

V-CHIP ALUMINUM ELECTROLYTIC CAPACITOR



KL Parts List (1-4)

| Size | Part No. | R.V. (V.DC) | Cap. (μ F) | Tangent of Loss Angle ($\tan \delta$) | Leakage Current (μ A) | ESR (Ω) (20°C, 120Hz) | Ripple Current (mA rms.) (120Hz, 105°C) |
|-------------|------------------------|----------------|--------------------|---|----------------------------------|-----------------------------------|---|
| D x L | | | | max. | max. | max. | max. |
| 4 x 5.8 | 6.3KL220MLC4x5.8EC | 6.3 | 22 | 0.28 | 3.0 | 27.4 | 22 |
| 5 x 5.8 | 6.3KL330MLC5x5.8EC | 6.3 | 33 | 0.28 | 3.0 | 18.3 | 35 |
| 5 x 5.8 | 6.3KL470MLC5x5.8EC | 6.3 | 47 | 0.28 | 3.0 | 12.8 | 38 |
| 6.3 x 5.8 | 6.3KL101MLC6.3x5.8EC | 6.3 | 100 | 0.28 | 6.3 | 6.0 | 69 |
| 6.3 x 7.7 | 6.3KL151MLC6.3x7.7EC | 6.3 | 150 | 0.28 | 9.5 | 4.0 | 85 |
| 8 x 6.2 | 6.3KL151MLC8x6.2EC | 6.3 | 150 | 0.28 | 9.5 | 4.0 | 85 |
| 6.3 x 7.7 | 6.3KL221MLC6.3x7.7EC | 6.3 | 220 | 0.28 | 13.9 | 2.7 | 120 |
| 8 x 6.2 | 6.3KL221MLC8x6.2EC | 6.3 | 220 | 0.28 | 13.9 | 2.7 | 120 |
| 8 x 10.5 | 6.3KL331MLC8x10.5EC | 6.3 | 330 | 0.28 | 20.8 | 1.8 | 290 |
| 10 x 10.5 | 6.3KL471MLC10x10.5EC | 6.3 | 470 | 0.28 | 29.6 | 1.3 | 320 |
| 10 x 10.5 | 6.3KL681MLC10x10.5EC | 6.3 | 680 | 0.28 | 42.8 | 0.9 | 320 |
| 10 x 10.5 | 6.3KL102MLC10x10.5EC | 6.3 | 1000 | 0.28 | 63.0 | 0.6 | 410 |
| 10 x 13.5 | 6.3KL152MLC10x13.5EC | 6.3 | 1500 | 0.28 | 94.5 | 0.4 | 450 |
| 12.5 x 13.5 | 6.3KL222MLC12.5x13.5EC | 6.3 | 2200 | 0.38 | 138.5 | 0.37 | 680 |
| 12.5 x 13.5 | 6.3KL332MLC12.5x13.5EC | 6.3 | 3300 | 0.38 | 207.9 | 0.25 | 800 |
| 12.5 x 16 | 6.3KL332MLC12.5x16EC | 6.3 | 3300 | 0.38 | 207.9 | 0.25 | 850 |
| | | | | | | | |
| 5 x 5.8 | 10KL220MLC5x5.8EC | 10 | 22 | 0.24 | 3.0 | 23.5 | 30 |
| 5 x 5.8 | 10KL330MLC5x5.8EC | 10 | 33 | 0.24 | 3.3 | 15.7 | 36 |
| 6.3 x 5.8 | 10KL470MLC6.3x5.8EC | 10 | 47 | 0.24 | 4.7 | 11.0 | 50 |
| 6.3 x 7.7 | 10KL101MLC6.3x7.7EC | 10 | 100 | 0.24 | 10.0 | 5.2 | 81 |
| 8 x 6.2 | 10KL101MLC8x6.2EC | 10 | 100 | 0.24 | 10.0 | 5.2 | 81 |
| 8 x 10.5 | 10KL151MLC8x10.5EC | 10 | 150 | 0.24 | 15.0 | 3.5 | 125 |
| 8 x 10.5 | 10KL221MLC8x10.5EC | 10 | 220 | 0.24 | 22.0 | 2.4 | 141 |
| 10 x 10.5 | 10KL331MLC10x10.5EC | 10 | 330 | 0.24 | 33.0 | 1.6 | 290 |
| 10 x 10.5 | 10KL471MLC10x10.5EC | 10 | 470 | 0.24 | 47.0 | 1.1 | 320 |
| 10 x 10.5 | 10KL681MLC10x10.5EC | 10 | 680 | 0.24 | 68.0 | 0.8 | 320 |
| 10 x 13.5 | 10KL102MLC10x13.5EC | 10 | 1000 | 0.24 | 100.0 | 0.5 | 390 |
| 12.5 x 13.5 | 10KL152MLC12.5x13.5EC | 10 | 1500 | 0.34 | 150.0 | 0.49 | 480 |
| 12.5 x 13.5 | 10KL222MLC12.5x13.5EC | 10 | 2200 | 0.34 | 220.0 | 0.33 | 510 |
| 12.5 x 16 | 10KL222MLC12.5x16EC | 10 | 2200 | 0.34 | 220.0 | 0.33 | 750 |
| 16 x 16.5 | 10KL332MLC16x16.5EC | 10 | 3300 | 0.34 | 330.0 | 0.22 | 800 |
| | | | | | | | |
| 4 x 5.8 | 16KL100MLC4x5.8EC | 16 | 10 | 0.20 | 3.0 | 43.1 | 18 |
| 5 x 5.8 | 16KL220MLC5x5.8EC | 16 | 22 | 0.20 | 3.5 | 19.6 | 30 |

