

ULG Series

+105° C, High Ripple Current, Low ESR

• Features

- High Ripple Current, Low ESR
- Wide Temperature Range
- RoHS Compliant



• Applications

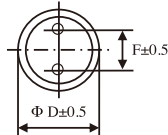
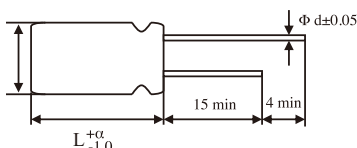
- Suitable for DC-DC Converters, Voltage Regulators, Decoupling Applications for Computer Motherboards, etc.

• Specifications

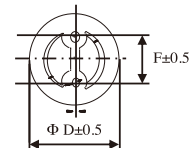
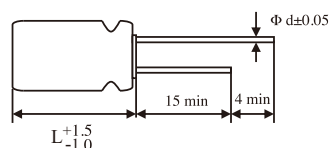
| Item | Performance Characteristics | | | | |
|--|---|------------------|---|----------------------------|---------------------|
| Operating Temperature Range | -55 to +105°C | | | | |
| Rated Working Voltage Range | 2.5VDC to 63VDC | | | | |
| Surge Voltage, SV | SV=VVx1.15VDC (Normal temperature) | | | | |
| Nominal Capacitance Range | 10 to 1500μF (120Hz, +20°C) | | | | |
| Capacitance Tolerance | ±20% (120Hz, +20°C) | | | | |
| tan δ | 0.12 (120Hz, +20°C) | | | | |
| Leakage Current, Lc | After 2 minutes applications of rated working voltage at 20°C For product rated voltage ≤ 2.5V, I ≤ 0.2CV or 500 (μ A) (Take whichever is greater) For product rated voltage > 2.5V, I ≤ 0.2CV or 280 (μ A) (Take whichever is greater) | | | | |
| Temperature Characteristics, Impedance Ratio | At -55°C 100kHz (Low temperature) | | | Z/Z _{20°C} ≤ 1.25 | |
| | At +105°C 100kHz (High temperature) | | | Z/Z _{20°C} ≤ 1.25 | |
| Frequency Coefficient for Allowable Ripple Current | Frequency | 120Hz ≤ f < 1kHz | 1kHz ≤ f < 10kHz | 10kHz ≤ f < 100kHz | 100kHz ≤ f < 500kHz |
| | Coefficient | 0.05 | 0.30 | 0.70 | 1.00 |
| Endurance | Test conditions +105°C, 2,000 hours Rated voltage applied | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Damp Heat Test (Steady State) | Test conditions +60°C, 90% to 95% RH 1,000 hours No applied voltage | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Surge Voltage Test | At normal temperature, charge at surge voltage for 30 sec, and discharge via a 1kΩ protective resistor for 330 sec. Repeat for 1,000 cycles. | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Others | JIS-C-5101-4 | | | | |

• Dimensions

When L < 16mm, α = +1.0; L ≥ 16mm, α = +1.5



When L < 16mm, α = +1.0; L ≥ 16mm, α = +1.5



ULG Series

+ 105° C, High Ripple Current, Low ESR

Size List

New Item | RV: Rated Voltage

| RV μF | Code | 2.5 (0E) | 4 (0G) | 6.3 (0J) | 10 (1A) | 16 (1C) | 20 (1D) | 25 (1E) | 35 (1V) | 63 (1J) |
|----------|------|----------|--------|----------|---------|---------|----------|--------------------|-------------------------|---------|
| 10 | 106 | | | | | | | | E08 | |
| 22 | 226 | | | | | | | D08, E08 | F08 | F08 |
| 33 | 336 | | | | | | E08 | E08, F08 | E08, F08 | |
| 47 | 476 | | | | | | F08 | D08, E06, E08, F08 | E06, E85, F08, F1A | |
| 56 | 566 | | | | | | | F08 | | |
| 68 | 686 | | | | | | E08, E11 | | | |
| 100 | 107 | | | | | | F1A | E08, F1A, G1B | E09, E11, F08, F1A, G1B | |
| 150 | 157 | | | | | | G1B | E11, F1A | | |
| 180 | 187 | | | | | F1A | | F1A | | |
| 220 | 227 | | | | | | | F1A, G1B | F1A, G1B | |
| 270 | 277 | | | | F1A | | | | | |
| 330 | 337 | | | | | G1B | | G1B | G1B | |
| 390 | 397 | | | F1A | | | F1A | G1B | | |
| 470 | 477 | | | | G1B | | | F1A, G1B | | |
| 560 | 567 | | F1A | | | | | | | |
| 680 | 687 | F1A | | G1B | | | F16, G1A | F16 | | |
| 820 | 827 | | G1B | | | | | | | |
| 1500 | 158 | G1B | | | | | | | | |

(Unit: mm)

| Size Code | D08 | E06 | E08 | E85 | E09 | E11 | F08 | F1A | F16 | G1A | G1B |
|-----------|-------|---------|---------|-----------|---------|----------|-------|----------|--------|-----------|-----------|
| ΦDxL | 5 x 8 | 6.3 x 6 | 6.3 x 8 | 6.3 x 8.5 | 6.3 x 9 | 6.3 x 11 | 8 x 8 | 8 x 11.5 | 8 x 12 | 10 x 11.5 | 10 x 12.5 |
| F±0.5 | 2.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.5 | 3.5 | 3.5 | 5.0 | 5.0 |
| Φd | 0.6 | 0.45 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| α | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.0 | 1.5 | 1.5 | 1.5 | 1.5 |

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ULG Series

+105° C, High Ripple Current, Low ESR

Characteristics List

| Rated Vol. (V) | Rated Cap. (μF) | Case Size ΦD x L (mm) | Size Code | Part Number | ESR (mΩ, max/ 20°C, 100kHz) | Rated Ripple (mArms/ 105°C, 100kHz) | DF (%max) | Leakage Current (μA/2 mins) |
|----------------|-----------------|-----------------------|-----------|--------------|-----------------------------|-------------------------------------|-----------|-----------------------------|
| 2.5 | 680 | 8 x 11.5 | F1A | ULG687M0EF1A | 10 | 5230 | 12 | 500 |
| 2.5 | 1500 | 10 x 12.5 | G1B | ULG158M0EG1B | 8 | 5500 | 12 | 750 |
| 4 | 560 | 8 x 11.5 | F1A | ULG567M0GF1A | 10 | 5230 | 12 | 448 |
| 4 | 820 | 10 x 12.5 | G1B | ULG827M0GG1B | 8 | 5500 | 12 | 656 |
| 6.3 | 390 | 8 x 11.5 | F1A | ULG397M0JF1A | 12 | 4770 | 12 | 491 |
| 6.3 | 680 | 10 x 12.5 | G1B | ULG687M0JG1B | 10 | 5500 | 12 | 857 |
| 10 | 270 | 8 x 11.5 | F1A | ULG277M1AF1A | 14 | 4420 | 12 | 540 |
| 10 | 470 | 10 x 12.5 | G1B | ULG477M1AG1B | 12 | 5300 | 12 | 940 |
| 16 | 180 | 8 x 11.5 | F1A | ULG187M1CF1A | 16 | 4360 | 12 | 576 |
| 16 | 330 | 10 x 12.5 | G1B | ULG337M1CG1B | 14 | 5050 | 12 | 1056 |
| 20 | 33 | 6.3 x 8 | E08 | ULG336M1DE08 | 45 | 1880 | 12 | 280 |
| 20 | 47 | 8 x 8 | F08 | ULG476M1DF08 | 42 | 1952 | 12 | 280 |
| 20 | 68 | 6.3 x 8 | E08 | ULG686M1DE08 | 25 | 2683 | 12 | 280 |
| 20 | 68 | 6.3 x 11 | E11 | ULG686M1DE11 | 55 | 1500 | 12 | 280 |
| 20 | 100 | 8 x 11.5 | F1A | ULG107M1DF1A | 35 | 2670 | 12 | 400 |
| 20 | 150 | 10 x 12.5 | G1B | ULG157M1DG1B | 35 | 2672 | 12 | 600 |
| 20 | 390 | 8 x 11.5 | F1A | ULG397M1DF1A | 35 | 2670 | 12 | 1560 |
| 20 | 680 | 8 x 16 | F16 | ULG687M1DF16 | 16 | 4650 | 12 | 2720 |
| 20 | 680 | 10 x 11.5 | G1A | ULG687M1DG1A | 30 | 2800 | 12 | 2720 |
| 25 | 22 | 5 x 8 | D08 | ULG226M1ED08 | 80 | 900 | 12 | 280 |
| 25 | 22 | 6.3 x 8 | E08 | ULG226M1EE08 | 55 | 1700 | 12 | 280 |
| 25 | 33 | 6.3 x 8 | E08 | ULG336M1EE08 | 80 | 1200 | 12 | 280 |
| 25 | 33 | 8 x 8 | F08 | ULG336M1EF08 | 50 | 1870 | 12 | 280 |
| 25 | 47 | 5 x 8 | D08 | ULG476M1ED08 | 60 | 1100 | 12 | 280 |
| 25 | 47 | 6.3 x 6 | E06 | ULG476M1EE06 | 50 | 1600 | 12 | 280 |
| 25 | 47 | 6.3 x 8 | E08 | ULG476M1EE08 | 70 | 1603 | 12 | 280 |
| 25 | 47 | 8 x 8 | F08 | ULG476M1EF08 | 45 | 1940 | 12 | 280 |
| 25 | 56 | 8 x 8 | F08 | ULG566M1EF08 | 40 | 2500 | 12 | 280 |
| 25 | 100 | 6.3 x 8 | E08 | ULG107M1EE08 | 50 | 1200 | 12 | 500 |
| 25 | 100 | 8 x 11.5 | F1A | ULG107M1EF1A | 40 | 2500 | 12 | 500 |
| 25 | 100 | 10 x 12.5 | G1B | ULG107M1EG1B | 40 | 4320 | 12 | 500 |
| 25 | 150 | 6.3 x 11 | E11 | ULG157M1EE11 | 40 | 2500 | 12 | 750 |
| 25 | 150 | 8 x 11.5 | F1A | ULG157M1EF1A | 40 | 2550 | 12 | 750 |
| 25 | 180 | 8 x 11.5 | F1A | ULG187M1EF1A | 40 | 2550 | 12 | 900 |
| 25 | 220 | 8 x 11.5 | F1A | ULG227M1EF1A | 35 | 2900 | 12 | 1100 |
| 25 | 220 | 10 x 12.5 | G1B | ULG227M1EG1B | 35 | 3100 | 12 | 1100 |
| 25 | 330 | 10 x 12.5 | G1B | ULG337M1EG1B | 45 | 3100 | 12 | 1650 |
| 25 | 390 | 10 x 12.5 | G1B | ULG397M1EG1B | 35 | 3100 | 12 | 1950 |
| 25 | 470 | 8 x 11.5 | F1A | ULG477M1EF1A | 35 | 2900 | 12 | 2350 |
| 25 | 470 | 10 x 12.5 | G1B | ULG477M1EG1B | 35 | 3100 | 12 | 2350 |
| 25 | 680 | 8 x 16 | F16 | ULG687M1EF16 | 16 | 4650 | 12 | 3400 |
| 35 | 10 | 6.3 x 8 | E08 | ULG106M1VE08 | 90 | 1500 | 12 | 280 |
| 35 | 22 | 8 x 8 | F08 | ULG226M1VF08 | 100 | 1600 | 12 | 280 |
| 35 | 33 | 6.3 x 8 | E08 | ULG336M1VE08 | 100 | 1300 | 12 | 280 |
| 35 | 33 | 8 x 8 | F08 | ULG336M1VF08 | 90 | 1700 | 12 | 280 |
| 35 | 47 | 6.3 x 6 | E06 | ULG476M1VE06 | 90 | 1250 | 12 | 329 |
| 35 | 47 | 6.3 x 8.5 | E85 | ULG476M1VE85 | 90 | 1450 | 12 | 329 |
| 35 | 47 | 8 x 8 | F08 | ULG476M1VF08 | 90 | 1500 | 12 | 329 |
| 35 | 47 | 8 x 11.5 | F1A | ULG476M1VF1A | 90 | 1500 | 12 | 329 |
| 35 | 100 | 6.3 x 9 | E09 | ULG107M1VE09 | 35 | 2383 | 12 | 700 |
| 35 | 100 | 6.3 x 11 | E11 | ULG107M1VE11 | 75 | 1800 | 12 | 700 |
| 35 | 100 | 8 x 8 | F08 | ULG107M1VF08 | 80 | 1900 | 12 | 700 |
| 35 | 100 | 8 x 11.5 | F1A | ULG107M1VF1A | 55 | 2000 | 12 | 700 |
| 35 | 100 | 10 x 12.5 | G1B | ULG107M1VG1B | 65 | 1870 | 12 | 700 |
| 35 | 220 | 8 x 11.5 | F1A | ULG227M1VF1A | 55 | 2000 | 12 | 1540 |
| 35 | 220 | 10 x 12.5 | G1B | ULG227M1VG1B | 55 | 2450 | 12 | 1540 |
| 35 | 330 | 10 x 12.5 | G1B | ULG337M1VG1B | 45 | 2700 | 12 | 2310 |
| 63 | 22 | 8 x 8 | F08 | ULG226M1JF08 | 150 | 3989 | 12 | 1261 |

