

Type LPX 85 °C Radial Snap-In Aluminum Electrolytic Capacitors

High Voltage, High Value Radial Led Snap-In



Type LPX radial leaded snap-in aluminum electrolytic capacitors are a compact design for high density packaging and are ideal for high voltage, switch mode power supply input filtering applications.

Highlights

- High voltage
- High Capacitance
- 85 °C
- Good for input filtering in consumer applications
- 22 to 35 mm diameter with 10 mm lead spacing

Specifications



Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

Capacitance Range: 56 to 2,700 µF
 Voltage Range: 160 to 450 Vdc
 Tolerance: ±20%
 Operating Temperature Range: -40 °C to +85 °C
 Dissipation Factor:

| DF at 120 Hz, +25 °C | | |
|----------------------|----------|-----------|
| Vdc | 160 -250 | 400 - 450 |
| DF (%) | 30 | 25 |

For values that are >1000 µF, the DF (%) increases 2% for every additional 1000 µF

DC Leakage Test:

$$I = 3\sqrt{CV}$$

C = capacitance in µF
 V = rated voltage
 I = leakage current in µA

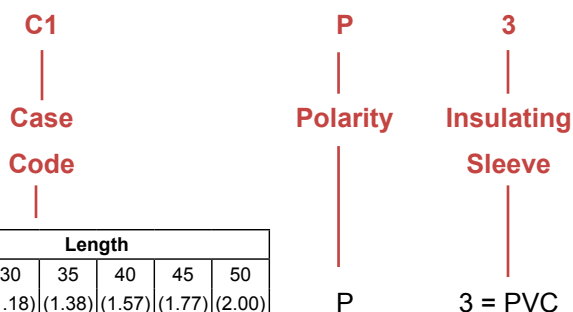
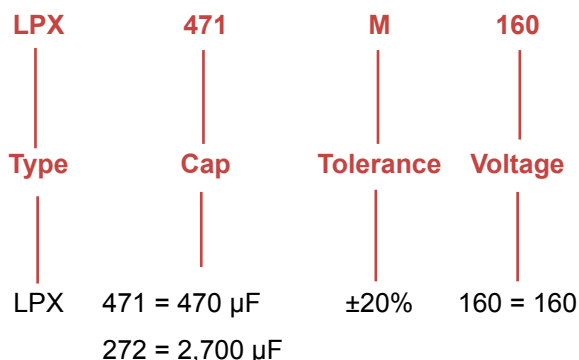
Frequency Ripple Multipliers:

| Rated Vdc | Ripple Multipliers | | |
|------------|--------------------|-------|--------------|
| | 120 Hz | 1 kHz | 10 to 50 kHz |
| 160 to 250 | 1.00 | 1.05 | 1.10 |
| 315 to 450 | 1.00 | 1.15 | 1.20 |

Temperature Ripple Multipliers:

| Temperature | Ripple Multiplier |
|-------------|-------------------|
| +75 °C | 1.60 |
| +65 °C | 2.20 |
| +55 °C | 2.60 |
| +55 °C | 3.00 |