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KL Parts List (2-4)

| Size | Part No. | R.V. (V.DC) | Cap. (μ F) | Tangent of Loss Angle ($\tan \delta$) | Leakage Current (μ A) | ESR (Ω) (20°C, 120Hz) | Ripple Current (mA rms.) (120Hz, 105°C) |
|-------------|-----------------------|----------------|--------------------|---|----------------------------------|-----------------------------------|---|
| D x L | | | | max. | max. | max. | max. |
| 6.3 x 5.8 | 16KL330MLC6.3x5.8EC | 16 | 33 | 0.20 | 5.3 | 13.1 | 48 |
| 6.3 x 5.8 | 16KL470MLC6.3x5.8EC | 16 | 47 | 0.20 | 7.5 | 9.2 | 50 |
| 6.3 x 7.7 | 16KL101MLC6.3x7.7EC | 16 | 100 | 0.20 | 16.0 | 4.3 | 81 |
| 8 x 6.2 | 16KL101MLC8x6.2EC | 16 | 100 | 0.20 | 16.0 | 4.3 | 81 |
| 8 x 10.5 | 16KL151MLC8x10.5EC | 16 | 150 | 0.20 | 24.0 | 2.9 | 125 |
| 10 x 10.5 | 16KL221MLC10x10.5EC | 16 | 220 | 0.20 | 35.2 | 2.0 | 216 |
| 10 x 10.5 | 16KL331MLC10x10.5EC | 16 | 330 | 0.20 | 52.8 | 1.3 | 290 |
| 10 x 10.5 | 16KL471MLC10x10.5EC | 16 | 470 | 0.20 | 75.2 | 0.9 | 320 |
| 10 x 13.5 | 16KL681MLC10x13.5EC | 16 | 680 | 0.20 | 108.8 | 0.6 | 420 |
| 12.5 x 13.5 | 16KL102MLC12.5x13.5EC | 16 | 1000 | 0.30 | 160.0 | 0.65 | 550 |
| 12.5 x 13.5 | 16KL152MLC12.5x13.5EC | 16 | 1500 | 0.30 | 240.0 | 0.43 | 650 |
| 16 x 16.5 | 16KL222MLC16x16.5EC | 16 | 2200 | 0.30 | 352.0 | 0.29 | 800 |
| | | | | | | | |
| 5 x 5.8 | 25KL100MLC5x5.8EC | 25 | 10 | 0.16 | 3.0 | 34.5 | 27 |
| 6.3 x 5.8 | 25KL220MLC6.3x5.8EC | 25 | 22 | 0.16 | 5.5 | 15.7 | 44 |
| 6.3 x 5.8 | 25KL330MLC6.3x5.8EC | 25 | 33 | 0.16 | 8.3 | 10.5 | 50 |
| 6.3 x 7.7 | 25KL470MLC6.3x7.7EC | 25 | 47 | 0.16 | 11.8 | 7.3 | 63 |
| 8 x 6.2 | 25KL470MLC8x6.2EC | 25 | 47 | 0.16 | 11.8 | 7.3 | 63 |
| 8 x 10.5 | 25KL101MLC8x10.57EC | 25 | 100 | 0.16 | 25.0 | 3.5 | 116 |
| 10 x 10.5 | 25KL151MLC10x10.5EC | 25 | 150 | 0.16 | 37.5 | 2.3 | 320 |
| 10 x 10.5 | 25KL221MLC10x10.5EC | 25 | 220 | 0.16 | 55.0 | 1.6 | 320 |
| 10 x 10.5 | 25KL331MLC10x10.5EC | 25 | 330 | 0.16 | 82.5 | 1.0 | 320 |
| 10 x 13.5 | 25KL471MLC10x13.5EC | 25 | 470 | 0.16 | 117.5 | 0.7 | 350 |
| 12.5 x 13.5 | 25KL471MLC12.5x10.5EC | 25 | 470 | 0.26 | 117.5 | 1.2 | 400 |
| 12.5 x 13.5 | 25KL681MLC12.5x13.5EC | 25 | 680 | 0.26 | 170.0 | 0.82 | 415 |
| 12.5 x 13.5 | 25KL102MLC12.5x13.5EC | 25 | 1000 | 0.26 | 250.0 | 0.56 | 460 |
| 12.5 x 16 | 25KL152MLC12.5x16EC | 25 | 1500 | 0.26 | 375.0 | 0.37 | 700 |
| | | | | | | | |
| 4 x 5.8 | 35KL4R7MLC4x5.8EC | 35 | 4.7 | 0.13 | 3.0 | 59.64 | 16 |
| 5 x 5.8 | 35KL100MLC5x5.8EC | 35 | 10 | 0.13 | 3.5 | 28.03 | 27 |
| 6.3 x 5.8 | 35KL220MLC6.3x5.8EC | 35 | 22 | 0.13 | 7.7 | 12.7 | 44 |
| 6.3 x 7.7 | 35KL330MLC6.3x7.7EC | 35 | 33 | 0.13 | 11.6 | 8.5 | 57 |
| 8 x 6.2 | 35KL330MLC8x6.2EC | 35 | 33 | 0.13 | 11.6 | 8.5 | 57 |
| 8 x 10.5 | 35KL470MLC8x10.5EC | 35 | 47 | 0.13 | 16.5 | 6.0 | 92 |
| 10 x 10.5 | 35KL101MLC10x10.5EC | 35 | 100 | 0.13 | 35.0 | 2.8 | 151 |
| 10 x 10.5 | 35KL151MLC10x10.5EC | 35 | 150 | 0.13 | 52.5 | 1.9 | 290 |

