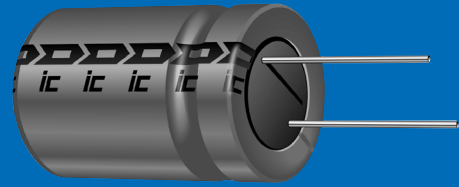


RLS

+85°C Low Leakage Radial Lead Aluminum Electrolytic Capacitors



For timing applications

FEATURES

- *Alternative to Tantalum Capacitors*
- *Low Leakage Current*
- *Capacitance Range: .1 μ F to 1,000 μ F*
- *Voltage Range: 10 WVDC to 50 WVDC*
- *Solvent Tolerant End Seals Standard*

SPECIFICATIONS

| | | | | | | | | | | | | | | | | |
|---|--------------------------------|---|-----------|-----------|-----------|-----------|------|-------------------------|-----|-----|-----|--|--|--|--|--|
| Capacitance Tolerance | | $\pm 20\%$ at 120Hz, 25°C | | | | | | | | | | | | | | |
| Operating Temperature Range | | -40°C to +85°C | | | | | | | | | | | | | | |
| Dissipation Factor 120Hz, 25°C | WVDC | 10 | 16 | 25 | 35 | 50 | | | | | | | | | | |
| | tan δ | .2 | .16 | .14 | .12 | .10 | | | | | | | | | | |
| Impedance Ratio (Max.) 120Hz | WVDC | 10 | 16 | 25 | 35 | 50 | | | | | | | | | | |
| | -25°C/25°C | 3 | 2 | 2 | 2 | 2 | | | | | | | | | | |
| | -40°C/25°C | 6 | 4 | 4 | 3 | 3 | | | | | | | | | | |
| Leakage Current | WVDC | ≤ 50 WVDC | | | | | | | | | | | | | | |
| | Time | 2 minutes | | | | | | | | | | | | | | |
| | | .002CV or .4 μ A whichever is greater | | | | | | | | | | | | | | |
| Load Life | | 2,000 hours, at 85°C with rated voltage | | | | | | | | | | | | | | |
| | | Capacitance change Dissipation factor Leakage current | | | | | | | | | | $\leq 20\%$ of initial measured value $\leq 200\%$ of initial specified value \leq initial specified value | | | | |
| Shelf Life | | 1,000 hours at + 85°C with no voltage applied. Units will meet load life specification | | | | | | | | | | | | | | |
| Ripple Current Multipliers | | Frequency (Hz) | | | | | | Temperature (°C) | | | | | | | | |
| | | Capacitance (μ F) | 50 | 120 | 400 | 1K | 10K | 100K | +85 | +70 | +60 | +45 | | | | |
| | | $C \leq 10$ | 0.8 | 1.0 | 1.3 | 1.45 | 1.65 | 1.7 | 1.0 | 1.3 | 1.5 | 1.8 | | | | |
| | | $10 < C \leq 100$ | 0.8 | 1.0 | 1.23 | 1.36 | 1.48 | 1.53 | 1.0 | 1.3 | 1.5 | 1.8 | | | | |
| | | $100 < C \leq 1000$ | 0.8 | 1.0 | 1.16 | 1.25 | 1.35 | 1.38 | 1.0 | 1.3 | 1.5 | 1.8 | | | | |
| $C > 1000$ | 0.8 | 1.0 | 1.11 | 1.17 | 1.25 | 1.28 | 1.0 | 1.3 | 1.5 | 1.8 | | | | | | |

SPECIAL ORDER OPTIONS

(See pages 33 thru 37)

- *Special tolerances: $\pm 10\%$ (K), $-10\% + 30\%$ (Q)*
- *Tape and Reel/Ammo-Pack*
- *Cut, Formed, Cut and Formed, and Snap In Leads*