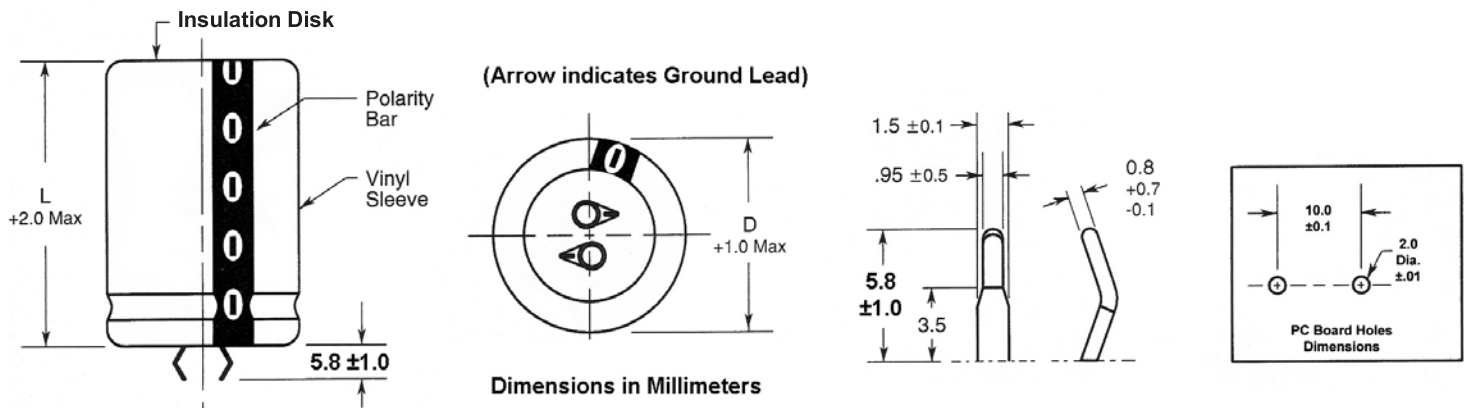
Part Numbering System



| Diameter | Length | | | | | |
|-----------|--------|--------|--------|--------|--------|--------|
| | 25 | 30 | 35 | 40 | 45 | 50 |
| mm | 25 | 30 | 35 | 40 | 45 | 50 |
| (in.) | (1.00) | (1.18) | (1.38) | (1.57) | (1.77) | (2.00) |
| 22 (.87) | A1 | A3 | A5 | A7 | A4 | A9 |
| 25 (1.00) | C1 | C3 | C5 | C7 | C4 | C9 |
| 30 (1.18) | E1 | E3 | E5 | E7 | E4 | E9 |
| 35 (1.38) | H1 | H3 | H5 | H7 | H4 | H9 |

Type LPX 85 °C Radial Snap-In Aluminum Electrolytic Capacitors

Outline Drawing



Ratings

| Cap (µF) | Catalog Part Number | Max ESR @ 120 Hz +25 °C (Ω) | Max Ripple @ 120 Hz +85 °C (A) | Size (Inches) | | Size (mm) | |
|-------------------------------|------------------------|--------------------------------------|---|------------------|-------|--------------|----|
| | | | | D | L | D | L |
| 160 Vdc; 200 Vdc Surge | | | | | | | |
| 390 | LPX391M160A1P3 | 0.51 | 1.3 | 0.866 | 0.984 | 22 | 25 |
| 470 | LPX471M160C1P3 | 0.423 | 1.6 | 0.984 | 0.984 | 25 | 25 |
| 470 | LPX471M160A3P3 | 0.423 | 1.6 | 0.866 | 1.181 | 22 | 30 |
| 560 | LPX561M160C3P3 | 0.355 | 1.8 | 0.984 | 1.181 | 25 | 30 |
| 560 | LPX561M160A5P3 | 0.355 | 1.8 | 0.866 | 1.378 | 22 | 35 |
| 680 | LPX681M160E1P3 | 0.293 | 2.0 | 1.181 | 0.984 | 30 | 25 |
| 680 | LPX681M160A7P3 | 0.293 | 2.1 | 0.866 | 1.575 | 22 | 40 |
| 680 | LPX681M160C3P3 | 0.293 | 2.0 | 0.984 | 1.181 | 25 | 30 |
| 820 | LPX821M160C5P3 | 0.243 | 2.0 | 0.984 | 1.378 | 25 | 35 |
