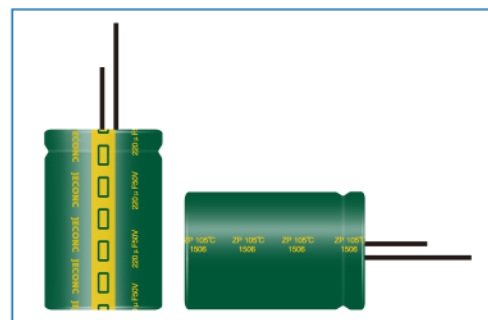


# ZP 系列 SERIES

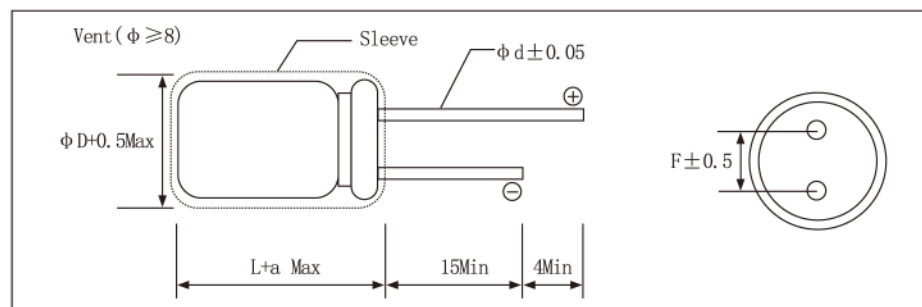
- 5000-8000h at 105°C
- Low Impedance ,High Current
- Switching Power Supply



## ◆ SPECIFICATION

| Items                                        | Characteristics                                                                                                                                                                                  |             |                                       |         |       |                                                                                                                                                     |        |          |                  |       |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------|---------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------|------------------|-------|
| Operating Temperature Range(℃)               | - 40 ~ +105° C   -25 ~ +105° C (350~450v)                                                                                                                                                        |             |                                       |         |       |                                                                                                                                                     |        |          |                  |       |
| Voltage range (V)                            | 6. 3~450V                                                                                                                                                                                        |             |                                       |         |       |                                                                                                                                                     |        |          |                  |       |
| Capacitance Range (μF)                       | 0. 47~18000μF                                                                                                                                                                                    |             |                                       |         |       |                                                                                                                                                     |        |          |                  |       |
| Capacitance Tolerance                        | ±20% (at20℃, 120Hz)                                                                                                                                                                              |             |                                       |         |       |                                                                                                                                                     |        |          |                  |       |
| leakage current (μA)                         | After 2 minute at 20℃ application of rated voltage,<br>leakage current is not more than 0.01CV or 3μA, whichever is greater (wv: 6.3~100v)<br>C:Nominal Capacitance (μF)    V :Rated Voltage (V) |             |                                       |         |       | After 5 minute at 20℃ application of rated voltage , leakage current is not more than:<br><br>CV ≤1000; I≤0.03CV+15μA<br><br>CV>1000; I≤0.02CV+25μA |        |          |                  |       |
| Dissipation Factor(Tan δ)<br>(at 20℃, 120Hz) | WV (V)                                                                                                                                                                                           | 6. 3        | 10                                    | 16      | 25    | 35                                                                                                                                                  | 50     | 63-100   | 160-400          | 450   |
|                                              | Tan δ (max)                                                                                                                                                                                      | 0. 2        | 0. 18                                 | 0. 16   | 0. 14 | 0. 12                                                                                                                                               | 0. 10  | 0. 08    | 0. 15            | 0. 20 |
| LowTemperature Characteristics               | Rated Voltage(v)                                                                                                                                                                                 |             |                                       | 6. 3-10 | 16    | 25-35                                                                                                                                               | 50-100 | 160-250  | 350-400          | 450   |
|                                              | Impedance<br>Rato                                                                                                                                                                                | Z-25℃/Z+20℃ |                                       | -       | -     | -                                                                                                                                                   | -      | -        | 6                | 10    |
|                                              |                                                                                                                                                                                                  | Z-40℃/Z+20℃ |                                       | 4       | 3     | 3                                                                                                                                                   | 3      | 6        | -                | -     |
|                                              | (at 120Hz)                                                                                                                                                                                       |             |                                       |         |       |                                                                                                                                                     |        |          |                  |       |
| Load Life                                    | The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DCvoltage with the rated rippled current is applied for 5000-8000 hours at 105℃       |             |                                       |         |       |                                                                                                                                                     |        |          |                  |       |
|                                              | Capacitance change                                                                                                                                                                               |             | Within ± 25%initial value             |         |       |                                                                                                                                                     |        | Case Dia | Life time(hours) |       |
|                                              | D. F. (Tan δ)                                                                                                                                                                                    |             | Not more than 200% of specified value |         |       |                                                                                                                                                     |        | ΦD≤6. 3  | 5000             |       |
|                                              | leakage current                                                                                                                                                                                  |             | Not more than specified value         |         |       |                                                                                                                                                     |        | ΦD=8、 10 | 6000             |       |
|                                              |                                                                                                                                                                                                  |             |                                       |         |       |                                                                                                                                                     |        | ΦD≥13    | 8000             |       |
| Shelf Life                                   | The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000hours at 105℃without voltage applied .                                      |             |                                       |         |       |                                                                                                                                                     |        |          |                  |       |
|                                              | Capacitance change                                                                                                                                                                               |             | Within± 25%initial value              |         |       |                                                                                                                                                     |        |          |                  |       |
|                                              | D. F. (Tan δ)                                                                                                                                                                                    |             | Not more than 200% of specified value |         |       |                                                                                                                                                     |        |          |                  |       |
|                                              | leakage current                                                                                                                                                                                  |             | Not more than 200% of specified value |         |       |                                                                                                                                                     |        |          |                  |       |
|                                              |                                                                                                                                                                                                  |             |                                       |         |       |                                                                                                                                                     |        |          |                  |       |