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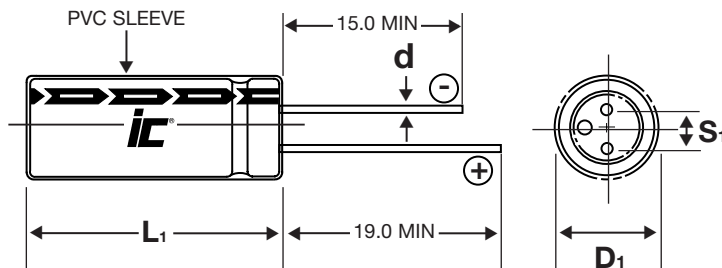
Aluminum Electrolytic

PHYSICAL DIMENSIONS

| WVDC (μ F) (SV) | 10 (13) | 16 (20) | 25 (32) | 35 (44) | 50 (63) |
|----------------------------|------------|------------|------------|------------|------------|
| 0.1 | | | | | 5x11 |
| 0.15 | | | | | 5x11 |
| 0.22 | | | | | 5x11 |
| 0.33 | | | | | 5x11 |
| 0.47 | | | | | 5x11 |
| 0.68 | | | | | 5x11 |
| 1 | | | | | 5x11 |
| 1.5 | | | | | 5x11 |
| 2.2 | | | | | 5x11 |
| 3.3 | | | | | 5x11 |
| 4.7 | | | | | 5x11 |
| 6.8 | | | | | 5x11 |
| 10 | | | | 5x11 | 5x11 |
| 15 | | | | 5x11 | 6.3x11 |
| 22 | | 5x11 | 5x11 | 6.3x11 | 6.3x11 |
| 33 | | 5x11 | | 6.3x11 | 8x11.5 |
| 47 | 5x11 | 6.3x11 | 6.3x11 | | 8x11.5 |
| 68 | | 6.3x11 | | 8x11.5 | 10x12.5 |
| 100 | 6.3x11 | 8x11.5 | 8x11.5 | 10x12.5 | 10x16 |
| 150 | | 8x11.5 | 10x12.5 | 10x16 | 10x20 |
| 220 | 8x11.5 | 10x12.5 | 10x16 | 10x20 | 12.5x20 |
| 330 | 10x12.5 | 10x16 | 10x20 | 12.5x20 | |
| 470 | 10x16 | 10x20 | | | |
| 1000 | 12.5x20 | | | | |

Convert to inches, divide by 25.4

DxL(mm)



NOTE: Case Vent is standard on all diameter ≥ 8.0 mm

LEAD INFORMATION VS. CASE DIAMETER

| D | 5.0 | 6.3 | 8.0 | 10.0 | 12.5 |
|---|-----|-----|-----|------|------|
| S | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 |
| d | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 |
| B | 0.5 | 0.5 | 0.5 | 0.5 | 0.8 |

$D \leq 8.0$, $L_1 = L + 1.0$ Max.

$D > 8.0$, $L_1 = L + 1.5$ Max.

$D_1 = D + B$ Max.

$S_1 = S \pm 0.05$ mm Max.

