                 | 112                                          | 1.26                                   | 42.9                                             | 0.3                   | LP-44           | LCI-44           | —                |
| PE-53830NL                               | PE-53830SNL                                | LM259X-L30                 | 77                                           | 1.54                                   | 33                                               | 0.2                   | LP-44           | LCI-44           | —                |
| PE-53831NL                               | PE-53831SNL                                | LM259X-L31                 | 53                                           | 1.87                                   | 26.4                                             | 0.13                  | LP-44           | LCI-44           | —                |
| PE-53932NL                               | PE-53932SNL                                | LM259X-L32                 | 37                                           | 2.24                                   | 19.8                                             | 0.10                  | LP-44           | LCI-44           | —                |
| PE-53933NL                               | PE-53933SNL                                | LM259X-L33                 | 24                                           | 2.74                                   | 16.5                                             | 0.07                  | LP-44           | LCI-44           | —                |
| PE-53934NL                               | PE-53934SNL                                | LM259X-L34                 | 17                                           | 3.0                                    | 13.2                                             | 0.05                  | KM-1.0          | LCI-44           | .023             |
| PE-53935NL                               | PE-53935SNL                                | LM259X-L35                 | 250                                          | 1.5                                    | 72.6                                             | 0.23                  | KM-3.0          | HCI-68           | .023             |
| PE-54036NL                               | PE-54036SNL                                | LM259X-L36                 | 168                                          | 1.81                                   | 75.9                                             | 0.18                  | KM-3.0          | HCI-68           | .023             |
| PE-54037NL                               | PE-54037SNL                                | LM259X-L37                 | 114                                          | 2.22                                   | 62.7                                             | 0.10                  | KM-3.0          | HCI-68           | .025             |
| PE-54038NL                               | PE-54038SNL                                | LM259X-L38                 | 77                                           | 2.7                                    | 52.8                                             | 0.09                  | KM-3.0          | HCI-68           | .025             |
| PE-54039NL                               | PE-54039SNL                                | LM259X-L39                 | 53                                           | 3.0                                    | 42.9                                             | 0.08                  | KM-3.0          | HCI-68           | .025             |
| PE-54040NL                               | PE-54040SNL                                | LM259X-L40                 | 38                                           | 3.0                                    | 29.7                                             | 0.05                  | KM-3.0          | HCI-68           | .028             |
| PE-54041NL                               | PE-54041SNL                                | LM259X-L41                 | 25                                           | 3.0                                    | 19.8                                             | 0.04                  | KM-2.0          | LCI-50           | .028             |
| PE-54042NL                               | —                                          | LM259X-L42                 | 167                                          | 2.5                                    | 75.9                                             | 0.14                  | KM-4.0          | —                | .028             |
| PE-54043NL                               | —                                          | LM259X-L43                 | 121                                          | 3.0                                    | 75.9                                             | 0.09                  | KM-4.0          | —                | .031             |
| PE-54044NL                               | PE-54044SNL                                | LM259X-L44                 | 77                                           | 3.0                                    | 59.4                                             | 0.08                  | KM-3.0          | HCI-68           | .025             |
| PE-53900NL                               | —                                          | LM258X-L                   | 19                                           | 4.5                                    | 32 <sup>3</sup>                                  | 0.02                  | KM-3.0          | —                | .035             |

#### NOTES:

- Inductance values may vary ±20%.
- E<sub>Top</sub> rated at 150kHz except where designated.
- E<sub>Top</sub> rated at 100kHz.
- SIMPLE SWITCHER™ is a trademark of National Semiconductor Corp.
- For SMT parts, optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PE-53801SNL becomes PE-53801SNLT). Pulse complies to industry standard tape and reel specification EIA481.
- The "NL" suffix indicates an RoHS-compliant part number. Non-NL suffixed parts are not necessarily RoHS compliant, but are electrically and mechanically equivalent to NL versions. If a part number does not have the "NL" suffix, but an RoHS compliant version is required, please contact Pulse for availability.
- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

