

USR Series

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

Features

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



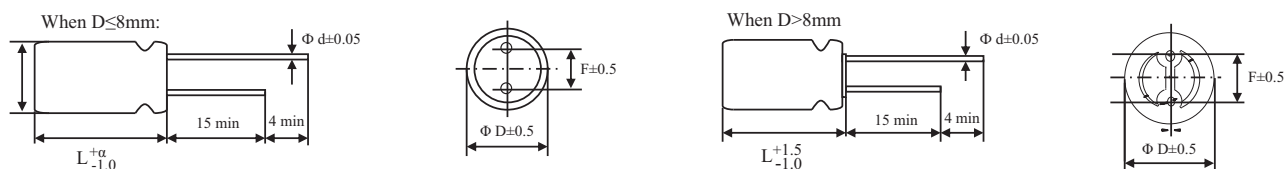
Applications

- 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 16VDC | | | | |
| Surge Voltage, SV | SV=WVx1.15VDC (Normal temperature) | | | | |
| Nominal Capacitance Range | 100 to 2700µF (120Hz, +20°C) | | | | |
| Capacitance Tolerance | ±20% (120Hz, +20°C) | | | | |
| tan δ | 0.10 (120Hz, +20°C) | | | | |
| Leakage Current, Lc | I≤0.2CV or 280 (µA) whichever is greater measured, after 2 minutes application of rated working voltage at +20°C | | | | |
| 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



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Size List

RV: Rated Voltage

| RV μF | Code | 2.5 (0E) | 4 (0G) | 6.3 (0J) | 10 (1A) | 16 (1C) |
|----------|------|---------------|---------------|---------------|---------|---------------|
| 100 | 107 | | | | | E11 |
| 180 | 187 | | | | | F1A |
| 220 | 227 | | | | | E11, F08, F1A |
| 270 | 277 | | E08 | D07 | F1A | F08, F1A |
| 330 | 337 | | | E08, F08 | | F08, G1B |
| 390 | 397 | | | F08 | F1A | |
| 470 | 477 | D09 | | F08, F1A | G1B | F1A, G1B |
| 560 | 567 | D08, D09, F08 | E08, F08, F1A | F08 | F08 | |
| 680 | 687 | | F08, F1A | G1B | G1B | G1B |
| 820 | 827 | E08, F08, F1A | F08, F1A | F08, F1A, G1B | F1A | G1B |
| 1000 | 108 | F1A | F08, G1B | | | G1B |
| 1200 | 128 | | F08 | F1A | G1B | |
| 1500 | 158 | F1A | | G1B | | |
| 2700 | 278 | G1B | G1B | | | |

(Unit: mm)

| Size Code | D07 | D08 | D09 | E08 | E11 | F08 | F1A | G1B |
|-----------|-------|-------|-------|---------|----------|-------|----------|-----------|
| ΦDxL | 5 x 7 | 5 x 8 | 5 x 9 | 6.3 x 8 | 6.3 x 11 | 8 x 8 | 8 x 11.5 | 10 x 12.5 |
| F±0.5 | 2.0 | 2.0 | 2.0 | 2.5 | 2.5 | 3.5 | 3.5 | 5.0 |
| Φd | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| α | 1.0 | | | | 1.5 | 1.0 | 1.5 | |

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 | 5 x 9 | D09 | USR477M0ED09 | 7 | 4180 | 10 | 280 |
| 2.5 | 560 | 5 x 8 | D08 | USR567M0ED08 | 7 | 4180 | 10 | 280 |
| 2.5 | 560 | 5 x 9 | D09 | USR567M0ED09 | 7 | 4180 | 10 | 280 |
| 2.5 | 560 | 8 x 8 | F08 | USR567M0EF08 | 7 | 6100 | 10 | 280 |
| 2.5 | 820 | 6.3 x 8 | E08 | USR827M0EE08 | 7 | 5600 | 10 | 410 |
| 2.5 | 820 | 8 x 8 | F08 | USR827M0EF08 | 7 | 6100 | 10 | 410 |
| 2.5 | 820 | 8 x 11.5 | F1A | USR827M0EF1A | 7 | 6100 | 10 | 410 |
| 2.5 | 1000 | 8 x 11.5 | F1A | USR108M0EF1A | 7 | 6100 | 10 | 500 |
| 2.5 | 1500 | 8 x 11.5 | F1A | USR158M0EF1A | 7 | 6100 | 10 | 750 |
| 2.5 | 2700 | 10 x 12.5 | G1B | USR278M0EG1B | 8 | 5560 | 10 | 1350 |
| 4 | 270 | 6.3 x 8 | E08 | USR277M0GE08 | 12 | 3200 | 10 | 280 |
| 4 | 560 | 6.3 x 8 | E08 | USR567M0GE08 | 7 | 5600 | 10 | 448 |
| 4 | 560 | 8 x 8 | F08 | USR567M0GF08 | 7 | 6100 | 10 | 448 |
| 4 | 560 | 8 x 11.5 | F1A | USR567M0GF1A | 7 | 6100 | 10 | 448 |
| 4 | 680 | 8 x 8 | F08 | USR687M0GF08 | 7 | 6100 | 10 | 544 |