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ULR Series

+105° C, Higher Ripple Current, Lower ESR than ULG

Features

- Higher Ripple Current, Lower ESR than ULG
- Wide Temperature Range
- RoHS Compliant



Applications

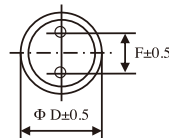
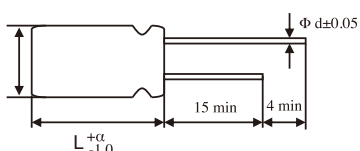
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Specifications

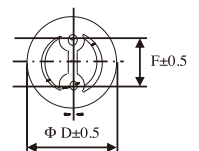
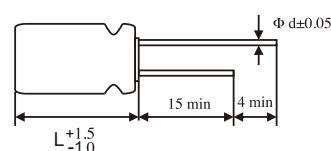
| Item | Performance Characteristics | | | | |
|--|---|------------------|---|--------------------|---------------------|
| Operating Temperature Range | -55 to +105°C | | | | |
| Rated Working Voltage Range | 2.5VDC to 35VDC | | | | |
| Surge Voltage, SV | SV=WVx1.15VDC (Normal temperature) | | | | |
| Nominal Capacitance Range | 22 to 2700μF (120Hz, +20°C) | | | | |
| Capacitance Tolerance | ±20% (120Hz, +20°C) | | | | |
| tan δ | 0.10 (120Hz, +20°C) | | | | |
| Leakage Current, Lc | After 2 minutes applications of rated working voltage at 20°C For product rated voltage ≤ 2.5V, I ≤ 0.2CV or 500 (μ A) (Take whichever is greater) For product rated voltage > 2.5V, I ≤ 0.2CV or 280 (μ A) (Take whichever is greater) | | | | |
| Temperature Characteristics, Impedance Ratio | At -55°C 100kHz (Low temperature) | | | Z/Z20°C ≤ 1.25 | |
| | At +105°C 100kHz (High temperature) | | | Z/Z20°C ≤ 1.25 | |
| Frequency Coefficient for Allowable Ripple Current | Frequency | 120Hz ≤ f < 1kHz | 1kHz ≤ f < 10kHz | 10kHz ≤ f < 100kHz | 100kHz ≤ f < 500kHz |
| | Coefficient | 0.05 | 0.30 | 0.70 | 1.00 |
| Endurance | Test conditions +105°C, 2,000 hours Rated voltage applied | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Damp Heat Test (Steady State) | Test conditions +60°C, 90% to 95% RH 1,000 hours No applied voltage | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Surge Voltage Test | At normal temperature, charge at surge voltage for 30 sec. and discharge via a 1kΩ protective resistor for 330 sec. Repeat for 1,000 cycles. | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Others | JIS-C-5101-4 | | | | |

Dimensions

When L < 16mm, α = +1.0; L ≥ 16mm, α = +1.5



When L < 16mm, α = +1.0; L ≥ 16mm, α = +1.5



ULR Series

+105° C, Higher Ripple Current, Lower ESR than ULG

Size List

New item | RV: Rated Voltage

| RV μF | Code | 2.5 (0E) | 4 (0G) | 6.3 (0J) | 6.8 (06) | 7 (0S) | 7.5 (07) | 10 (1A) | 12 (1O) | 14 (14) | 16 (1C) | 20 (1D) | 25 (1E) | 35 (1V) |
|----------|------|-------------------------|---------------|--|----------|----------|--------------------|-------------------------|---------|---------|--|---------|----------|--------------------|
| 22 | 226 | | | | | | | E08 | | | E06 | | E08 | |
| 33 | 336 | | | | | | | E08 | | | | E08 | F08 | |
| 47 | 476 | | | | | | | E08 | | | E08 | F08 | F08 | |
| 100 | 107 | | | D06, E55 | | | D07 | | | | D07, D09, E06, E07, E08, E11 | F1A | F1A | E09, F1A, G12, G1B |
| 150 | 157 | | | C65 | | D06 | | E11 | | | | G1B | | |
| 180 | 187 | | | | | | | E08 | | | X08, X09, E07, F1A | | | |
| 220 | 227 | E06 | | D07, X07, X08, E05, E06, E08 | | | D07 | D11, E06, E07, E08 | | | X09, E08, E11, F08, F1A | | F1A | G1B |
| 270 | 277 | | E08 | D07, E06, E08 | | | | E08, F08, F1A | | | X09, E11, F08, F1A | | | |
| 330 | 337 | E08 | | D08, D09, X08, E55, E06, E08, F08 | | D09 | D09, X09, E08 | E08, F08, F1A | D09 | | E09, E1K, E11, F07, F08, F1A, G09, G1B | | F1A, G1B | |
| 390 | 397 | D07, E06 | | D08, D09, E08, F08 | | | D08, D09 | F08, F1A | | | | | | |
| 470 | 477 | D09 | | D95, D11, X10, E06, E61, E07, E08, E09, F08, F1A | D09 | | E65, E07, E08, E09 | E85, E11, F08, F1A, G1B | X10 | | E11, F08, F1A, G1B | | | |
| 500 | 507 | | | | E61 | | D85, D09, X09 | | | | | | | |
| 560 | 567 | D08, D09, E06, E08, F08 | E08, F08, F1A | X08, E07, E08, F08 | | | E08 | F08, F1A | E09 | E10 | | | F16 | |
| 680 | 687 | F65, F08 | F08, F1A | D11, X09, E08, F08, F1A, G1B | | | E85, F08 | E11, F1A, G1B | E11 | E13 | F1A, G1B | | F16 | |
| 820 | 827 | E08, F07, F08, F1A | F08, F1A | X10, E75, E85, E95, E10, E11, F07, F08, F1A, G1B | | E10, F08 | E09, E11 | F1A | | | F1A, G1B | | | |
| 1000 | 108 | F08, F09, F1A | F08, G1B | E10, E1K, F08, F1A, G1B | E11 | | E11 | F1A, G1B | | | F16, G1B | | G16 | |
| 1200 | 128 | F08 | F08, F1A, G1B | E11, E13, F08, F1A | | | E13, F1A | G1B | | | | | | |
| 1500 | 158 | F1A, G1B | | F1A, G10, G1B | | | F1A | G1B | | | | | | |
| 1800 | 188 | | | G1B | | | | | | | | | | |
| 2200 | 228 | | | G1B | | | | G16 | | | | | | |
| 2500 | 258 | | | F16 | | | | | | | | | | |
| 2700 | 278 | G1B | G1B | | | | | | | | | | | |

ULR Series

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ULR Series

+ 105° C, Higher Ripple Current, Lower ESR than ULG

(Unit: mm)

| Size Code | C65 | D06 | D07 | D08 | D85 | D09 | D95 | D11 | X07 | X08 | X09 | X10 | E05 |
|-----------|---------|-------|-------|-------|---------|-------|---------|--------|---------|---------|---------|----------|---------|
| Φ D×L | 4 x 6.5 | 5 x 6 | 5 x 7 | 5 x 8 | 5 x 8.5 | 5 x 9 | 5 x 9.5 | 5 x 11 | 5.5 x 7 | 5.5 x 8 | 5.5 x 9 | 5.5 x 10 | 6.3 x 5 |
| F± 0.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Φ d | 0.45 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.45 |
| α | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.0 | 1.0 | 1.0 | 1.0 |

| Size Code | E55 | E06 | E61 | E65 | E07 | E75 | E08 | E85 | E09 | E95 | E10 | E1K | E11 |
|-----------|-----------|---------|-----------|-----------|---------|-----------|---------|-----------|---------|-----------|----------|------------|----------|
| Φ D×L | 6.3 x 5.5 | 6.3 x 6 | 6.3 x 6.1 | 6.3 x 6.5 | 6.3 x 7 | 6.3 x 7.5 | 6.3 x 8 | 6.3 x 8.5 | 6.3 x 9 | 6.3 x 9.5 | 6.3 x 10 | 6.3 x 10.5 | 6.3 x 11 |
| F± 0.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Φ d | 0.45 | 0.45 | 0.45 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| α | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 |

| Size Code | E13 | F65 | F07 | F08 | F09 | F1A | F16 | G09 | G10 | G12 | G1B | G16 |
|-----------|----------|---------|-------|-------|-------|----------|--------|--------|---------|---------|-----------|---------|
| Φ D×L | 6.3 x 13 | 8 x 6.5 | 8 x 7 | 8 x 8 | 8 x 9 | 8 x 11.5 | 8 x 16 | 10 x 9 | 10 x 10 | 10 x 12 | 10 x 12.5 | 10 x 16 |
| F± 0.5 | 2.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Φ d | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| α | 1.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |

ULR Series

+105° C, Higher Ripple Current, Lower ESR than ULG

Characteristics List

| Rated Vol. (V) | Rated Cap. (μF) | Case Size ΦD x L (mm) | Size Code | Part Number | ESR (mΩ, max/ 20°C, 100kHz) | Rated Ripple (mArms/ 105°C, 100kHz) | DF (% max) | Leakage Current (μA/2 mins) |
|----------------|-----------------|-----------------------|-----------|--------------|-----------------------------|-------------------------------------|------------|-----------------------------|
| 2.5 | 220 | 6.3 x 6 | E06 | ULR227M0EE06 | 15 | 3400 | 10 | 500 |
| 2.5 | 330 | 6.3 x 8 | E08 | ULR337M0EE08 | 7 | 4200 | 10 | 500 |
| 2.5 | 390 | 5 x 7 | D07 | ULR397M0ED07 | 11 | 3050 | 10 | 500 |
| 2.5 | 390 | 6.3 x 6 | E06 | ULR397M0EE06 | 15 | 3400 | 10 | 500 |
| 2.5 | 470 | 5 x 9 | D09 | ULR477M0ED09 | 7 | 4180 | 10 | 500 |
| 2.5 | 560 | 5 x 8 | D08 | ULR567M0ED08 | 7 | 4180 | 10 | 500 |
| 2.5 | 560 | 5 x 9 | D09 | ULR567M0ED09 | 7 | 4180 | 10 | 500 |
| 2.5 | 560 | 6.3 x 6 | E06 | ULR567M0EE06 | 15 | 3400 | 10 | 500 |
| 2.5 | 560 | 6.3 x 8 | E08 | ULR567M0EE08 | 7 | 4000 | 10 | 500 |
| 2.5 | 560 | 8 x 8 | F08 | ULR567M0EF08 | 7 | 6100 | 10 | 500 |
| 2.5 | 680 | 8 x 6.5 | F65 | ULR687M0EF65 | 8 | 4900 | 10 | 500 |
| 2.5 | 680 | 8 x 8 | F08 | ULR687M0EF08 | 7 | 6100 | 10 | 500 |
| 2.5 | 820 | 6.3 x 8 | E08 | ULR827M0EE08 | 7 | 5600 | 10 | 500 |
| 2.5 | 820 | 8 x 7 | F07 | ULR827M0EF07 | 8 | 5600 | 10 | 500 |
| 2.5 | 820 | 8 x 8 | F08 | ULR827M0EF08 | 7 | 6100 | 10 | 500 |
| 2.5 | 820 | 8 x 11.5 | F1A | ULR827M0EF1A | 7 | 6100 | 10 | 500 |
| 2.5 | 1000 | 8 x 8 | F08 | ULR108M0EF08 | 7 | 6100 | 10 | 500 |
| 2.5 | 1000 | 8 x 9 | F09 | ULR108M0EF09 | 7 | 6100 | 10 | 500 |
| 2.5 | 1000 | 8 x 11.5 | F1A | ULR108M0EF1A | 7 | 6100 | 10 | 500 |
| 2.5 | 1200 | 8 x 8 | F08 | ULR128M0EF08 | 7 | 6100 | 10 | 600 |
| 2.5 | 1500 | 8 x 11.5 | F1A | ULR158M0EF1A | 7 | 6100 | 10 | 750 |
| 2.5 | 1500 | 10 x 12.5 | G1B | ULR158M0EG1B | 7 | 6100 | 10 | 750 |
| 2.5 | 2700 | 10 x 12.5 | G1B | ULR278M0EG1B | 8 | 5560 | 10 | 1350 |
| 4 | 270 | 6.3 x 8 | E08 | ULR277M0GE08 | 12 | 3200 | 10 | 280 |
| 4 | 560 | 6.3 x 8 | E08 | ULR567M0GE08 | 7 | 5600 | 10 | 448 |
| 4 | 560 | 8 x 8 | F08 | ULR567M0GF08 | 7 | 6100 | 10 | 448 |
| 4 | 560 | 8 x 11.5 | F1A | ULR567M0GF1A | 7 | 6100 | 10 | 448 |
| 4 | 680 | 8 x 8 | F08 | ULR687M0GF08 | 7 | 6100 | 10 | 544 |
| 4 | 680 | 8 x 11.5 | F1A | ULR687M0GF1A | 7 | 6100 | 10 | 544 |
| 4 | 820 | 8 x 8 | F08 | ULR827M0GF08 | 7 | 6100 | 10 | 656 |
| 4 | 820 | 8 x 11.5 | F1A | ULR827M0GF1A | 7 | 6100 | 10 | 656 |
| 4 | 1000 | 8 x 8 | F08 | ULR108M0GF08 | 7 | 6100 | 10 | 800 |
| 4 | 1000 | 10 x 12.5 | G1B | ULR108M0GG1B | 7 | 6640 | 10 | 800 |
| 4 | 1200 | 8 x 8 | F08 | ULR128M0GF08 | 7 | 6100 | 10 | 960 |
| 4 | 1200 | 8 x 11.5 | F1A | ULR128M0GF1A | 7 | 6100 | 10 | 960 |
| 4 | 1200 | 10 x 12.5 | G1B | ULR128M0GG1B | 8 | 5600 | 10 | 960 |
| 4 | 2700 | 10 x 12.5 | G1B | ULR278M0GG1B | 8 | 6900 | 10 | 2160 |
| 6.3 | 100 | 5 x 6 | D06 | ULR107M0JD06 | 25 | 1897 | 10 | 280 |
| 6.3 | 100 | 6.3 x 5.5 | E55 | ULR107M0JE55 | 80 | 1200 | 10 | 280 |
| 6.3 | 150 | 4 x 6.5 | C65 | ULR157M0JC65 | 100 | 2000 | 10 | 280 |
| 6.3 | 220 | 5 x 7 | D07 | ULR227M0JD07 | 11 | 3700 | 10 | 280 |
| 6.3 | 220 | 5.5 x 7 | X07 | ULR227M0JX07 | 20 | 2390 | 10 | 280 |
| 6.3 | 220 | 5.5 x 8 | X08 | ULR227M0JX08 | 15 | 2920 | 10 | 280 |
| 6.3 | 220 | 6.3 x 5 | E05 | ULR227M0JE05 | 20 | 2267 | 10 | 280 |
| 6.3 | 220 | 6.3 x 6 | E06 | ULR227M0JE06 | 20 | 3160 | 10 | 280 |
| 6.3 | 220 | 6.3 x 8 | E08 | ULR227M0JE08 | 20 | 3400 | 10 | 280 |
| 6.3 | 270 | 5 x 7 | D07 | ULR277M0JD07 | 11 | 3700 | 10 | 340 |
| 6.3 | 270 | 6.3 x 6 | E06 | ULR277M0JE06 | 20 | 3160 | 10 | 340 |
| 6.3 | 270 | 6.3 x 8 | E08 | ULR277M0JE08 | 12 | 3531 | 10 | 340 |
| 6.3 | 330 | 5 x 8 | D08 | ULR337M0JD08 | 12 | 2900 | 10 | 416 |

Specifications are subject to change without notice. Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately.

ULR Series

+105° C, Higher Ripple Current, Lower ESR than ULG

| Rated Vol. (V) | Rated Cap. (μF) | Case Size ΦD x L (mm) | Size Code | Part Number | ESR (mΩ, max/ 20°C, 100kHz) | Rated Ripple (mArms/ 105°C, 100kHz) | DF (% max) | Leakage Current (μA/2 mins) |
|----------------|-----------------|-----------------------|-----------|--------------|-----------------------------|-------------------------------------|------------|-----------------------------|
| 6.3 | 330 | 5 x 9 | D09 | ULR337M0JD09 | 11 | 3100 | 10 | 416 |
| 6.3 | 330 | 5.5 x 8 | X08 | ULR337M0JX08 | 12 | 2900 | 10 | 416 |
| 6.3 | 330 | 6.3 x 5.5 | E55 | ULR337M0JE55 | 20 | 3160 | 10 | 416 |
| 6.3 | 330 | 6.3 x 6 | E06 | ULR337M0JE06 | 20 | 3160 | 10 | 416 |
| 6.3 | 330 | 6.3 x 8 | E08 | ULR337M0JE08 | 10 | 4500 | 10 | 416 |
| 6.3 | 330 | 8 x 8 | F08 | ULR337M0JF08 | 8 | 5700 | 10 | 416 |
| 6.3 | 390 | 5 x 8 | D08 | ULR397M0JD08 | 15 | 2766 | 10 | 492 |
| 6.3 | 390 | 5 x 9 | D09 | ULR397M0JD09 | 11 | 3100 | 10 | 492 |
| 6.3 | 390 | 6.3 x 8 | E08 | ULR397M0JE08 | 10 | 3868 | 10 | 492 |
| 6.3 | 390 | 8 x 8 | F08 | ULR397M0JF08 | 8 | 5700 | 10 | 492 |
| 6.3 | 470 | 5 x 9.5 | D95 | ULR477M0JD95 | 10 | 3100 | 10 | 592 |
| 6.3 | 470 | 5 x 11 | D11 | ULR477M0JD11 | 11 | 3700 | 10 | 592 |
| 6.3 | 470 | 5.5 x 10 | X10 | ULR477M0JX10 | 11 | 3100 | 10 | 592 |
| 6.3 | 470 | 6.3 x 6 | E06 | ULR477M0JE06 | 20 | 3160 | 10 | 592 |
| 6.3 | 470 | 6.3 x 6.1 | E61 | ULR477M0JE61 | 20 | 2449 | 10 | 592 |
| 6.3 | 470 | 6.3 x 7 | E07 | ULR477M0JE07 | 15 | 4545 | 10 | 592 |
| 6.3 | 470 | 6.3 x 8 | E08 | ULR477M0JE08 | 8 | 4700 | 10 | 592 |
| 6.3 | 470 | 6.3 x 9 | E09 | ULR477M0JE09 | 8 | 2898 | 10 | 592 |
| 6.3 | 470 | 8 x 8 | F08 | ULR477M0JF08 | 8 | 5700 | 10 | 593 |
| 6.3 | 470 | 8 x 11.5 | F1A | ULR477M0JF1A | 7 | 6100 | 10 | 592 |
| 6.3 | 560 | 5.5 x 8 | X08 | ULR567M0JX08 | 12 | 3265 | 10 | 706 |
| 6.3 | 560 | 6.3 x 7 | E07 | ULR567M0JE07 | 16 | 3500 | 10 | 706 |
| 6.3 | 560 | 6.3 x 8 | E08 | ULR567M0JE08 | 8 | 4700 | 10 | 706 |
| 6.3 | 560 | 8 x 8 | F08 | ULR567M0JF08 | 8 | 5700 | 10 | 706 |
| 6.3 | 680 | 5 x 11 | D11 | ULR687M0JD11 | 12 | 3558 | 10 | 857 |
| 6.3 | 680 | 5.5 x 9 | X09 | ULR687M0JX09 | 10 | 3762 | 10 | 857 |
| 6.3 | 680 | 6.3 x 8 | E08 | ULR687M0JE08 | 8 | 4700 | 10 | 857 |
| 6.3 | 680 | 8 x 8 | F08 | ULR687M0JF08 | 8 | 5700 | 10 | 857 |
| 6.3 | 680 | 8 x 11.5 | F1A | ULR687M0JF1A | 7 | 6100 | 10 | 857 |
| 6.3 | 680 | 10 x 12.5 | G1B | ULR687M0JG1B | 7 | 6640 | 10 | 857 |
| 6.3 | 820 | 5.5 x 10 | X10 | ULR827M0JX10 | 12 | 3596 | 10 | 1033 |
| 6.3 | 820 | 6.3 x 7.5 | E75 | ULR827M0JE75 | 15 | 3075 | 10 | 1033 |
| 6.3 | 820 | 6.3 x 8.5 | E85 | ULR827M0JE85 | 8 | 4700 | 10 | 1033 |
| 6.3 | 820 | 6.3 x 9.5 | E95 | ULR827M0JE95 | 8 | 5030 | 10 | 1033 |
| 6.3 | 820 | 6.3 x 10 | E10 | ULR827M0JE10 | 18 | 3170 | 10 | 1033 |
| 6.3 | 820 | 6.3 x 11 | E11 | ULR827M0JE11 | 8 | 5400 | 10 | 1033 |
| 6.3 | 820 | 8 x 7 | F07 | ULR827M0JF07 | 7 | 5051 | 10 | 1033 |
| 6.3 | 820 | 8 x 8 | F08 | ULR827M0JF08 | 7 | 6100 | 10 | 1033 |
| 6.3 | 820 | 8 x 11.5 | F1A | ULR827M0JF1A | 7 | 6100 | 10 | 1033 |
| 6.3 | 820 | 10 x 12.5 | G1B | ULR827M0JG1B | 7 | 6640 | 10 | 1033 |
| 6.3 | 1000 | 6.3 x 10 | E10 | ULR108M0JE10 | 8 | 4755 | 10 | 1260 |
| 6.3 | 1000 | 6.3 x 10.5 | E1K | ULR108M0JE1K | 8 | 4700 | 10 | 1260 |
| 6.3 | 1000 | 8 x 8 | F08 | ULR108M0JF08 | 7 | 6100 | 10 | 1260 |
| 6.3 | 1000 | 8 x 11.5 | F1A | ULR108M0JF1A | 7 | 6100 | 10 | 1260 |
| 6.3 | 1000 | 10 x 12.5 | G1B | ULR108M0JG1B | 10 | 5500 | 10 | 1260 |
| 6.3 | 1200 | 6.3 x 11 | E11 | ULR128M0JE11 | 10 | 4433 | 10 | 1512 |
| 6.3 | 1200 | 6.3 x 13 | E13 | ULR128M0JE13 | 10 | 4773 | 10 | 1512 |
| 6.3 | 1200 | 8 x 8 | F08 | ULR128M0JF08 | 10 | 4455 | 10 | 1512 |
| 6.3 | 1200 | 8 x 11.5 | F1A | ULR128M0JF1A | 7 | 6100 | 10 | 1512 |
| 6.3 | 1500 | 8 x 11.5 | F1A | ULR158M0JF1A | 10 | 5500 | 10 | 1890 |
| 6.3 | 1500 | 10 x 10 | G10 | ULR158M0JG10 | 10 | 5568 | 10 | 1890 |
| 6.3 | 1500 | 10 x 12.5 | G1B | ULR158M0JG1B | 10 | 5560 | 10 | 1890 |