V-CHIP ALUMINUM ELECTROLYTIC CAPACITOR



KL Parts List (3-4)

| Size | Part No. | R.V. (V.DC) | Cap. (μ F) | Tangent of Loss Angle ($\tan \delta$) | Leakage Current (μ A) | ESR (Ω) (20°C, 120Hz) | Ripple Current (mA rms.) (120Hz, 105°C) |
|-------------|-----------------------|----------------|--------------------|---|----------------------------------|-----------------------------------|---|
| D x L | | | | max. | max. | max. | max. |
| 10 x 10.5 | 35KL221MLC10x10.5EC | 35 | 220 | 0.13 | 77.0 | 1.3 | 375 |
| 10 x 13.5 | 35KL331MLC10x13.5EC | 35 | 330 | 0.13 | 115.5 | 0.8 | 375 |
| 12.5 x 13.5 | 35KL331MLC12.5x13.5EC | 35 | 330 | 0.22 | 115.5 | 1.44 | 380 |
| 12.5 x 13.5 | 35KL471MLC12.5x13.5EC | 35 | 470 | 0.22 | 164.5 | 1.01 | 520 |
| 12.5 x 13.5 | 35KL681MLC12.5x13.5EC | 35 | 680 | 0.22 | 238.0 | 0.70 | 550 |
| 12.5 x 16 | 35KL102MLC12.5x16EC | 35 | 1000 | 0.22 | 350.0 | 0.47 | 600 |
| 16 x 16.5 | 35KL102MLC16x16.5EC | 35 | 1000 | 0.22 | 350.0 | 0.47 | 750 |
| | | | | | | | |
| 4 x 5.8 | 50KL0R1MLC4x5.8EC | 50 | 0.1 | 0.12 | 3.0 | 2587.6 | 1 |
| 4 x 5.8 | 50KLR22MLC4x5.8EC | 50 | 0.22 | 0.12 | 3.0 | 1176.2 | 2.6 |
| 4 x 5.8 | 50KLR33MLC4x5.8EC | 50 | 0.33 | 0.12 | 3.0 | 784.1 | 3.2 |
| 4 x 5.8 | 50KLR47MLC4x5.8EC | 50 | 0.47 | 0.12 | 3.0 | 550.5 | 5 |
| 4 x 5.8 | 50KL010MLC4x5.8EC | 50 | 1 | 0.12 | 3.0 | 258.8 | 8 |
| 4 x 5.8 | 50KL2R2MLC4x5.8EC | 50 | 2.2 | 0.12 | 3.0 | 117.6 | 12 |
| 4 x 5.8 | 50KL3R3MLC4x5.8EC | 50 | 3.3 | 0.12 | 3.0 | 78.4 | 17 |