## ◆ DIMENSIONS(mm)



|    |     |     |     |     |     |     |     |
|----|-----|-----|-----|-----|-----|-----|-----|
| ΦD | 5   | 6.3 | 8   | 10  | 13  | 16  | 18  |
| F  | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 |
| Φd | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.8 | 0.8 |
| a  | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 |

## ◆ Temperature Coefficient

|                  |      |      |      |
|------------------|------|------|------|
| Temperature (°C) | +70  | +85  | +105 |
| Coefficient      | 1.96 | 1.68 | 1.0  |

# ZP系列

## SERIES

### ◆ Frequency Coefficient(6.3V~100V)

| Frequency<br>Cap (μF) | 120Hz | 1KHz | 10KHz | 100KHz |
|-----------------------|-------|------|-------|--------|
| ≤10                   | 0.30  | 0.68 | 0.87  | 1.00   |
| 12~180                | 0.40  | 0.75 | 0.90  | 1.00   |
| 220~560               | 0.50  | 0.83 | 0.93  | 1.00   |
| 680~1800              | 0.60  | 0.86 | 0.95  | 1.00   |
| 2200~3900             | 0.75  | 0.90 | 0.97  | 1.00   |
| 4700~18000            | 0.85  | 0.95 | 0.98  | 1.00   |

### ◆ Frequency Coefficient(160V~450V)

| Frequency<br>Cap (μF) | 50Hz | 120Hz | 300Hz | 1kHz | 10KHz | 100KHz |
|-----------------------|------|-------|-------|------|-------|--------|
| 0.1~8.2               | 0.65 | 1.00  | 1.35  | 1.75 | 2.30  | 2.50   |
| 10~82                 | 0.75 | 1.00  | 1.25  | 1.50 | 1.75  | 1.80   |
| 100~1000              | 0.80 | 1.00  | 1.15  | 1.30 | 1.40  | 1.50   |