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ULR Series

+105° C, Higher Ripple Current, Lower ESR than ULG

| Rated Vol. (V) | Rated Cap. (μF) | Case Size ΦD x L (mm) | Size Code | Part Number | ESR (mΩ, max/ 20°C, 100kHz) | Rated Ripple (mArms/ 105°C, 100kHz) | DF (% max) | Leakage Current (μA/2 mins) |
|----------------|-----------------|-----------------------|-----------|--------------|-----------------------------|-------------------------------------|------------|-----------------------------|
| 6.3 | 1800 | 11 x 12.5 | G1B | ULR188M0JG1B | 10 | 6100 | 10 | 2268 |
| 6.3 | 2200 | 10 x 12.5 | G1B | ULR228M0JG1B | 10 | 5560 | 10 | 2772 |
| 6.3 | 2500 | 8 x 16 | F16 | ULR258M0JF16 | 8 | 6100 | 10 | 3150 |
| 6.8 | 470 | 5 x 9 | D09 | ULR477M06D09 | 15 | 2911 | 10 | 639 |
| 6.8 | 500 | 6.3 x 6.1 | E61 | ULR507M06E61 | 20 | 2449 | 10 | 680 |
| 6.8 | 1000 | 6.3 x 11 | E11 | ULR108M06E11 | 11 | 4650 | 10 | 1033 |
| 7 | 150 | 5 x 6 | D06 | ULR157M0SD06 | 12 | 2900 | 10 | 280 |
| 7 | 330 | 5 x 9 | D09 | ULR337M0SD09 | 11 | 3100 | 10 | 462 |
| 7 | 820 | 6.3 x 10 | E10 | ULR827M0SE10 | 10 | 4930 | 10 | 1148 |
| 7 | 820 | 8 x 8 | F08 | ULR827M0SF08 | 10 | 5030 | 10 | 1148 |
| 7.5 | 100 | 5 x 7 | D07 | ULR107M07D07 | 12 | 2900 | 10 | 280 |
| 7.5 | 220 | 5 x 7 | D07 | ULR227M07D07 | 11 | 3050 | 10 | 330 |
| 7.5 | 330 | 5 x 9 | D09 | ULR337M07D09 | 12 | 3100 | 10 | 495 |
| 7.5 | 330 | 5.5 x 9 | X09 | ULR337M07X09 | 12 | 3434 | 10 | 495 |
| 7.5 | 330 | 6.3 x 8 | E08 | ULR337M07E08 | 15 | 3158 | 10 | 495 |
| 7.5 | 390 | 5 x 8 | D08 | ULR397M07D08 | 12 | 3255 | 10 | 585 |
| 7.5 | 390 | 5 x 9 | D09 | ULR397M07D09 | 12 | 3092 | 10 | 585 |
| 7.5 | 470 | 6.3 x 6.5 | E65 | ULR477M07E65 | 30 | 2051 | 10 | 705 |
| 7.5 | 470 | 6.3 x 7 | E07 | ULR477M07E07 | 12 | 4050 | 10 | 705 |
| 7.5 | 470 | 6.3 x 8 | E08 | ULR477M07E08 | 12 | 3531 | 10 | 705 |
| 7.5 | 470 | 6.3 x 9 | E09 | ULR477M07E09 | 8 | 4545 | 10 | 705 |
| 7.5 | 500 | 5 x 8.5 | D85 | ULR507M07D85 | 12 | 4000 | 10 | 750 |
| 7.5 | 500 | 5 x 9 | D09 | ULR507M07D09 | 12 | 3758 | 10 | 750 |
| 7.5 | 500 | 5.5 x 9 | X09 | ULR507M07X09 | 9 | 3434 | 10 | 750 |
| 7.5 | 560 | 6.3 x 8 | E08 | ULR567M07E08 | 8 | 4325 | 10 | 840 |
| 7.5 | 680 | 6.3 x 8.5 | E85 | ULR687M07E85 | 8 | 4700 | 10 | 1020 |
| 7.5 | 680 | 8 x 8 | F08 | ULR687M07F08 | 10 | 4455 | 10 | 1020 |
| 7.5 | 820 | 6.3 x 9 | E09 | ULR827M07E09 | 10 | 4065 | 10 | 1230 |
| 7.5 | 820 | 6.3 x 11 | E11 | ULR827M07E11 | 11 | 4700 | 10 | 1230 |
| 7.5 | 1000 | 6.3 x 11 | E11 | ULR108M07E11 | 8 | 4956 | 10 | 1500 |
| 7.5 | 1200 | 6.3 x 13 | E13 | ULR128M07E13 | 8 | 4773 | 10 | 1800 |
| 7.5 | 1200 | 8 x 11.5 | F1A | ULR128M07F1A | 10 | 5787 | 10 | 1800 |
| 7.5 | 1500 | 8 x 11.5 | F1A | ULR158M07F1A | 15 | 4226 | 10 | 2250 |
| 10 | 22 | 6.3 x 8 | E08 | ULR226M1AE08 | 45 | 1870 | 10 | 280 |
| 10 | 33 | 6.3 x 8 | E08 | ULR336M1AE08 | 35 | 2000 | 10 | 280 |
| 10 | 47 | 6.3 x 8 | E08 | ULR476M1AE08 | 32 | 2100 | 10 | 280 |
| 10 | 150 | 6.3 x 11 | E11 | ULR157M1AE11 | 25 | 2820 | 10 | 300 |
| 10 | 180 | 6.3 x 8 | E08 | ULR187M1AE08 | 25 | 2820 | 10 | 360 |
| 10 | 220 | 5 x 11 | D11 | ULR227M1AD11 | 10 | 3898 | 10 | 440 |
| 10 | 220 | 6.3 x 6 | E06 | ULR227M1AE06 | 15 | 2700 | 10 | 440 |
| 10 | 220 | 6.3 x 7 | E07 | ULR227M1AE07 | 15 | 2700 | 10 | 440 |
| 10 | 220 | 6.3 x 8 | E08 | ULR227M1AE08 | 12 | 3200 | 10 | 440 |
| 10 | 270 | 6.3 x 8 | E08 | ULR277M1AE08 | 12 | 3531 | 10 | 540 |
| 10 | 270 | 8 x 8 | F08 | ULR277M1AF08 | 14 | 4420 | 10 | 540 |
| 10 | 270 | 8 x 11.5 | F1A | ULR277M1AF1A | 11 | 5100 | 10 | 540 |
| 10 | 330 | 6.3 x 8 | E08 | ULR337M1AE08 | 11 | 3500 | 10 | 660 |
| 10 | 330 | 8 x 8 | F08 | ULR337M1AF08 | 11 | 5000 | 10 | 660 |
| 10 | 330 | 8 x 11.5 | F1A | ULR337M1AF1A | 11 | 5100 | 10 | 660 |
| 10 | 390 | 8 x 8 | F08 | ULR397M1AF08 | 11 | 5000 | 10 | 780 |
| 10 | 390 | 8 x 11.5 | F1A | ULR397M1AF1A | 9 | 6100 | 10 | 780 |
| 10 | 470 | 6.3 x 8.5 | E85 | ULR477M1AE85 | 12 | 3500 | 10 | 940 |
| 10 | 470 | 6.3 x 11 | E11 | ULR477M1AE11 | 12 | 3750 | 10 | 940 |