| 820 | LPX821M160E3P3 | 0.243 | 2.3 | 1.181 | 1.181 | 30 | 30 |
| 820 | LPX821M160A4P3 | 0.243 | 2.4 | 0.866 | 1.772 | 22 | 45 |
| 1,000 | LPX102M160C7P3 | 0.199 | 2.6 | 0.984 | 1.575 | 25 | 40 |
| 1,000 | LPX102M160H1P3 | 0.199 | 2.3 | 1.378 | 0.984 | 35 | 25 |
| 1,000 | LPX102M160E3P3 | 0.199 | 2.5 | 1.181 | 1.181 | 30 | 30 |
| 1,200 | LPX122M160C4P3 | 0.166 | 3.0 | 0.984 | 1.772 | 25 | 45 |
| 1,200 | LPX122M160H3P3 | 0.166 | 2.6 | 1.378 | 1.181 | 35 | 30 |
| 1,200 | LPX122M160E5P3 | 0.166 | 2.9 | 1.181 | 1.378 | 30 | 35 |
| 1,500 | LPX152M160H5P3 | 0.133 | 3.3 | 1.378 | 1.378 | 35 | 35 |
| 1,500 | LPX152M160E7P3 | 0.133 | 3.3 | 1.181 | 1.575 | 30 | 40 |
| 1,800 | LPX182M160E9P3 | 0.111 | 4.0 | 1.181 | 1.969 | 30 | 50 |
| 1,800 | LPX182M160H7P3 | 0.111 | 3.7 | 1.378 | 1.575 | 35 | 40 |
| 2,200 | LPX222M160H4P3 | 0.090 | 4.2 | 1.378 | 1.772 | 35 | 45 |
| 2,700 | LPX272M160H9P3 | 0.074 | 4.6 | 1.378 | 1.969 | 35 | 50 |
| 200 Vdc; 250 Vdc Surge | | | | | | | |
| 270 | LPX271M200A1P3 | 0.737 | 1.2 | 0.866 | 0.984 | 22 | 25 |
| 390 | LPX391M200C1P3 | 0.510 | 1.6 | 0.984 | 0.984 | 25 | 25 |
| 390 | LPX391M200A3P3 | 0.510 | 1.6 | 0.866 | 1.181 | 22 | 30 |
| 470 | LPX471M200C3P3 | 0.423 | 1.8 | 0.984 | 1.181 | 25 | 30 |
| 470 | LPX471M200A5P3 | 0.423 | 1.8 | 0.866 | 1.378 | 22 | 35 |
| 560 | LPX561M200A7P3 | 0.355 | 2.1 | 0.866 | 1.575 | 22 | 40 |
| 560 | LPX561M200C5P3 | 0.355 | 2.1 | 0.984 | 1.378 | 25 | 35 |
| 560 | LPX561M200E1P3 | 0.355 | 1.9 | 1.181 | 0.984 | 30 | 25 |