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| 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) |
|----------------|-----------------|--------------------------|-----------|--------------|--------------------------------|--|-----------|-----------------------------|
| 4 | 680 | 8 x 11.5 | F1A | USR687M0GF1A | 7 | 6100 | 10 | 544 |
| 4 | 820 | 8 x 8 | F08 | USR827M0GF08 | 7 | 6100 | 10 | 656 |
| 4 | 820 | 8 x 11.5 | F1A | USR827M0GF1A | 7 | 6100 | 10 | 656 |
| 4 | 1000 | 8 x 8 | F08 | USR108M0GF08 | 7 | 6100 | 10 | 800 |
| 4 | 1000 | 10 x 12.5 | G1B | USR108M0GG1B | 7 | 6640 | 10 | 800 |
| 4 | 1200 | 8 x 8 | F08 | USR128M0GF08 | 7 | 6100 | 10 | 960 |
| 4 | 2700 | 10 x 12.5 | G1B | USR278M0GG1B | 8 | 6900 | 10 | 2160 |
| 6.3 | 270 | 5 x 7 | D07 | USR277M0JD07 | 11 | 3700 | 10 | 340 |
| 6.3 | 330 | 6.3 x 8 | E08 | USR337M0JE08 | 10 | 4500 | 10 | 416 |
| 6.3 | 330 | 8 x 8 | F08 | USR337M0JF08 | 8 | 5700 | 10 | 416 |
| 6.3 | 390 | 8 x 8 | F08 | USR397M0JF08 | 8 | 5700 | 10 | 491 |
| 6.3 | 470 | 8 x 8 | F08 | USR477M0JF08 | 8 | 5700 | 10 | 592 |
| 6.3 | 470 | 8 x 11.5 | F1A | USR477M0JF1A | 7 | 6100 | 10 | 592 |
| 6.3 | 560 | 8 x 8 | F08 | USR567M0JF08 | 8 | 5700 | 10 | 706 |
| 6.3 | 680 | 10 x 12.5 | G1B | USR687M0JG1B | 7 | 6640 | 10 | 857 |
| 6.3 | 820 | 8 x 8 | F08 | USR827M0JF08 | 7 | 6100 | 10 | 1033 |
| 6.3 | 820 | 8 x 11.5 | F1A | USR827M0JF1A | 7 | 6100 | 10 | 1033 |
| 6.3 | 820 | 10 x 12.5 | G1B | USR827M0JG1B | 7 | 6640 | 10 | 1033 |
| 6.3 | 1200 | 8 x 11.5 | F1A | USR128M0JF1A | 7 | 6100 | 10 | 1512 |
| 6.3 | 1500 | 10 x 12.5 | G1B | USR158M0JG1B | 10 | 5560 | 10 | 1890 |
| 10 | 270 | 8 x 11.5 | F1A | USR277M1AF1A | 11 | 5100 | 10 | 540 |
| 10 | 390 | 8 x 11.5 | F1A | USR397M1AF1A | 9 | 6100 | 10 | 780 |
| 10 | 470 | 10 x 12.5 | G1B | USR477M1AG1B | 8 | 6100 | 10 | 940 |
| 10 | 560 | 8 x 8 | F08 | USR567M1AF08 | 9 | 5600 | 10 | 1120 |
| 10 | 680 | 10 x 12.5 | G1B | USR687M1AG1B | 8 | 6100 | 10 | 1360 |
| 10 | 820 | 8 x 11.5 | F1A | USR827M1AF1A | 8 | 6100 | 10 | 1640 |
| 10 | 1200 | 10 x 12.5 | G1B | USR128M1AG1B | 8 | 6200 | 10 | 2400 |
| 16 | 100 | 6.3 x 11 | E11 | USR107M1CE11 | 24 | 2820 | 10 | 320 |
| 16 | 180 | 8 x 11.5 | F1A | USR187M1CF1A | 13 | 5000 | 10 | 576 |
| 16 | 220 | 6.3 x 11 | E11 | USR227M1CE11 | 20 | 3100 | 10 | 704 |
| 16 | 220 | 8 x 8 | F08 | USR227M1CF08 | 13 | 4300 | 10 | 704 |
| 16 | 220 | 8 x 11.5 | F1A | USR227M1CF1A | 13 | 5000 | 10 | 704 |
| 16 | 270 | 8 x 8 | F08 | USR277M1CF08 | 13 | 4300 | 10 | 864 |
| 16 | 270 | 8 x 11.5 | F1A | USR277M1CF1A | 13 | 5000 | 10 | 864 |
| 16 | 330 | 8 x 8 | F08 | USR337M1CF08 | 13 | 4300 | 10 | 1056 |
| 16 | 330 | 10 x 12.5 | G1B | USR337M1CG1B | 10 | 6100 | 10 | 1056 |
| 16 | 470 | 8 x 11.5 | F1A | USR477M1CF1A | 11 | 5100 | 10 | 1504 |
| 16 | 470 | 10 x 12.5 | G1B | USR477M1CG1B | 10 | 6100 | 10 | 1504 |
| 16 | 680 | 10 x 12.5 | G1B | USR687M1CG1B | 10 | 6100 | 10 | 2176 |
| 16 | 820 | 10 x 12.5 | G1B | USR827M1CG1B | 10 | 6100 | 10 | 2624 |
| 16 | 1000 | 10 x 12.5 | G1B | USR108M1CG1B | 10 | 6100 | 10 | 3200 |

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