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ULR Series

+105° C, Higher Ripple Current, Lower ESR than ULG

| Rated Vol. (V) | Rated Cap. (μF) | Case Size ΦD x L (mm) | Size Code | Part Number | ESR (mΩ, max/ 20°C, 100kHz) | Rated Ripple (mArms/ 105°C, 100kHz) | DF (% max) | Leakage Current (μA/2 mins) |
|----------------|-----------------|-----------------------|-----------|--------------|-----------------------------|-------------------------------------|------------|-----------------------------|
| 10 | 470 | 8 x 8 | F08 | ULR477M1AF08 | 11 | 5000 | 10 | 940 |
| 10 | 470 | 8 x 11.5 | F1A | ULR477M1AF1A | 9 | 5650 | 10 | 940 |
| 10 | 470 | 10 x 12.5 | G1B | ULR477M1AG1B | 8 | 6100 | 10 | 940 |
| 10 | 560 | 8 x 8 | F08 | ULR567M1AF08 | 9 | 5600 | 10 | 1120 |
| 10 | 560 | 8 x 11.5 | F1A | ULR567M1AF1A | 9 | 5650 | 10 | 1120 |
| 10 | 680 | 6.3 x 11 | E11 | ULR687M1AE11 | 20 | 3135 | 10 | 1360 |
| 10 | 680 | 8 x 11.5 | F1A | ULR687M1AF1A | 10 | 5800 | 10 | 1360 |
| 10 | 680 | 10 x 12.5 | G1B | ULR687M1AG1B | 8 | 6100 | 10 | 1360 |
| 10 | 820 | 8 x 11.5 | F1A | ULR827M1AF1A | 8 | 6100 | 10 | 1640 |
| 10 | 1000 | 8 x 11.5 | F1A | ULR108M1AF1A | 10 | 5200 | 10 | 2000 |
| 10 | 1000 | 10 x 12.5 | G1B | ULR108M1AG1B | 9 | 6100 | 10 | 2000 |
| 10 | 1200 | 10 x 12.5 | G1B | ULR128M1AG1B | 8 | 6200 | 10 | 2400 |
| 10 | 1500 | 10 x 12.5 | G1B | ULR158M1AG1B | 15 | 4981 | 10 | 3000 |
| 10 | 2200 | 10 x 16 | G16 | ULR228M1AG16 | 20 | 4790 | 10 | 4400 |
| 12 | 330 | 5 x 9 | D09 | ULR337M1OD09 | 12 | 2690 | 10 | 792 |
| 12 | 470 | 5.5 x 10 | X10 | ULR477M1OX10 | 10 | 3735 | 10 | 1128 |
| 12 | 560 | 6.3 x 9 | E09 | ULR567M1OE09 | 12 | 3711 | 10 | 1344 |
| 12 | 680 | 6.3 x 11 | E11 | ULR687M1OE11 | 12 | 4047 | 10 | 1632 |
| 14 | 560 | 6.3 x 10 | E10 | ULR567M14E10 | 12 | 3800 | 10 | 1568 |
| 14 | 680 | 6.3 x 13 | E13 | ULR687M14E13 | 15 | 3897 | 10 | 1904 |
| 16 | 22 | 6.3 x 6 | E06 | ULR226M1CE06 | 80 | 1200 | 10 | 280 |
| 16 | 47 | 6.3 x 8 | E08 | ULR476M1CE08 | 60 | 1500 | 10 | 280 |
| 16 | 100 | 5 x 7 | D07 | ULR107M1CD07 | 20 | 2262 | 10 | 320 |
| 16 | 100 | 5 x 9 | D09 | ULR107M1CD09 | 24 | 2820 | 10 | 320 |
| 16 | 100 | 6.3 x 6 | E06 | ULR107M1CE06 | 25 | 2700 | 10 | 320 |
| 16 | 100 | 6.3 x 7 | E07 | ULR107M1CE07 | 24 | 2820 | 10 | 320 |
| 16 | 100 | 6.3 x 8 | E08 | ULR107M1CE08 | 24 | 2820 | 10 | 320 |
| 16 | 100 | 6.3 x 11 | E11 | ULR107M1CE11 | 24 | 2820 | 10 | 320 |
| 16 | 180 | 5.5 x 8 | X08 | ULR187M1CX08 | 25 | 2262 | 10 | 576 |
| 16 | 180 | 5.5 x 9 | X09 | ULR187M1CX09 | 20 | 2660 | 10 | 576 |
| 16 | 180 | 6.3 x 7 | E07 | ULR187M1CE07 | 22 | 2468 | 10 | 576 |
| 16 | 180 | 8 x 11.5 | F1A | ULR187M1CF1A | 13 | 5000 | 10 | 576 |
| 16 | 220 | 5.5 x 9 | X09 | ULR227M1CX09 | 20 | 2660 | 10 | 704 |
| 16 | 220 | 6.3 x 8 | E08 | ULR227M1CE08 | 15 | 3158 | 10 | 704 |
| 16 | 220 | 6.3 x 11 | E11 | ULR227M1CE11 | 20 | 3100 | 10 | 704 |
| 16 | 220 | 8 x 8 | F08 | ULR227M1CF08 | 13 | 4300 | 10 | 704 |
| 16 | 220 | 8 x 11.5 | F1A | ULR227M1CF1A | 13 | 5000 | 10 | 704 |
| 16 | 270 | 5.5 x 9 | X09 | ULR277M1CX09 | 20 | 2660 | 10 | 864 |
| 16 | 270 | 6.3 x 11 | E11 | ULR277M1CE11 | 20 | 3100 | 10 | 864 |
| 16 | 270 | 8 x 8 | F08 | ULR277M1CF08 | 13 | 4300 | 10 | 864 |
| 16 | 270 | 8 x 11.5 | F1A | ULR277M1CF1A | 13 | 5000 | 10 | 864 |
| 16 | 330 | 6.3 x 9 | E09 | ULR337M1CE09 | 18 | 3030 | 10 | 1056 |
| 16 | 330 | 6.3 x 10.5 | E1K | ULR337M1CE1K | 18 | 3200 | 10 | 1056 |
| 16 | 330 | 6.3 x 11 | E11 | ULR337M1CE11 | 18 | 3200 | 10 | 1056 |
| 16 | 330 | 8 x 7 | F07 | ULR337M1CF07 | 13 | 4300 | 10 | 1056 |
| 16 | 330 | 8 x 8 | F08 | ULR337M1CF08 | 13 | 4300 | 10 | 1056 |
| 16 | 330 | 8 x 11.5 | F1A | ULR337M1CF1A | 10 | 5800 | 10 | 1056 |
| 16 | 330 | 10 x 9 | G09 | ULR337M1CG09 | 13 | 4300 | 10 | 1056 |
| 16 | 330 | 10 x 12.5 | G1B | ULR337M1CG1B | 10 | 6100 | 10 | 1056 |
| 16 | 470 | 6.3 x 11 | E11 | ULR477M1CE11 | 11 | 4227 | 10 | 1504 |
| 16 | 470 | 8 x 8 | F08 | ULR477M1CF08 | 12 | 4067 | 10 | 1504 |
| 16 | 470 | 8 x 11.5 | F1A | ULR477M1CF1A | 11 | 5100 | 10 | 1504 |

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ULR Series

+105° C, Higher Ripple Current, Lower ESR than ULG

| Rated Vol. (V) | Rated Cap. (μF) | Case Size ΦD x L (mm) | Size Code | Part Number | ESR (mΩ, max/ 20°C, 100kHz) | Rated Ripple (mArms/ 105°C, 100kHz) | DF (% max) | Leakage Current (μA/2 mins) |
|----------------|-----------------|-----------------------|-----------|--------------|-----------------------------|-------------------------------------|------------|-----------------------------|
| 16 | 470 | 10 x 12.5 | G1B | ULR477M1CG1B | 10 | 6100 | 10 | 1504 |
| 16 | 680 | 8 x 11.5 | F1A | ULR687M1CF1A | 11 | 5100 | 10 | 2176 |
| 16 | 680 | 10 x 12.5 | G1B | ULR687M1CG1B | 10 | 6100 | 10 | 2176 |
| 16 | 820 | 8 x 11.5 | F1A | ULR827M1CF1A | 11 | 4935 | 10 | 2624 |
| 16 | 820 | 10 x 12.5 | G1B | ULR827M1CG1B | 10 | 6100 | 10 | 2624 |
| 16 | 1000 | 8 x 16 | F16 | ULR108M1CF16 | 10 | 5950 | 10 | 3200 |
| 16 | 1000 | 10 x 12.5 | G1B | ULR108M1CG1B | 10 | 6100 | 10 | 3200 |
| 20 | 33 | 6.3 x 8 | E08 | ULR336M1DE08 | 35 | 2000 | 10 | 280 |
| 20 | 47 | 8 x 8 | F08 | ULR476M1DF08 | 33 | 2100 | 10 | 280 |
| 20 | 100 | 8 x 11.5 | F1A | ULR107M1DF1A | 32 | 2750 | 10 | 400 |
| 20 | 150 | 10 x 12.5 | G1B | ULR157M1DG1B | 28 | 2900 | 10 | 600 |
| 25 | 22 | 6.3 x 8 | E08 | ULR226M1EE08 | 45 | 1870 | 10 | 280 |
| 25 | 33 | 8 x 8 | F08 | ULR336M1EF08 | 40 | 2050 | 10 | 280 |
| 25 | 47 | 8 x 8 | F08 | ULR476M1EF08 | 36 | 2100 | 10 | 280 |
| 25 | 100 | 8 x 11.5 | F1A | ULR107M1EF1A | 32 | 2750 | 10 | 500 |
| 25 | 220 | 8 x 11.5 | F1A | ULR227M1EF1A | 32 | 2750 | 10 | 1100 |
| 25 | 330 | 8 x 11.5 | F1A | ULR337M1EF1A | 32 | 2750 | 10 | 1650 |
| 25 | 330 | 10 x 12.5 | G1B | ULR337M1EG1B | 45 | 2700 | 10 | 1650 |
| 25 | 560 | 8 x 16 | F16 | ULR567M1EF16 | 35 | 2916 | 10 | 2800 |
| 25 | 680 | 8 x 16 | F16 | ULR687M1EF16 | 16 | 4700 | 10 | 3400 |
| 25 | 1000 | 10 x 16 | G16 | ULR108M1EG16 | 10 | 6100 | 10 | 5000 |
| 35 | 100 | 6.3 x 9 | E09 | ULR107M1EE09 | 70 | 1537 | 10 | 700 |
| 35 | 100 | 8 x 11.5 | F1A | ULR107M1VF1A | 55 | 2000 | 10 | 700 |
| 35 | 100 | 10 x 12 | G12 | ULR107M1EG12 | 70 | 2267 | 10 | 700 |
| 35 | 100 | 10 x 12.5 | G1B | ULR107M1VG1B | 60 | 2000 | 10 | 700 |
| 35 | 220 | 10 x 12.5 | G1B | ULR227M1VG1B | 50 | 2500 | 10 | 1540 |

UER Series

+105° C, Higher Ripple Current, Long Life 5,000 Hours

Features

- Higher Ripple Current, Long Life 5,000 Hours
- Wide Temperature Range
- RoHS Compliant



Applications

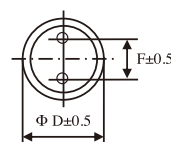
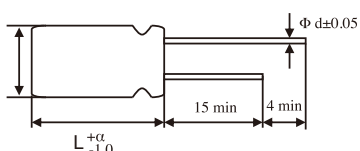
- Suitable for DC-DC Converters, Voltage Regulators, Decoupling Applications for Computer Motherboards, etc.

Specifications

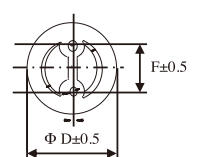
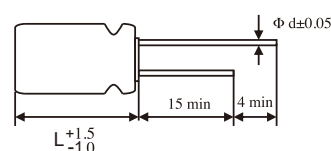
| Item | Performance Characteristics | | | | |
|--|---|------------------|---|--------------------|---------------------|
| Operating Temperature Range | -55 to +105°C | | | | |
| Rated Working Voltage Range | 2.5VDC to 35VDC | | | | |
| Surge Voltage, SV | SV=VVx1.15VDC (Normal temperature) | | | | |
| Nominal Capacitance Range | 56 to 2500µF (120Hz, +20°C) | | | | |
| Capacitance Tolerance | ±20% (120Hz, +20°C) | | | | |
| tan δ | 0.10 (120Hz, +20°C) | | | | |
| Leakage Current, Lc | After 2 minutes applications of rated working voltage at 20°C For product rated voltage ≤ 2.5V, I ≤ 0.2CV or 500 (µ A) (Take whichever is greater) For product rated voltage > 2.5V, I ≤ 0.2CV or 280 (µ A) (Take whichever is greater) | | | | |
| Temperature Characteristics, Impedance Ratio | At -55°C 100kHz (Low temperature) | | | Z/Z20°C ≤ 1.25 | |
| | At +105°C 100kHz (High temperature) | | | Z/Z20°C ≤ 1.25 | |
| Frequency Coefficient for Allowable Ripple Current | Frequency | 120Hz ≤ f < 1kHz | 1kHz ≤ f < 10kHz | 10kHz ≤ f < 100kHz | 100kHz ≤ f < 500kHz |
| | Coefficient | 0.05 | 0.30 | 0.70 | 1.00 |
| Endurance | Test conditions +105°C, 5,000 hours Rated voltage applied | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Damp Heat Test (Steady State) | Test conditions +60°C, 90% to 95% RH 1,000 hours No applied voltage | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Surge Voltage Test | At normal temperature, charge at surge voltage for 30 sec. and discharge via a 1kΩ protective resistor for 330 sec. Repeat for 1,000 cycles. | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Others | JIS-C-5101-4 | | | | |

Dimensions

When L < 16mm, α = +1.0; L ≥ 16mm, α = +1.5



When L < 16mm, α = +1.0; L ≥ 16mm, α = +1.5



UER Series

+105° C, Higher Ripple Current, Long Life 5,000 Hours

Size List

New Item | RV: Rated Voltage

| RV μF | Code | 2.5 (0E) | 4 (0G) | 6.3 (0J) | 7.5 (07) | 10 (1A) | 16 (1C) | 20 (1D) | 25 (1E) | 35V (1V) |
|----------|------|------------------|--------|-----------------------|----------|----------|-----------------------|---------|----------|----------|
| 56 | 566 | | | | | | | | | F1A |
| 100 | 107 | | | E06 | | | E05, E07, E08 | | F1A | F08 |
| 120 | 127 | | | | | | | | | G1B |
| 150 | 157 | | | | | | E05 | | | |
| 220 | 227 | | | | | | F1A | | F1A | |
| 270 | 277 | | | | | | E08, F08, F1A | | | |
| 330 | 337 | | | D08, E08 | D09 | | X09, E11, F08, F1A | | F1A, G1B | |
| 390 | 397 | | | | | | | F1A | | |
| 470 | 477 | E08 | | D10, X10, E08, F08 | | | F08, F1A, G1B | | F11, F1A | |
| 500 | 507 | | | | D09 | | | | | |
| 560 | 567 | D08, D09, E08 | E08 | E08, F08 | | | F1A | G1B | | |
| 680 | 687 | | | E75, E08, E11, F08 | | | F1A | | F16 | |
| 820 | 827 | E08, F08 | | E75, E85, F08, F1A | E10 | F1A | G1B | | | |
| 1000 | 108 | | | F08, F1A | | F16, G12 | F16, G1B | | G16 | |
| 1200 | 128 | | | F1A | | G1B | | | | |
| 1500 | 158 | | | F1A, G1B | | | G16 | | | |
| 2500 | 258 | | | G1B | | | | | | |