| Cap (µF) | Catalog Part Number | Max ESR @ 120 Hz +25 °C (Ω) | Max Ripple @ 120 Hz +85 °C (A) | Size (Inches) | | Size (mm) | |
|-------------------------------|------------------------|--------------------------------------|---|------------------|-------|--------------|----|
| | | | | D | L | D | L |
| 200 Vdc; 250 Vdc Surge | | | | | | | |
| 680 | LPX681M200C7P3 | 0.293 | 2.5 | 0.984 | 1.575 | 25 | 40 |
| 680 | LPX681M200A4P3 | 0.293 | 2.4 | 0.866 | 1.772 | 22 | 45 |
| 680 | LPX681M200E3P3 | 0.293 | 2.3 | 1.181 | 1.181 | 30 | 30 |
| 820 | LPX821M200E5P3 | 0.243 | 2.7 | 1.181 | 1.378 | 30 | 35 |
| 820 | LPX821M200H3P3 | 0.243 | 2.7 | 1.378 | 1.181 | 35 | 30 |
| 820 | LPX821M200C4P3 | 0.243 | 2.8 | 0.984 | 1.772 | 25 | 45 |
| 1,000 | LPX102M200H3P3 | 0.199 | 2.7 | 1.378 | 1.181 | 35 | 30 |
| 1,000 | LPX102M200E7P3 | 0.199 | 3.1 | 1.181 | 1.575 | 30 | 40 |
| 1,200 | LPX122M200H5P3 | 0.166 | 3.1 | 1.378 | 1.378 | 35 | 35 |
| 1,200 | LPX122M200E4P3 | 0.166 | 3.5 | 1.181 | 1.772 | 30 | 45 |
| 1,500 | LPX152M200E9P3 | 0.133 | 4 | 1.181 | 1.969 | 30 | 50 |
| 1,500 | LPX152M200H7P3 | 0.133 | 3.6 | 1.378 | 1.575 | 35 | 40 |
| 1,800 | LPX182M200H4P3 | 0.111 | 4 | 1.378 | 1.772 | 35 | 45 |
| 2,200 | LPX222M200H9P3 | 0.09 | 4.5 | 1.378 | 1.969 | 35 | 50 |
| 250 Vdc; 300 Vdc Surge | | | | | | | |
| 270 | LPX271M250A3P3 | 0.737 | 1.4 | 0.866 | 1.181 | 22 | 30 |
| 270 | LPX271M250C1P3 | 0.737 | 1.4 | 0.984 | 0.984 | 25 | 25 |
| 330 | LPX331M250C3P3 | 0.603 | 1.7 | 0.984 | 1.181 | 25 | 30 |
| 330 | LPX331M250A5P3 | 0.603 | 1.7 | 0.866 | 1.378 | 22 | 35 |
| 390 | LPX391M250E1P3 | 0.51 | 1.8 | 1.181 | 0.984 | 30 | 25 |
| 390 | LPX391M250A7P3 | 0.51 | 1.9 | 0.866 | 1.575 | 22 | 40 |
| 390 | LPX391M250C3P3 | 0.51 | 1.8 | 0.984 | 1.181 | 25 | 30 |
| 470 | LPX471M250A4P3 | 0.423 | 2.2 | 0.866 | 1.772 | 22 | 45 |
| 470 | LPX471M250C5P3 | 0.423 | 2.1 | 0.984 | 1.378 | 25 | 35 |
| 470 | LPX471M250E3P3 | 0.423 | 2.1 | 1.181 | 1.181 | 30 | 30 |
| 560 | LPX561M250A9P3 | 0.355 | 2.5 | 0.866 | 1.969 | 22 | 50 |
| 560 | LPX561M250H1P3 | 0.355 | 2.1 | 1.378 | 0.984 | 35 | 25 |
| 560 | LPX561M250E3P3 | 0.355 | 2.2 | 1.181 | 1.181 | 30 | 30 |
| 560 | LPX561M250C7P3 | 0.355 | 2.4 | 0.984 | 1.575 | 25 | 40 |
| 680 | LPX681M250H3P3 | 0.293 | 2.5 | 1.378 | 1.181 | 35 | 30 |
| 680 | LPX681M250C4P3 | 0.293 | 2.7 | 0.984 | 1.772 | 25 | 45 |
| 680 | LPX681M250E5P3 | 0.293 | 2.6 | 1.181 | 1.378 | 30 | 35 |