| 5 x 5.8 | 50KL4R7MLC5x5.8EC | 50 | 4.7 | 0.12 | 3.0 | 55.1 | 22 |
| 6.3 x 5.8 | 50KL100MLC6.3x5.8EC | 50 | 10 | 0.12 | 5.0 | 25.9 | 32 |
| 6.3 x 7.7 | 50KL220MLC6.3x7.7EC | 50 | 22 | 0.12 | 11.0 | 11.8 | 58 |
| 8 x 6.2 | 50KL220MLC8x6.2EC | 50 | 22 | 0.12 | 11.0 | 11.8 | 58 |
| 8 x 10.5 | 50KL330MLC8x10.5EC | 50 | 33 | 0.12 | 16.5 | 7.8 | 140 |
| 10 x 10.5 | 50KL470MLC10x10.5EC | 50 | 47 | 0.12 | 23.5 | 5.5 | 310 |
| 10 x 10.5 | 50KL101MLC10x10.5EC | 50 | 100 | 0.12 | 50.0 | 2.6 | 310 |
| 10 x 10.5 | 50KL151MLC10x10.5EC | 50 | 150 | 0.12 | 75.0 | 1.7 | 310 |
| 10 x 13.5 | 50KL221MLC10x13.5EC | 50 | 220 | 0.12 | 110.0 | 1.18 | 320 |
| 12.5 x 13.5 | 50KL221MLC12.5x13.5EC | 50 | 220 | 0.18 | 110.0 | 1.76 | 340 |
| 12.5 x 13.5 | 50KL331MLC12.5x13.5EC | 50 | 330 | 0.18 | 165.0 | 1.18 | 500 |
| 12.5 x 16 | 50KL331MLC12.5x16EC | 50 | 330 | 0.18 | 165.0 | 1.18 | 600 |
| 16 x 16.5 | 50KL471MLC16x16.5EC | 50 | 470 | 0.18 | 235.0 | 0.83 | 700 |
| | | | | | | | |
| 6.3 x 7.7 | 63KL100MLC6.3x7.7EC | 63 | 10 | 0.12 | 6.3 | 25.9 | 45 |
| 8 x 6.2 | 63KL100MLC8x6.2EC | 63 | 10 | 0.12 | 6.3 | 25.9 | 45 |
| 8 x 10.5 | 63KL220MLC8x10.5EC | 63 | 22 | 0.12 | 13.9 | 11.8 | 65 |
| 10 x 10.5 | 63KL330MLC10x10.5EC | 63 | 33 | 0.12 | 20.8 | 7.8 | 80 |
| 10 x 10.5 | 63KL470MLC10x10.5EC | 63 | 47 | 0.12 | 29.6 | 5.5 | 90 |
| 10 x 13.5 | 63KL101MLC10x13.5EC | 63 | 100 | 0.12 | 63.0 | 2.6 | 150 |
| 12.5 x 13.5 | 63KL221MLC12.5x13.5EC | 63 | 220 | 0.18 | 138.6 | 1.8 | 470 |