(Unit: mm)

| Size Code | D08 | D09 | D10 | X09 | X10 | E05 | E06 | E07 | E75 | E08 |
|-----------|-------|-------|--------|---------|----------|---------|---------|---------|-----------|---------|
| Φ DxL | 5 x 8 | 5 x 9 | 5 x 10 | 5.5 x 9 | 5.5 x 10 | 6.3 x 5 | 6.3 x 6 | 6.3 x 7 | 6.3 x 7.5 | 6.3 x 8 |
| F± 0.5 | 2.0 | 2.0 | 2.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Φ d | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.45 | 0.45 | 0.5 | 0.5 | 0.6 |
| α | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |

| Size Code | E85 | E10 | E11 | F08 | F11 | F1A | F16 | G12 | G1B | G16 |
|-----------|-----------|----------|----------|-------|--------|----------|--------|---------|-----------|---------|
| Φ DxL | 6.3 x 8.5 | 6.3 x 10 | 6.3 x 11 | 8 x 8 | 8 x 11 | 8 x 11.5 | 8 x 16 | 10 x 12 | 10 x 12.5 | 10 x 16 |
| F± 0.5 | 2.5 | 2.0 | 2.5 | 3.5 | 3.5 | 3.5 | 3.5 | 5.0 | 5.0 | 5.0 |
| Φ d | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| α | 1.0 | 1.0 | 1.5 | 1.0 | 1.0 | 1.5 | 1.5 | 1.0 | 1.5 | 1.5 |

Specifications are subject to change without notice. Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately.

UER Series

+105° C, Higher Ripple Current, Long Life 5,000 Hours

Characteristics List

| Rated Vol. (V) | Rated Cap. (μF) | Case Size ΦD x L (mm) | Size Code | Part Number | ESR (mΩ, max/ 20°C, 100kHz) | Rated Ripple (mArms/ 105°C, 100kHz) | DF (% max) | Leakage Current (μA/2 mins) |
|----------------|-----------------|-----------------------|-----------|--------------|-----------------------------|-------------------------------------|------------|-----------------------------|
| 2.5 | 470 | 6.3 x 8 | E08 | UER477M0EE08 | 10 | 4500 | 10 | 500 |
| 2.5 | 560 | 5 x 8 | D08 | UER567M0ED08 | 7 | 4300 | 10 | 500 |
| 2.5 | 560 | 5 x 9 | D09 | UER567M0ED09 | 7 | 4350 | 10 | 500 |
| 2.5 | 560 | 6.3 x 8 | E08 | UER567M0EE08 | 7 | 4880 | 10 | 500 |
| 2.5 | 820 | 6.3 x 8 | E08 | UER827M0EE08 | 7 | 5600 | 10 | 500 |
| 2.5 | 820 | 8 x 8 | F08 | UER827M0EF08 | 7 | 5600 | 10 | 500 |
| 4 | 560 | 6.3 x 8 | E08 | UER567M0GE08 | 7 | 4500 | 10 | 448 |
| 6.3 | 100 | 6.3 x 6 | E06 | UER107M0JE06 | 30 | 2580 | 10 | 280 |
| 6.3 | 330 | 5 x 8 | D08 | UER337M0JD08 | 13 | 3135 | 10 | 416 |
| 6.3 | 330 | 6.3 x 8 | E08 | UER337M0JE08 | 10 | 4083 | 10 | 416 |
| 6.3 | 470 | 5 x 10 | D10 | UER477M0JD10 | 20 | 2788 | 10 | 592 |
| 6.3 | 470 | 5.5 x 10 | X10 | UER477M0JX10 | 12 | 3796 | 10 | 592 |
| 6.3 | 470 | 6.3 x 8 | E08 | UER477M0JE08 | 10 | 4500 | 10 | 592 |
| 6.3 | 470 | 8 x 8 | F08 | UER477M0JF08 | 8 | 4000 | 10 | 592 |
| 6.3 | 560 | 6.3 x 8 | E08 | UER567M0JE08 | 8 | 4700 | 10 | 706 |
| 6.3 | 560 | 8 x 8 | F08 | UER567M0JF08 | 8 | 4800 | 10 | 706 |
| 6.3 | 680 | 6.3 x 7.5 | E75 | UER687M0JE75 | 8 | 4800 | 10 | 857 |
| 6.3 | 680 | 6.3 x 8 | E08 | UER687M0JE08 | 8 | 4565 | 10 | 857 |
| 6.3 | 680 | 6.3 x 11 | E11 | UER687M0JE11 | 8 | 4950 | 10 | 857 |
| 6.3 | 680 | 8 x 8 | F08 | UER687M0JF08 | 8 | 5257 | 10 | 587 |
| 6.3 | 820 | 6.3 x 7.5 | E75 | UER827M0JE75 | 12 | 3628 | 10 | 1033 |
| 6.3 | 820 | 6.3 x 8.5 | E85 | UER827M0JE85 | 8 | 4800 | 10 | 1033 |
| 6.3 | 820 | 8 x 8 | F08 | UER827M0JF08 | 8 | 4850 | 10 | 1033 |
| 6.3 | 820 | 8 x 11.5 | F1A | UER827M0JF1A | 10 | 5463 | 10 | 1033 |
| 6.3 | 1000 | 8 x 8 | F08 | UER108M0JF08 | 10 | 4702 | 10 | 1260 |
| 6.3 | 1000 | 8 x 11.5 | F1A | UER108M0JF1A | 8 | 4900 | 10 | 1260 |
| 6.3 | 1200 | 8 x 11.5 | F1A | UER128M0JF1A | 15 | 4460 | 10 | 1512 |
| 6.3 | 1500 | 8 x 11.5 | F1A | UER158M0JF1A | 8 | 4900 | 10 | 1890 |
| 6.3 | 1500 | 10 x 12.5 | G1B | UER158M0JG1B | 10 | 6438 | 10 | 1890 |
| 6.3 | 2500 | 10 x 12.5 | G1B | UER258M0JG1B | 7 | 6100 | 10 | 3150 |
| 7.5 | 330 | 5 x 9 | D09 | UER337M07D09 | 12 | 3100 | 10 | 495 |
| 7.5 | 500 | 5 x 9 | D09 | UER507M07D09 | 12 | 3100 | 10 | 750 |
| 7.5 | 820 | 6.3 x 10 | E10 | UER827M07E10 | 10 | 4200 | 10 | 1230 |
| 10 | 820 | 8 x 11.5 | F1A | UER827M1AF1A | 8 | 6108 | 10 | 1640 |
| 10 | 1000 | 8 x 16 | F16 | UER108M1AF16 | 20 | 4460 | 10 | 2000 |
| 10 | 1000 | 10 x 12 | G12 | UER108M1AG12 | 10 | 6330 | 10 | 2000 |
| 10 | 1200 | 10 x 12.5 | G1B | UER128M1AG1B | 8 | 5000 | 10 | 2400 |
| 16 | 100 | 6.3 x 5 | E05 | UER107M1CE05 | 24 | 2490 | 10 | 320 |
| 16 | 100 | 6.3 x 7 | E07 | UER107M1CE07 | 24 | 2490 | 10 | 320 |
| 16 | 100 | 6.3 x 8 | E08 | UER107M1CE08 | 24 | 2820 | 10 | 320 |
| 16 | 150 | 6.3 x 5 | E05 | UER157M1CE05 | 24 | 2184 | 10 | 480 |

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UER Series

+105° C, Higher Ripple Current, Long Life 5,000 Hours

| Rated Vol. (V) | Rated Cap. (μF) | Case Size ΦD x L (mm) | Size Code | Part Number | ESR (mΩ, max/ 20°C, 100kHz) | Rated Ripple (mArms/ 105°C, 100kHz) | DF (% max) | Leakage Current (μA/2 mins) |
|----------------|-----------------|-----------------------|-----------|--------------|-----------------------------|-------------------------------------|------------|-----------------------------|
| 16 | 220 | 8 x 11.5 | F1A | UER227M1CF1A | 15 | 4300 | 10 | 704 |
| 16 | 270 | 6.3 x 8 | E08 | UER277M1CE08 | 15 | 3800 | 10 | 864 |
| 16 | 270 | 8 x 8 | F08 | UER277M1CF08 | 12 | 5000 | 10 | 864 |
| 16 | 270 | 8 x 11.5 | F1A | UER277M1CF1A | 10 | 5000 | 10 | 864 |
| 16 | 330 | 5.5 x 9 | X09 | UER337M1CX09 | 20 | 2808 | 10 | 1056 |
| 16 | 330 | 6.3 x 11 | E11 | UER337M1CE11 | 18 | 3487 | 10 | 1056 |
| 16 | 330 | 8 x 8 | F08 | UER337M1CF08 | 13 | 4124 | 10 | 1056 |
| 16 | 330 | 8 x 11.5 | F1A | UER337M1CF1A | 10 | 5000 | 10 | 1056 |
| 16 | 470 | 8 x 8 | F08 | UER477M1CF08 | 12 | 4292 | 10 | 1504 |
| 16 | 470 | 8 x 11.5 | F1A | UER477M1CF1A | 11 | 5400 | 10 | 1504 |
| 16 | 470 | 10 x 12.5 | G1B | UER477M1CG1B | 11 | 5600 | 10 | 1504 |
| 16 | 560 | 8 x 11.5 | F1A | UER567M1CF1A | 15 | 4460 | 10 | 1792 |
| 16 | 680 | 8 x 11.5 | F1A | UER687M1CF1A | 15 | 4460 | 10 | 2176 |
| 16 | 820 | 10 x 12.5 | G1B | UER827M1CG1B | 10 | 6438 | 10 | 2624 |
| 16 | 1000 | 8 x 16 | F16 | UER108M1CF16 | 11 | 6014 | 10 | 3200 |
| 16 | 1000 | 10 x 12.5 | G1B | UER108M1CG1B | 11 | 5600 | 10 | 3200 |
| 16 | 1500 | 10 x 16 | G16 | UER158M1CG16 | 10 | 6100 | 10 | 4800 |
| 20 | 390 | 8 x 11.5 | F1A | UER397M1DF1A | 18 | 4520 | 10 | 1560 |
| 20 | 560 | 10 x 12.5 | G1B | UER567M1DG1B | 30 | 3350 | 10 | 2240 |
| 25 | 100 | 8 x 11.5 | F1A | UER107M1EF1A | 38 | 2600 | 10 | 500 |
| 25 | 220 | 8 x 11.5 | F1A | UER227M1EF1A | 38 | 2600 | 10 | 1100 |
| 25 | 330 | 8 x 11.5 | F1A | UER337M1EF1A | 35 | 3100 | 10 | 1650 |
| 25 | 330 | 10 x 12.5 | G1B | UER337M1EG1B | 35 | 2750 | 10 | 1650 |
| 25 | 470 | 8 x 11 | F11 | UER477M1EF11 | 16 | 4238 | 10 | 2350 |
| 25 | 470 | 8 x 11.5 | F1A | UER477M1EF1A | 35 | 2750 | 10 | 2350 |
| 25 | 680 | 8 x 16 | F16 | UER687M1EF16 | 16 | 4987 | 10 | 3400 |
| 25 | 1000 | 10 x 16 | G16 | UER108M1EG16 | 20 | 5050 | 10 | 5000 |
| 35 | 56 | 8 x 11.5 | F1A | UER566M1VF1A | 55 | 2329 | 10 | 392 |
| 35 | 100 | 8 x 8 | F08 | UER107M1VF08 | 55 | 2005 | 10 | 700 |
| 35 | 120 | 10 x 12.5 | G1B | UER127M1VG1B | 40 | 3030 | 10 | 840 |

UPG Series

+105° C, High Voltage, Low ESR

Features

- High Voltage, Low ESR
- Wide Temperature Range
- RoHS Compliant

Applications

- Suitable for DC-DC Converters, Voltage Regulators, Decoupling Applications for Computer Motherboards, etc.