Type LPX 85 °C Radial Snap-In Aluminum Electrolytic Capacitors

| Cap (µF) | Catalog Part Number | Max ESR @ 120 Hz +25 °C (Ω) | Max Ripple @ 120 Hz +85 °C (A) | Size (Inches) | | Size (mm) | |
|-------------------------------|------------------------|--------------------------------------|---|-------------------------------|-------|--------------|----|
| | | | | D | L | D | L |
| | | | | 250 Vdc; 300 Vdc Surge | | | |
| 820 | LPX821M250H5P3 | 0.243 | 3.0 | 1.378 | 1.378 | 35 | 35 |
| 820 | LPX821M250E7P3 | 0.243 | 3.0 | 1.181 | 1.575 | 30 | 40 |
| 1,000 | LPX102M250H7P3 | 0.199 | 3.4 | 1.378 | 1.575 | 35 | 40 |
| 1,000 | LPX102M250E4P3 | 0.199 | 3.4 | 1.181 | 1.772 | 30 | 45 |
| 1,200 | LPX122M250H4P3 | 0.166 | 3.8 | 1.378 | 1.772 | 35 | 45 |
| 1,500 | LPX152M250H9P3 | 0.133 | 4.2 | 1.378 | 1.969 | 35 | 50 |
| 350 Vdc; 400 Vdc Surge | | | | | | | |
| 100 | LPX101M350A1P3 | 1.989 | 0.6 | 0.866 | 0.984 | 22 | 25 |
| 120 | LPX121M350C1P3 | 1.658 | 0.7 | 0.984 | 0.984 | 25 | 25 |
| 120 | LPX121M350A3P3 | 1.658 | 0.7 | 0.866 | 1.181 | 22 | 30 |
| 150 | LPX151M350C3P3 | 1.326 | 0.8 | 0.984 | 1.181 | 25 | 30 |
| 150 | LPX151M350A5P3 | 1.326 | 0.8 | 0.866 | 1.378 | 22 | 35 |
| 180 | LPX181M350A7P3 | 1.105 | 0.9 | 0.866 | 1.575 | 22 | 40 |
| 180 | LPX181M350C3P3 | 1.105 | 0.9 | 0.984 | 1.181 | 25 | 30 |
| 180 | LPX181M350E1P3 | 1.105 | 1.0 | 1.181 | 0.984 | 30 | 25 |
| 220 | LPX221M350A4P3 | 0.904 | 1.1 | 0.866 | 1.772 | 22 | 45 |
| 220 | LPX221M350E3P3 | 0.904 | 1.1 | 1.181 | 1.181 | 30 | 30 |
| 220 | LPX221M350C5P3 | 0.904 | 1.1 | 0.984 | 1.378 | 25 | 35 |
| 270 | LPX271M350E3P3 | 0.737 | 1.2 | 1.181 | 1.181 | 30 | 30 |
| 270 | LPX271M350C7P3 | 0.737 | 1.2 | 0.984 | 1.575 | 25 | 40 |
| 270 | LPX271M350A9P3 | 0.737 | 1.3 | 0.866 | 1.969 | 22 | 50 |
| 270 | LPX271M350H1P3 | 0.737 | 1.3 | 1.378 | 0.984 | 35 | 25 |
| 330 | LPX331M350C4P3 | 0.603 | 1.4 | 0.984 | 1.772 | 25 | 45 |
| 330 | LPX331M350H3P3 | 0.603 | 1.4 | 1.378 | 1.181 | 35 | 30 |
| 330 | LPX331M350E5P3 | 0.603 | 1.4 | 1.181 | 1.378 | 30 | 35 |
| 390 | LPX391M350H3P3 | 0.51 | 1.6 | 1.378 | 1.181 | 35 | 30 |
| 390 | LPX391M350E7P3 | 0.51 | 1.8 | 1.181 | 1.575 | 30 | 40 |
| 470 | LPX471M350H5P3 | 0.423 | 1.8 | 1.378 | 1.378 | 35 | 35 |
| 470 | LPX471M350E4P3 | 0.423 | 1.9 | 1.181 | 1.772 | 30 | 45 |
| 560 | LPX561M350H7P3 | 0.355 | 2.1 | 1.378 | 1.575 | 35 | 40 |
| 680 | LPX681M350H4P3 | 0.293 | 2.4 | 1.378 | 1.772 | 35 | 45 |
| 400 Vdc; 450 Vdc Surge | | | | | | | |
| 82 | LPX820M400A1P3 | 2.426 | 0.6 | 0.866 | 0.984 | 22 | 25 |
| 100 | LPX101M400A3P3 | 1.989 | 0.7 | 0.866 | 1.181 | 22 | 30 |
| 120 | LPX121M400A3P3 | 1.658 | 0.7 | 0.866 | 1.181 | 22 | 30 |
| 120 | LPX121M400C1P3 | 1.658 | 0.7 | 0.984 | 0.984 | 25 | 25 |
| 150 | LPX151M400C3P3 | 1.326 | 0.9 | 0.984 | 1.181 | 25 | 30 |
| 180 | LPX181M400A7P3 | 1.105 | 1.0 | 0.866 | 1.575 | 22 | 40 |

