



**THE DATASHEET OF
PE-54039NL**



SMT Power Inductor

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°C to +125°C

| Pulse THT Part Number | Pulse SMT Part Number | National Part Number | Turns Ratio | | | Nominal DCR (Ω) | Package | | |
|-----------------------------|-----------------------------|----------------------------|-------------------------------|--|-------------------------|-----------------------|-----------------|------------------|------------------|
| | | | Nominal Inductance (μH) | Rated Current (A _{DC}) | Max ETOP (V-μSec) | | Through Hole | Surface Mount | Lead 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 | - |

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| Pulse THT Part Number | Pulse SMT Part Number | National Part Number | Turns Ratio | | | Nominal DCR (Ω) | Package | | |
|-----------------------|-----------------------|----------------------|-------------------------|----------------------------------|-------------------|-----------------|--------------|---------------|---------------|
| | | | Nominal Inductance (μH) | Rated Current (A _{DC}) | Max ETOP (V-μSec) | | Through Hole | Surface Mount | Lead Diameter |
| 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 | - | LM259X-L | 19 | 4.5 | 32 ³ | 0.02 | KM-3.0 | - | .035 |

Notes:

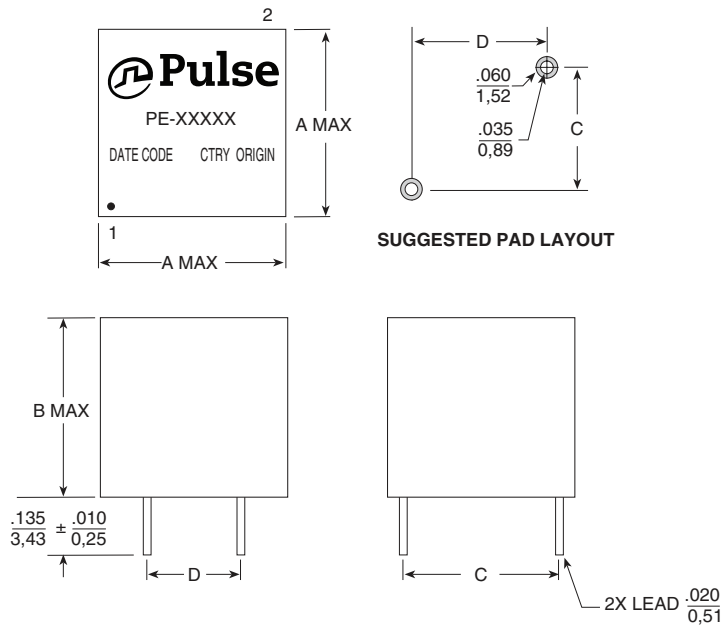
- Inductance values may vary ±20%.
- ETop rated at 150kHz except where designated.
- ETop rated at 100kHz.
- SIMPLE SWITCHER™ is a trademark of National Semiconductor Corp.
- For SMT parts, optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PE-53801SNL becomes 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.
* Contact Pulse for availability

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Mechanical

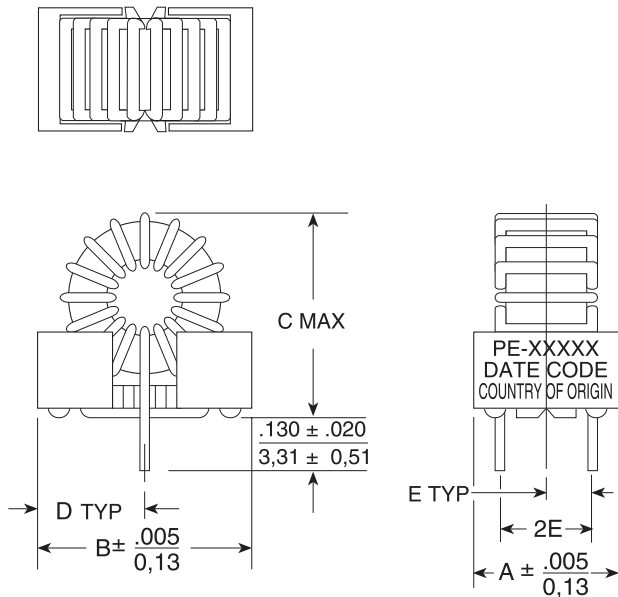
LP series



| 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 | $\frac{.635}{16,13}$ | $\frac{.365}{9,27}$ | $\frac{.500}{12,7}$ | $\frac{.300}{7,62}$ |

Mechanical

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 | $\frac{.610}{15,50}$ | $\frac{.970}{24,64}$ | $\frac{1.10}{27,94}$ | $\frac{.475}{12,07}$ | $\frac{.225}{5,72}$ |

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Mechanical

LCI Series



| 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 | .450 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 |

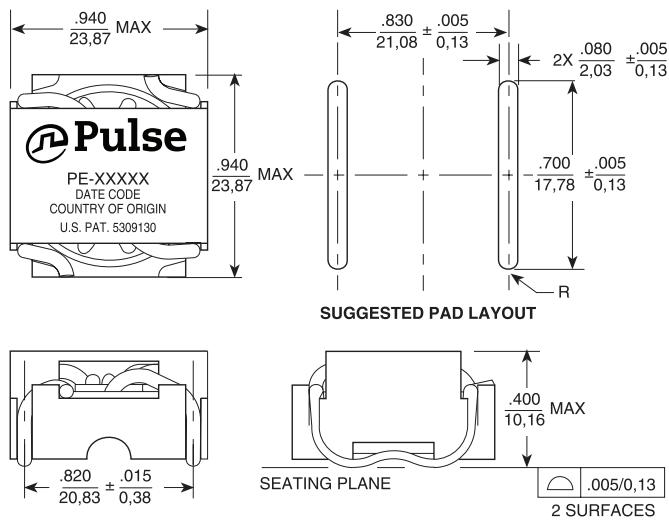
Notes:

Dimension "D" is measured across terminal blocks only.

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

Mechanical

HCI-68



Notes:

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

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

Looking for pricing, stock, or lifecycle information?

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 [Pulse Information](#)

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-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management