# ZP 系列 SERIES

## ◆ STANDARD RATINGS

| UR (Surge Voltage)<br>Code | Rated Capacitance | Max ESR<br>20°C100kHz | Rated Ripple Current<br>105°C100kHz | Size<br>ΦD×L |
|----------------------------|-------------------|-----------------------|-------------------------------------|--------------|
| (V)                        | (μF)              | (Ω)                   | (mA rms)                            | (mm)         |
| 6.3<br>(8)<br>0J           | 150               | 0.58                  | 210                                 | 5×11         |
|                            | 330               | 0.22                  | 340                                 | 6.3×12       |
|                            | 470               | 0.17                  | 460                                 | 6.3×15       |
|                            | 680               | 0.13                  | 640                                 | 8×12         |
|                            | 820               | 0.080                 | 865                                 | 10×12.5      |
|                            | 1000              | 0.087                 | 840                                 | 8×16         |
|                            | 1200              | 0.069                 | 1050                                | 8×20         |
|                            |                   | 0.060                 | 1210                                | 10×16        |
|                            | 1500              | 0.046                 | 1400                                | 10×20        |
|                            | 2200              | 0.042                 | 1650                                | 10×25        |
|                            | 2700              | 0.031                 | 1910                                | 10×30        |
|                            | 3300              | 0.035                 | 1900                                | 13×20        |
|                            | 3900              | 0.027                 | 2230                                | 13×25        |
|                            | 4700              | 0.024                 | 2650                                | 13×30        |
|                            | 5600              | 0.020                 | 2880                                | 13×35        |
|                            |                   | 0.027                 | 2530                                | 16×20        |
|                            | 6800              | 0.017                 | 3350                                | 13×40        |
|                            |                   | 0.021                 | 2930                                | 16×25        |
|                            |                   | 0.026                 | 2860                                | 18×20        |
|                            | 8200              | 0.017                 | 3450                                | 16×31.5      |
|                            | 10000             | 0.015                 | 3610                                | 16×35.5      |
|                            |                   | 0.019                 | 3140                                | 18×25        |
|                            | 12000             | 0.013                 | 4080                                | 16×40        |
|                            |                   | 0.015                 | 4170                                | 18×31.5      |
|                            | 15000             | 0.014                 | 4220                                | 18×35.5      |
|                            | 18000             | 0.012                 | 4280                                | 18×40        |
| 10<br>(13)<br>1A           | 100               | 0.58                  | 210                                 | 5×11         |
|                            | 220               | 0.22                  | 340                                 | 6.3×12       |
|                            | 330               | 0.17                  | 460                                 | 6.3×15       |
|                            | 470               | 0.13                  | 640                                 | 8×12         |
|                            | 680               | 0.087                 | 840                                 | 8×16         |
|                            |                   | 0.080                 | 865                                 | 10×12.5      |
|                            | 1000              | 0.069                 | 1050                                | 8×20         |
|                            |                   | 0.060                 | 1210                                | 10×16        |
|                            | 1200              | 0.046                 | 1400                                | 10×20        |
|                            | 1500              | 0.042                 | 1650                                | 10×25        |
|                            | 2200              | 0.031                 | 1910                                | 10×30        |
|                            |                   | 0.035                 | 1900                                | 13×20        |
|                            | 3300              | 0.027                 | 2230                                | 13×25        |
|                            | 3900              | 0.024                 | 2650                                | 13×30        |
|                            |                   | 0.027                 | 2880                                | 16×20        |
|                            | 4700              | 0.020                 | 2530                                | 13×35        |
|                            | 5600              | 0.017                 | 3350                                | 13×40        |
|                            |                   | 0.021                 | 2930                                | 16×25        |
|                            |                   | 0.026                 | 2860                                | 18×20        |
|                            | 6800              | 0.017                 | 3450                                | 16×31.5      |
|                            |                   | 0.019                 | 3140                                | 18×25        |
|                            | 8200              | 0.015                 | 3610                                | 16×35.5      |
|                            |                   | 0.015                 | 4170                                | 18×31.5      |
|                            | 10000             | 0.013                 | 4080                                | 16×40        |
|                            |                   | 0.014                 | 4220                                | 18×35.5      |
|                            | 12000             | 0.012                 | 4280                                | 18×40        |