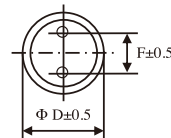
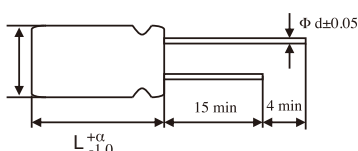
Specifications



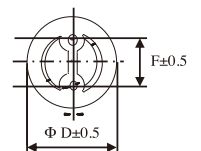
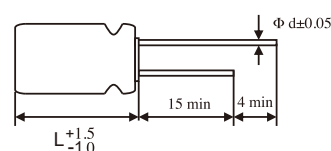
| Item | Performance Characteristics | | | | |
|--|---|------------------|---|--------------------|---------------------|
| Operating Temperature Range | -55 to +105°C | | | | |
| Rated Working Voltage Range | 50VDC to 200VDC | | | | |
| Surge Voltage, SV | SV=VVx1.15VDC (Normal temperature) | | | | |
| Nominal Capacitance Range | 1 to 220μF (120Hz, +20°C) | | | | |
| Capacitance Tolerance | ±20% (120Hz, +20°C) | | | | |
| tan δ | 0.12 (120Hz, +20°C) | | | | |
| Leakage Current, Lc | After 2 minutes applications of rated working voltage at 20°C For product rated voltage ≤ 2.5V, I ≤ 0.2CV or 500 (μ A) (Take whichever is greater) For product rated voltage > 2.5V, I ≤ 0.2CV or 280 (μ A) (Take whichever is greater) | | | | |
| Temperature Characteristics, Impedance Ratio | At -55°C 100kHz (Low temperature) | | | Z/Z20°C ≤ 1.25 | |
| | At +105°C 100kHz (High temperature) | | | Z/Z20°C ≤ 1.25 | |
| Frequency Coefficient for Allowable Ripple Current | Frequency | 120Hz ≤ f < 1kHz | 1kHz ≤ f < 10kHz | 10kHz ≤ f < 100kHz | 100kHz ≤ f < 500kHz |
| | Coefficient | 0.05 | 0.30 | 0.70 | 1.00 |
| Endurance | Test conditions +105°C, 2,000 hours Rated voltage applied | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Damp Heat Test (Steady State) | Test conditions +60°C, 90% to 95% RH 1,000 hours No applied voltage | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Surge Voltage Test | At normal temperature, charge at surge voltage for 30 sec. and discharge via a 1kΩ protective resistor for 330 sec. Repeat for 1,000 cycles. | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Others | JIS-C-5101-4 | | | | |

Dimensions

When L < 16mm, α = +1.0; L ≥ 16mm, α = +1.5



When L < 16mm, α = +1.0; L ≥ 16mm, α = +1.5



UPG Series

+105° C, High Voltage, Low ESR

Size List

New Item | RV: Rated Voltage

| μF \ RV | Code | 50 (1H) | 63 (1J) | 80 (1K) | 100 (2A) | 200 (2D) |
|--------------------|------|---------------|---------|---------|----------|----------|
| 1 | 105 | | | | | E08 |
| 3.3 | 335 | | | E06 | | F08 |
| 4.7 | 475 | | | | | F1A |
| 6.8 | 685 | | | | F1A | G1B |
| 8.2 | 825 | | | | | G1B |
| 10 | 106 | D08, E06 | E11 | | E11, F1A | |
| 15 | 156 | E07 | | | | |
| 18 | 186 | | | | G1B | |
| 22 | 226 | E07, F08 | F08 | | G1B | |
| 33 | 336 | E08, E11, F08 | F08 | | G1B | |
| 47 | 476 | F1A | G1B | | G16 | |
| 56 | 566 | E13, G1B | G1B | | | |
| 68 | 686 | G1B | | | | |
| 100 | 107 | E15, G1B | G1B | | | |
| 120 | 127 | G1B | G1B | | | |
| 150 | 157 | G16 | | | | |
| 180 | 187 | G16 | | | | |
| 220 | 227 | F16, G16 | | | | |

(Unit: mm)

| Size Code | D08 | E06 | E07 | E08 | E11 | E13 |
|-------------|-------|---------|---------|---------|----------|----------|
| Φ DxL | 5 x 8 | 6.3 x 6 | 6.3 x 7 | 6.3 x 8 | 6.3 x 11 | 6.3 x 13 |
| F \pm 0.5 | 2.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Φ d | 0.6 | 0.45 | 0.5 | 0.6 | 0.6 | 0.6 |
| α | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.0 |

| Size Code | E15 | F08 | F1A | F16 | G1B | G16 |
|-------------|----------|-------|----------|--------|-----------|---------|
| Φ DxL | 6.3 x 15 | 8 x 8 | 8 x 11.5 | 8 x 16 | 10 x 12.5 | 10 x 16 |
| F \pm 0.5 | 2.5 | 3.5 | 3.5 | 5.0 | 5.0 | 5.0 |
| Φ d | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| α | 1.0 | 1.0 | 1.5 | 1.5 | 1.5 | 1.5 |

Specifications are subject to change without notice. Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately.

UPG Series

+ 105° C, High Voltage, Low ESR

Characteristics List

| Rated Vol. (V) | Rated Cap. (μF) | Case Size ΦD x L (mm) | Size Code | Part Number | ESR (mΩ, max/ 20°C, 100kHz) | Rated Ripple (mArms/ 105°C, 100kHz) | DF (% max) | Leakage Current (μA/2 mins) |
|----------------|-----------------|-----------------------|-----------|--------------|-----------------------------|-------------------------------------|------------|-----------------------------|
| 50 | 10 | 5 x 8 | D08 | UPG106M1HD08 | 80 | 790 | 12 | 280 |
| 50 | 10 | 6.3 x 6 | E06 | UPG106M1HE06 | 200 | 547 | 12 | 280 |
| 50 | 15 | 6.3 x 7 | E07 | UPG156M1HE07 | 100 | 771 | 12 | 280 |
| 50 | 22 | 6.3 x 7 | E07 | UPG226M1HE07 | 70 | 921 | 12 | 280 |
| 50 | 22 | 8 x 8 | F08 | UPG226M1HF08 | 45 | 1300 | 12 | 280 |
| 50 | 33 | 6.3 x 8 | E08 | UPG336M1HE08 | 45 | 1214 | 12 | 330 |
| 50 | 33 | 6.3 x 11 | E11 | UPG336M1HE11 | 70 | 1115 | 12 | 330 |
| 50 | 33 | 8 x 8 | F08 | UPG336M1HF08 | 45 | 1300 | 12 | 330 |
| 50 | 47 | 8 x 11.5 | F1A | UPG476M1HF1A | 42 | 1500 | 12 | 470 |
| 50 | 56 | 6.3 x 13 | E13 | UPG566M1HE13 | 60 | 1297 | 12 | 560 |
| 50 | 56 | 10 x 12.5 | G1B | UPG566M1HG1B | 38 | 2000 | 12 | 560 |
| 50 | 68 | 10 x 12.5 | G1B | UPG686M1HG1B | 35 | 2100 | 12 | 680 |
| 50 | 100 | 6.3 x 15 | E15 | UPG107M1HE15 | 55 | 1444 | 12 | 1000 |
| 50 | 100 | 10 x 12.5 | G1B | UPG107M1HG1B | 35 | 2100 | 12 | 1000 |
| 50 | 120 | 10 x 12.5 | G1B | UPG127M1HG1B | 35 | 2100 | 12 | 1200 |
| 50 | 150 | 10 x 16 | G16 | UPG157M1HG16 | 50 | 2017 | 12 | 1500 |
| 50 | 180 | 10 x 16 | G16 | UPG187M1HG16 | 50 | 2017 | 12 | 1800 |
| 50 | 220 | 8 x 16 | F16 | UPG227M1HF16 | 60 | 1624 | 12 | 2200 |
| 50 | 220 | 10 x 16 | G16 | UPG227M1HG16 | 55 | 1923 | 12 | 2200 |
| 63 | 10 | 6.3 x 11 | E11 | UPG106M1JE11 | 90 | 850 | 12 | 280 |
| 63 | 22 | 8 x 8 | F08 | UPG226M1JF08 | 65 | 1100 | 12 | 280 |
| 63 | 33 | 8 x 8 | F08 | UPG336M1JF08 | 65 | 1100 | 12 | 416 |
| 63 | 47 | 10 x 12.5 | G1B | UPG476M1JG1B | 60 | 1300 | 12 | 592 |
| 63 | 56 | 10 x 12.5 | G1B | UPG566M1JG1B | 55 | 1500 | 12 | 706 |
| 63 | 100 | 10 x 12.5 | G1B | UPG107M1JG1B | 55 | 1731 | 12 | 1260 |
| 63 | 120 | 10 x 12.5 | G1B | UPG127M1JG1B | 55 | 1731 | 12 | 1512 |
| 80 | 3.3 | 6.3 x 6 | E06 | UPG335M1KE06 | 300 | 350 | 12 | 280 |
| 100 | 6.8 | 8 x 11.5 | F1A | UPG685M2AF1A | 45 | 1600 | 12 | 280 |
| 100 | 10 | 6.3 x 11 | E11 | UPG106M2AE11 | 90 | 1650 | 12 | 280 |
| 100 | 10 | 8 x 11.5 | F1A | UPG106M2AF1A | 42 | 1800 | 12 | 280 |
| 100 | 18 | 10 x 12.5 | G1B | UPG186M2AG1B | 38 | 2200 | 12 | 300 |
| 100 | 22 | 10 x 12.5 | G1B | UPG226M2AG1B | 38 | 2200 | 12 | 440 |
| 100 | 33 | 10 x 12.5 | G1B | UPG336M2AG1B | 65 | 1550 | 12 | 660 |
| 100 | 47 | 10 x 16 | G16 | UPG476M2AG16 | 90 | 1503 | 12 | 940 |
| 200 | 1 | 6.3 x 8 | E08 | UPG105M2DE08 | 2000 | 150 | 12 | 280 |
| 200 | 3.3 | 8 x 8 | F08 | UPG335M2DF08 | 500 | 300 | 12 | 280 |
| 200 | 4.7 | 8 x 11.5 | F1A | UPG475M2DF1A | 400 | 350 | 12 | 280 |
| 200 | 6.8 | 10 x 12.5 | G1B | UPG685M2DG1B | 300 | 500 | 12 | 280 |
| 200 | 8.2 | 10 x 12.5 | G1B | UPG825M2DG1B | 300 | 595 | 12 | 328 |

Specifications are subject to change without notice. Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately.

UBR Series

+125° C, High Temperature, Low ESR

• Features

- High Temperature
- Low ESR
- RoHS Compliant



• Applications

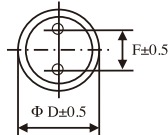
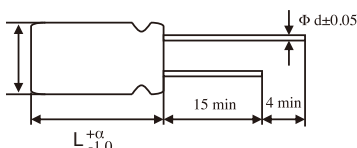
- Suitable for DC-DC Converters, Voltage Regulators, Decoupling Applications for Computer Motherboards, etc.