STANDARD PART LISTING

| Capacitance (µF) | WVDC | ic [®] PART NUMBER | Maximum ESR Ω 120Hz, +25°C | Maximum RMS Ripple Current (mA) 120Hz, +85°C | Dimensions DxL (mm) |
|------------------|------|-----------------------------|-------------------------------|---|---------------------|
| 0.1 | 50 | 104RLS050M | 1657.86 | 6 | 5x11 |
| 0.15 | 50 | 154RLS050M | 1105.243 | 7 | 5x11 |
| 0.22 | 50 | 224RLS050M | 753.575 | 8 | 5x11 |
| 0.33 | 50 | 334RLS050M | 502.383 | 9 | 5x11 |
| 0.47 | 50 | 474RLS050M | 352.737 | 10 | 5x11 |
| 0.68 | 50 | 684RLS050M | 243.804 | 10 | 5x11 |
| 1.0 | 50 | 105RLS050M | 165.786 | 19 | 5x11 |
| 1.5 | 50 | 155RLS050M | 110.524 | 28 | 5x11 |
| 2.2 | 50 | 225RLS050M | 75.357 | 33 | 5x11 |
| 3.3 | 50 | 335RLS050M | 50.238 | 38 | 5x11 |
| 4.7 | 50 | 475RLS050M | 35.274 | 50 | 6.3x11 |
| 6.8 | 50 | 685RLS050M | 24.380 | 63 | 5x11 |
| 10 | 35 | 106RLS035M | 19.894 | 57 | 5x11 |
| 10 | 50 | 106RLS050M | 16.579 | 80 | 5x11 |
| 15 | 35 | 156RLS035M | 13.263 | 70 | 8x11 |
| 15 | 50 | 156RLS050M | 11.052 | 110 | 6.3x11 |
| 22 | 16 | 226RLS016M | 12.057 | 75 | 5x11 |
| 22 | 25 | 226RLS025M | 10.550 | 81 | 5x11 |
| 22 | 35 | 226RLS035M | 9.043 | 100 | 6.3x11 |
| 22 | 50 | 226RLS050M | 7.536 | 140 | 6.3x11.5 |
| 33 | 16 | 336RLS016M | 8.038 | 95 | 5x11 |
| 33 | 35 | 336RLS035M | 6.029 | 120 | 6.3x11 |
| 33 | 50 | 336RLS050M | 5.024 | 170 | 8x11.5 |
| 47 | 10 | 476RLS010M | 7.055 | 105 | 5x11 |
| 47 | 16 | 476RLS016M | 5.644 | 125 | 6.3x11 |
| 47 | 25 | 476RLS025M | 4.938 | 136 | 6.3x11 |

| Capacitance (µF) | WVDC | ic [®] PART NUMBER | Maximum ESR Ω 120Hz, +25°C | Maximum RMS Ripple Current (mA) 120Hz, +85°C | Dimensions DxL (mm) |
|------------------|------|-----------------------------|-------------------------------|---|---------------------|
| 47 | 50 | 476RLS050M | 3.527 | 230 | 8x11.5 |
| 68 | 16 | 686RLS016M | 3.901 | 150 | 6.3x11 |
| 68 | 35 | 686RLS035M | 2.926 | 200 | 8x11.5 |
| 68 | 50 | 686RLS050M | 2.438 | 295 | 10x12.5 |
| 100 | 10 | 107RLS010M | 3.316 | 160 | 6.3x11 |
| 100 | 16 | 107RLS016M | 2.653 | 212 | 8x11.5 |
| 100 | 25 | 107RLS025M | 2.321 | 220 | 8x11.5 |
| 100 | 35 | 107RLS035M | 1.989 | 255 | 10x12.5 |
| 100 | 50 | 107RLS050M | 1.658 | 400 | 10x16 |
| 150 | 16 | 157RLS016M | 1.768 | 255 | 8x11.5 |
| 150 | 25 | 157RLS025M | 1.547 | 265 | 10x12.5 |
| 150 | 35 | 157RLS035M | 1.326 | 295 | 10x16 |
| 150 | 50 | 157RLS050M | 1.105 | 450 | 10x20 |
| 220 | 10 | 227RLS010M | 1.507 | 274 | 8x11.5 |
| 220 | 16 | 227RLS016M | 1.206 | 322 | 10x12.5 |
| 220 | 25 | 227RLS025M | 1.055 | 375 | 10x16 |
| 220 | 35 | 227RLS035M | 0.904 | 442 | 10x20 |
| 220 | 50 | 227RLS050M | 0.754 | 550 | 12.5x20 |
| 330 | 10 | 337RLS010M | 1.005 | 355 | 10x12.5 |
| 330 | 16 | 337RLS016M | 0.804 | 425 | 10x16 |
| 330 | 25 | 337RLS025M | 0.703 | 500 | 10x20 |
| 330 | 35 | 337RLS035M | 0.603 | 595 | 12.5x20 |
| 470 | 10 | 477RLS010M | 0.705 | 460 | 10x16 |
| 470 | 16 | 477RLS016M | 0.564 | 505 | 10x20 |
| 1000 | 10 | 108RLS010M | 0.332 | 805 | 12.5x20 |