V-CHIP ALUMINUM ELECTROLYTIC CAPACITOR



KL Parts List (4-4)

| Size | Part No. | R.V. (V.DC) | Cap. (μ F) | Tangent of Loss Angle ($\tan \delta$) | Leakage Current (μ A) | ESR (Ω) (20°C, 120Hz) | Ripple Current (mA rms.) (120Hz, 105°C) |
|-------------|------------------------|----------------|--------------------|---|----------------------------------|-----------------------------------|---|
| D x L | | | | max. | max. | max. | max. |
| 12.5 x 16 | 63KL331MLC12.5x16EC | 63 | 330 | 0.18 | 207.9 | 1.2 | 550 |
| 16 x 16.5 | 63KL331MLC16x16.5EC | 63 | 330 | 0.18 | 207.9 | 0.082 | 650 |
| 6.3 x 7.7 | 100KL3R3MLC6.3x7.7EC | 100 | 3.3 | 0.12 | 3.3 | 78.4 | 30 |
| 8 x 6.2 | 100KL3R3MLC8x6.2EC | 100 | 3.3 | 0.12 | 3.3 | 78.4 | 30 |
| 8 x 10.5 | 100KL4R7MLC8x10.5EC | 100 | 4.7 | 0.12 | 4.7 | 55.1 | 50 |
| 8 x 10.5 | 100KL100MLC8x10.5EC | 100 | 10 | 0.12 | 10.0 | 25.9 | 55 |
| 10 x 10.5 | 100KL220MLC10x10.5EC | 100 | 22 | 0.12 | 22.0 | 11.8 | 70 |
| 10 x 10.5 | 100KL330MLC10x10.5EC | 100 | 33 | 0.12 | 33.0 | 7.8 | 80 |
| 10 x 13.5 | 100KL470MLC10x13.5EC | 100 | 47 | 0.12 | 47.0 | 5.5 | 150 |
| 12.5 x 13.5 | 100KL470MLC12.5x13.5EC | 100 | 47 | 0.18 | 47.0 | 8.3 | 250 |
| 12.5 x 13.5 | 100KL680MLC12.5x13.5EC | 100 | 68 | 0.18 | 68.0 | 5.7 | 300 |
| 12.5 x 13.5 | 100KL101MLC12.5x13.5EC | 100 | 100 | 0.18 | 100.0 | 3.9 | 380 |
| 12.5 x 16 | 100KL101MLC12.5x16EC | 100 | 100 | 0.18 | 100.0 | 3.9 | 420 |
| 16 x 16.5 | 100KL101MLC16x16.5EC | 100 | 100 | 0.18 | 100.0 | 3.9 | 600 |