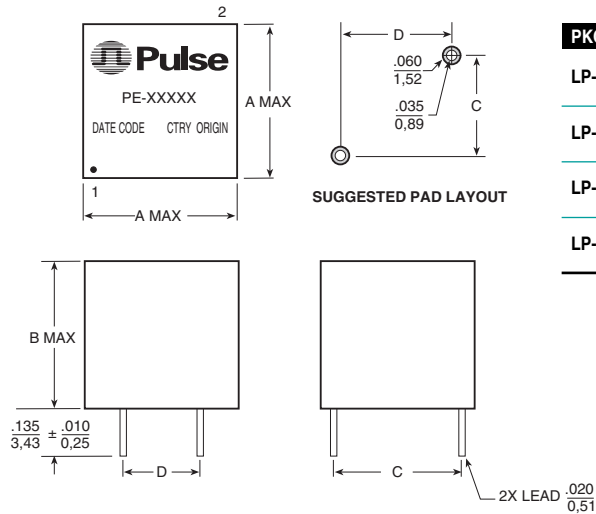
# THT/SMT POWER INDUCTORS

## Toroid - Designed for National's 150kHz Simple Switcher™



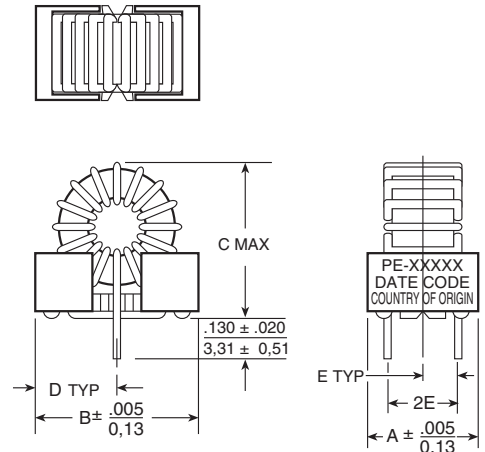
### Mechanicals

#### LP Series



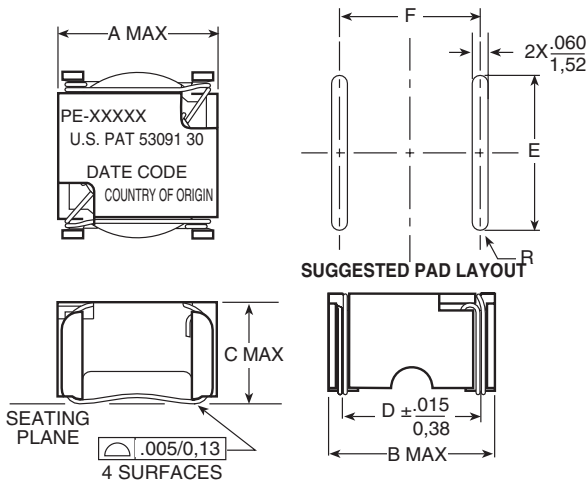
| PKG   | A                    | B                   | C                   | D                   |
|-------|----------------------|---------------------|---------------------|---------------------|
| LP-25 | $\frac{.360}{9,14}$  | $\frac{.310}{7,87}$ | $\frac{.250}{6,35}$ | $\frac{.250}{6,35}$ |
| LP-30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

#### KM Series



| PKG    | A                    | B                    | C                    | D                    | E                   |
|--------|----------------------|----------------------|----------------------|----------------------|---------------------|
| KM-1.0 | $\frac{.340}{8,64}$  | $\frac{.580}{14,73}$ | $\frac{.650}{16,51}$ | $\frac{.290}{7,37}$  | $\frac{.110}{2,79}$ |
| KM-2.0 | $\frac{.450}{11,43}$ | $\frac{.650}{16,51}$ | $\frac{.700}{17,73}$ | $\frac{.325}{8,26}$  | $\frac{.150}{3,81}$ |
| KM-3.0 | $\frac{.450}{11,43}$ | $\frac{.830}{21,08}$ | $\frac{.950}{24,13}$ | $\frac{.415}{10,54}$ | $\frac{.150}{3,81}$ |
| KM-4.0 | $\frac{.610}{15,50}$ | $\frac{.970}{24,64}$ | $\frac{1.10}{27,94}$ | $\frac{.475}{12,07}$ | $\frac{.225}{5,72}$ |

#### LCI Series

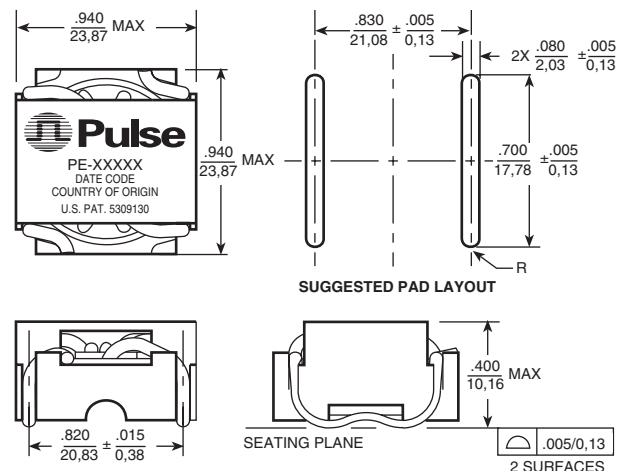


##### Notes:

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

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

#### HCI-68



##### Note:

Coil must clear seating plane by  $\frac{.010}{0,25}$  MIN

**Dimensions:**  $\frac{\text{Inches}}{\text{mm}}$

Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

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[PE-53807S](#) [PE-53933](#) [PE-53804](#) [PE-53816](#) [PE-53826](#) [PE-53817](#) [PE-54036S](#) [PE-53806S](#) [PE-53934](#) [PE-53815](#)  
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