| Cap (µF) | Catalog Part Number | Max ESR @ 120 Hz +25 °C (Ω) | Max Ripple @ 120 Hz +85 °C (A) | Size (Inches) | | Size (mm) | |
|-------------------------------|------------------------|--------------------------------------|---|-------------------------------|-------|--------------|----|
| | | | | D | L | D | L |
| | | | | 400 Vdc; 450 Vdc Surge | | | |
| 180 | LPX181M400C5P3 | 1.105 | 1.0 | 0.984 | 1.378 | 25 | 35 |
| 220 | LPX221M400E3P3 | 0.904 | 1.2 | 1.181 | 1.181 | 30 | 30 |
| 220 | LPX221M400H1P3 | 0.904 | 1.2 | 1.378 | 0.984 | 35 | 25 |
| 220 | LPX221M400C7P3 | 0.904 | 1.2 | 0.984 | 1.575 | 25 | 40 |
| 270 | LPX271M400C4P3 | 0.737 | 1.4 | 0.984 | 1.772 | 25 | 45 |
| 270 | LPX271M400E5P3 | 0.737 | 1.4 | 1.181 | 1.378 | 30 | 35 |
| 270 | LPX271M400H3P3 | 0.737 | 1.4 | 1.378 | 1.181 | 35 | 30 |
| 330 | LPX331M400E7P3 | 0.603 | 1.6 | 1.181 | 1.575 | 30 | 40 |
| 330 | LPX331M400H3P3 | 0.603 | 1.5 | 1.378 | 1.181 | 35 | 30 |
| 390 | LPX391M400H5P3 | 0.510 | 1.8 | 1.378 | 1.378 | 35 | 35 |
| 390 | LPX391M400E4P3 | 0.510 | 1.8 | 1.181 | 1.772 | 30 | 45 |
| 470 | LPX471M400H7P3 | 0.423 | 2.0 | 1.378 | 1.575 | 35 | 40 |
| 470 | LPX471M400E9P3 | 0.423 | 2.0 | 1.181 | 1.969 | 30 | 50 |
| 560 | LPX561M400H4P3 | 0.355 | 2.3 | 1.378 | 1.772 | 35 | 45 |
| 680 | LPX681M400H9P3 | 0.293 | 2.6 | 1.378 | 1.969 | 35 | 50 |
| 450 Vdc; 500 Vdc Surge | | | | | | | |
| 56 | LPX560M450A1P3 | 3.553 | 0.5 | 0.866 | 0.984 | 22 | 25 |
| 68 | LPX680M450A3P3 | 2.926 | 0.6 | 0.866 | 1.181 | 22 | 30 |
| 82 | LPX820M450C1P3 | 2.426 | 0.7 | 0.984 | 0.984 | 25 | 25 |
| 82 | LPX820M450A3P3 | 2.426 | 0.7 | 0.866 | 1.181 | 22 | 30 |
| 100 | LPX101M450C3P3 | 1.989 | 0.8 | 0.984 | 1.181 | 25 | 30 |
| 100 | LPX101M450A5P3 | 1.989 | 0.8 | 0.866 | 1.378 | 22 | 35 |
| 120 | LPX121M450E1P3 | 1.658 | 0.9 | 1.181 | 0.984 | 30 | 25 |
| 120 | LPX121M450C5P3 | 1.658 | 1.0 | 0.984 | 1.378 | 25 | 35 |
| 120 | LPX121M450A7P3 | 1.658 | 0.9 | 0.866 | 1.575 | 22 | 40 |
| 150 | LPX151M450A9P3 | 1.326 | 1.1 | 0.866 | 1.969 | 22 | 50 |
| 150 | LPX151M450E3P3 | 1.326 | 1.1 | 1.181 | 1.181 | 30 | 30 |
| 150 | LPX151M450C7P3 | 1.326 | 1.1 | 0.984 | 1.575 | 25 | 40 |
| 180 | LPX181M450C4P3 | 1.105 | 1.3 | 0.984 | 1.772 | 25 | 45 |
| 180 | LPX181M450H1P3 | 1.105 | 1.2 | 1.378 | 0.984 | 35 | 25 |
| 180 | LPX181M450E7P3 | 1.105 | 1.4 | 1.181 | 1.575 | 30 | 40 |
| 220 | LPX221M450H3P3 | 0.904 | 1.5 | 1.378 | 1.181 | 35 | 30 |
| 220 | LPX221M450C9P3 | 0.904 | 1.5 | 0.984 | 1.969 | 25 | 50 |
| 220 | LPX221M450E7P3 | 0.904 | 1.6 | 1.181 | 1.575 | 30 | 40 |
| 270 | LPX271M450E4P3 | 0.737 | 1.7 | 1.181 | 1.772 | 30 | 45 |
| 270 | LPX271M450H5P3 | 0.737 | 1.7 | 1.378 | 1.378 | 35 | 35 |
| 330 | LPX331M450H7P3 | 0.603 | 2.0 | 1.378 | 1.575 | 35 | 40 |
| 330 | LPX331M450E9P3 | 0.603 | 2.0 | 1.181 | 1.969 | 30 | 50 |
| 390 | LPX391M450H4P3 | 0.510 | 2.2 | 1.378 | 1.772 | 35 | 45 |
| 470 | LPX471M450H9P3 | 0.423 | 2.5 | 1.378 | 1.969 | 35 | 50 |

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