• Specifications

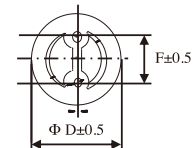
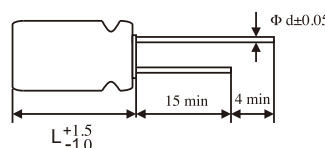
| Item | Performance Characteristics | | | | |
|--|---|------------------|---|----------------------------|---------------------|
| Operating Temperature Range | -55 to +125°C | | | | |
| Rated Working Voltage Range | 2.5VDC to 100VDC | | | | |
| Surge Voltage, SV | SV=VVx1.15VDC (Normal temperature) | | | | |
| Nominal Capacitance Range | 10 to 3300μF (120Hz, +20°C) | | | | |
| Capacitance Tolerance | ±20% (120Hz, +20°C) | | | | |
| tan δ | 0.12 (120Hz, +20°C) | | | | |
| Leakage Current, Lc | After 2 minutes applications of rated working voltage at 20°C For product rated voltage ≤ 2.5V, I ≤ 0.2CV or 500 (μ A) (Take whichever is greater) For product rated voltage > 2.5V, I ≤ 0.2CV or 280 (μ A) (Take whichever is greater) | | | | |
| Temperature Characteristics, Impedance Ratio | At -55°C 100kHz (Low temperature) | | | Z/Z _{20°C} ≤ 1.25 | |
| | At +125°C 100kHz (High temperature) | | | Z/Z _{20°C} ≤ 1.25 | |
| Frequency Coefficient for Allowable Ripple Current | Frequency | 120Hz ≤ f < 1kHz | 1kHz ≤ f < 10kHz | 10kHz ≤ f < 100kHz | 100kHz ≤ f < 500kHz |
| | Coefficient | 0.05 | 0.30 | 0.70 | 1.00 |
| Endurance | Test conditions +125°C, 1,000 hours Rated voltage applied | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 200% of the initial specified value | | |
| | | ESR | ≤ 200% of the initial specified value | | |
| | | Lc | ≤ The Initial specified value | | |
| Damp Heat Test (Steady State) | Test conditions +60°C, 90% to 95% RH 1,000 hours No applied voltage | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Surge Voltage Test | At normal temperature, charge at surge voltage for 30 sec. and discharge via a 1kΩ protective resistor for 330 sec. Repeat for 1,000 cycles. | ΔC/C | Within ±20% of the initial measured value | | |
| | | tan δ | ≤ 150% of the initial specified value | | |
| | | ESR | ≤ 150% of the initial specified value | | |
| | | Lc | ≤ The initial specified value | | |
| Others | JIS-C-5101-4 | | | | |

• Dimensions

When L < 16mm, α = +1.0; L ≥ 16mm, α = +1.5



When L < 16mm, α = +1.0; L ≥ 16mm, α = +1.5



UBR Series

+125° C, High Temperature, Low ESR

Size List

New Item | RV: Rated Voltage

| RV μF | Code | 2.5 (0E) | 4 (0G) | 6.3 (0J) | 7.5 (07) | 10 (1A) | 16 (1C) | 20 (1D) | 25 (1E) | 35 (1V) | 63 (1J) | 100 (2A) |
|----------|------|----------|--------|------------------|----------|---------|------------------|---------|---------|----------|---------|----------|
| 10 | 106 | | | | | | | | | E08 | E11 | E11 |
| 22 | 226 | | | | | | | | | E08 | | |
| 47 | 476 | | | | | | | | | E08, F08 | | |
| 100 | 107 | | | | | | E11 | | | F1A | | |
| 180 | 187 | | | | | | | | F1A | | | |
| 220 | 227 | | | | | | E11, F08 | | F1A | G1B | | |
| 270 | 277 | | | | | | F1A | | F1A | | | |
| 330 | 337 | | | | | E08 | | | | | | |
| 470 | 477 | | | | E09 | | E11, F1A, G1B | | | | | |
| 560 | 567 | | | F08 | | | F11 | G1B | | | | |
| 820 | 827 | E08 | | E85, E11, F08 | E10 | F1A | G1B | | | | | |
| 1000 | 108 | | | E10, F08, F1A | E11 | | F16, G1B | | | | | |
| 1200 | 128 | F1A | G1B | | | | | | | | | |
| 1500 | 158 | | | E13, F1A | | | | | | | | |
| 3300 | 338 | | | G15 | | | | | | | | |

(Unit: mm)

| Size Code | E08 | E85 | E09 | E10 | E11 | E13 | F08 | F1A | F16 | G1B | G15 |
|-----------|---------|-----------|---------|----------|----------|----------|-------|----------|--------|-----------|---------|
| Φ DxL | 6.3 x 8 | 6.3 x 8.5 | 6.3 x 9 | 6.3 x 10 | 6.3 x 11 | 6.3 x 13 | 8 x 8 | 8 x 11.5 | 8 x 16 | 10 x 12.5 | 10 x 15 |
| F±0.5 | 2.5 | 2.5 | 2.5 | 2.0 | 2.5 | 2.5 | 3.5 | 3.5 | 3.5 | 5.0 | 5.0 |
| Φ d | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| α | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.0 | 1.0 | 1.5 | 1.5 | 1.5 | 1.5 |

UBR Series

+125° C, High Temperature, Low ESR

Characteristics List

| Rated Vol. (V) | Rated Cap. (μF) | Case Size ΦD x L (mm) | Size Code | Part Number | ESR (mΩ, max/ 20°C, 100kHz) | Rated Ripple (mA rms/ 125°C, 100kHz) | Rated Ripple (mA rms/ 105°C, 100kHz) | DF (% max) | Leakage Current (μA/2 mins) |
|----------------|-----------------|-----------------------|-----------|--------------|-----------------------------|--------------------------------------|--------------------------------------|------------|-----------------------------|
| 2.5 | 820 | 6.3 x 8 | E08 | UBR827M0EE08 | 12 | 1680 | 5600 | 12 | 500 |
| 2.5 | 1200 | 8 x 11.5 | F1A | UBR128M0EF1A | 10 | 1830 | 6100 | 12 | 600 |
| 4 | 1200 | 10 x 12.5 | G1B | UBR128M0GG1B | 10 | 1830 | 6100 | 12 | 960 |
| 6.3 | 560 | 8 x 8 | F08 | UBR567M0JF08 | 12 | 1710 | 5700 | 12 | 706 |
| 6.3 | 820 | 6.3 x 8.5 | E85 | UBR827M0JE85 | 12 | 1180 | 3950 | 12 | 1033 |
| 6.3 | 820 | 6.3 x 11 | E11 | UBR827M0JE11 | 10 | 1560 | 5200 | 12 | 1033 |
| 6.3 | 820 | 8 x 8 | F08 | UBR827M0JF08 | 12 | 1500 | 5000 | 12 | 1033 |
| 6.3 | 1000 | 6.3 x 10 | E10 | UBR108M0JE10 | 8 | 2106 | 6661 | 12 | 1260 |
| 6.3 | 1000 | 8 x 8 | F08 | UBR108M0JF08 | 10 | 1973 | 6240 | 12 | 1260 |
| 6.3 | 1000 | 8 x 11.5 | F1A | UBR108M0JF1A | 10 | 2293 | 7250 | 12 | 1260 |
| 6.3 | 1500 | 6.3 x 13 | E13 | UBR108M0JE13 | 12 | 1930 | 6103 | 12 | 1890 |
| 6.3 | 1500 | 8 x 11.5 | F1A | UBR108M0JF1A | 12 | 2093 | 6618 | 12 | 1890 |
| 6.3 | 3300 | 10 x 15 | G15 | UBR108M0JG15 | 15 | 2261 | 7535 | 12 | 4158 |
| 7.5 | 470 | 6.3 x 9 | E09 | UBR477M07E09 | 12 | 1644 | 5198 | 12 | 705 |
| 7.5 | 820 | 6.3 x 10 | E10 | UBR827M07E10 | 15 | 1538 | 4864 | 12 | 1230 |
| 7.5 | 1000 | 6.3 x 11 | E11 | UBR108M07E11 | 8 | 2195 | 6942 | 12 | 1500 |
| 10 | 330 | 6.3 x 8 | E08 | UBR337M1AE08 | 17 | 1314 | 4156 | 12 | 660 |
| 10 | 820 | 8 x 11.5 | F1A | UBR827M1AF1A | 12 | 1530 | 5100 | 12 | 1640 |
| 16 | 100 | 6.3 x 11 | E11 | UBR107M1CE11 | 24 | 846 | 2820 | 12 | 320 |
| 16 | 220 | 6.3 x 11 | E11 | UBR227M1CE11 | 20 | 1388 | 4391 | 12 | 704 |
| 16 | 220 | 8 x 8 | F08 | UBR227M1CF08 | 13 | 1290 | 4300 | 12 | 704 |

UBR Series

+125° C, High Temperature, Low ESR

| Rated Vol. (V) | Rated Cap. (μF) | Case Size ΦD x L (mm) | Size Code | Part Number | ESR (mΩ, max/ 20°C, 100kHz) | Rated Ripple (mArms/ 125°C, 100kHz) | Rated Ripple (mArms/ 105°C, 100kHz) | DF (% max) | Leakage Current (μA/2 mins) |
|----------------|-----------------|-----------------------|-----------|--------------|-----------------------------|-------------------------------------|-------------------------------------|------------|-----------------------------|
| 16 | 270 | 8 x 11.5 | F1A | UBR277M1CF1A | 13 | 1500 | 5000 | 12 | 864 |
| 16 | 470 | 6.3 x 11 | E11 | UBR477M1CE11 | 15 | 1603 | 5070 | 12 | 1504 |
| 16 | 470 | 8 x 11.5 | F1A | UBR477M1CF1A | 18 | 1621 | 5404 | 12 | 1504 |
| 16 | 470 | 10 x 12.5 | G1B | UBR477M1CG1B | 10 | 1800 | 6000 | 12 | 1504 |
| 16 | 560 | 8 x 11 | F11 | UBR567M1CF11 | 12 | 1837 | 5809 | 12 | 1792 |
| 16 | 820 | 10 x 12.5 | G1B | UBR827M1CG1B | 12 | 2340 | 7800 | 12 | 2624 |
| 16 | 1000 | 8 x 16 | F16 | UBR108M1CF16 | 15 | 2162 | 6835 | 12 | 3200 |
| 16 | 1000 | 10 x 12.5 | G1B | UBR108M1CG1B | 15 | 2093 | 6976 | 12 | 3200 |
| 20 | 560 | 10 x 12.5 | G1B | UBR567M1DG1B | 30 | 1000 | 3350 | 12 | 2240 |
| 25 | 180 | 8 x 11.5 | F1A | UBR187M1EF1A | 35 | 825 | 2750 | 12 | 900 |
| 25 | 220 | 8 x 11.5 | F1A | UBR227M1EF1A | 40 | 600 | 2000 | 12 | 1100 |
| 25 | 270 | 8 x 11.5 | F1A | UBR277M1EF1A | 40 | 600 | 2000 | 12 | 1350 |
| 35 | 10 | 6.3 x 8 | E08 | UBR106M1VE08 | 90 | 450 | 1500 | 12 | 280 |
| 35 | 22 | 6.3 x 8 | E08 | UBR226M1VE08 | 90 | 571 | 1806 | 12 | 280 |
| 35 | 47 | 6.3 x 8 | E08 | UBR476M1VE08 | 60 | 700 | 2212 | 12 | 329 |
| 35 | 47 | 8 x 8 | F08 | UBR476M1VF08 | 90 | 360 | 1200 | 12 | 329 |
| 35 | 100 | 8 x 11.5 | F1A | UBR107M1VF1A | 70 | 540 | 1800 | 12 | 700 |
| 35 | 220 | 10 x 12.5 | G1B | UBR227M1VG1B | 55 | 735 | 2450 | 12 | 1540 |
| 63 | 10 | 6.3 x 11 | E11 | UBR106M1JE11 | 90 | 490 | 1650 | 12 | 280 |
| 100 | 10 | 6.3 x 11 | E11 | UBR106M2AE11 | 90 | 490 | 1650 | 12 | 280 |