# ZP 系列 SERIES

## ◆ STANDARD RATINGS

| UR (Surge Voltage)<br>Code | Rated Capacitance | Max ESR<br>20°C100kHz | Rated Ripple Current<br>105°C100kHz | Size<br>ΦD×L |
|----------------------------|-------------------|-----------------------|-------------------------------------|--------------|
| (V)                        | (μF)              | (Ω)                   | (mA rms)                            | (mm)         |
| 16<br>(20)<br>1C           | 56                | 0.58                  | 210                                 | 5×11         |
|                            | 120               | 0.22                  | 340                                 | 6.3×12       |
|                            | 220               | 0.17                  | 460                                 | 6.3×15       |
|                            | 330               | 0.13                  | 640                                 | 8×12         |
|                            | 470               | 0.080                 | 840                                 | 8×16         |
|                            |                   | 0.087                 | 865                                 | 10×12.5      |
|                            | 560               | 0.069                 | 1050                                | 8×20         |
|                            | 680               | 0.060                 | 1210                                | 10×16        |
|                            | 1000              | 0.046                 | 1400                                | 10×20        |
|                            | 1200              | 0.042                 | 1650                                | 10×25        |
|                            | 1500              | 0.031                 | 1910                                | 10×30        |
|                            |                   | 0.035                 | 1900                                | 13×20        |
|                            | 2200              | 0.027                 | 2230                                | 13×25        |
|                            | 2700              | 0.024                 | 2650                                | 13×30        |
|                            |                   | 0.027                 | 2530                                | 16×20        |
|                            | 3300              | 0.020                 | 2880                                | 13×35        |
|                            | 3900              | 0.017                 | 3350                                | 13×40        |
|                            |                   | 0.021                 | 2930                                | 16×25        |
|                            |                   | 0.026                 | 2860                                | 18×20        |
|                            | 4700              | 0.017                 | 3450                                | 16×31.5      |
|                            |                   | 0.019                 | 3140                                | 18×25        |
|                            | 5600              | 0.015                 | 3610                                | 16×35.5      |
|                            |                   | 0.015                 | 4170                                | 18×31.5      |
|                            | 6800              | 0.013                 | 4080                                | 16×40        |
|                            | 8200              | 0.014                 | 4220                                | 18×35.5      |
|                            | 10000             | 0.012                 | 4280                                | 18×40        |
| 25<br>(32)<br>1E           | 47                | 0.06                  | 210                                 | 5×11         |
|                            | 100               | 0.22                  | 340                                 | 6.3×12       |
|                            | 150               | 0.17                  | 460                                 | 6.3×15       |
|                            | 220               | 0.13                  | 640                                 | 8×12         |
|                            | 330               | 0.087                 | 840                                 | 8×16         |
|                            |                   | 0.080                 | 865                                 | 10×12.5      |
|                            | 470               | 0.069                 | 1050                                | 8×20         |
|                            |                   | 0.060                 | 1210                                | 10×16        |
|                            | 680               | 0.046                 | 1400                                | 10×20        |
|                            | 820               | 0.042                 | 1650                                | 10×25        |
|                            | 1000              | 0.031                 | 1910                                | 10×30        |
|                            |                   | 0.035                 | 1900                                | 13×20        |
|                            | 1500              | 0.027                 | 2230                                | 13×25        |
|                            | 1800              | 0.024                 | 2650                                | 13×30        |
|                            |                   | 0.027                 | 2530                                | 16×20        |
|                            | 2200              | 0.020                 | 2880                                | 13×35        |
|                            |                   | 0.026                 | 2860                                | 18×20        |
|                            | 2700              | 0.017                 | 3350                                | 13×40        |
|                            |                   | 0.021                 | 2930                                | 16×25        |
|                            | 3300              | 0.017                 | 3450                                | 16×31.5      |
|                            |                   | 0.019                 | 3140                                | 18×25        |
|                            | 3900              | 0.015                 | 3610                                | 16×35.5      |
|                            |                   | 0.015                 | 4170                                | 18×31.5      |
|                            | 4700              | 0.013                 | 4080                                | 16×40        |
|                            |                   | 0.014                 | 4220                                | 18×35.5      |
|                            | 5600              | 0.012                 | 4280                                | 18×40        |

# ZP 系列 SERIES

## ◆ STANDARD RATINGS

| UR (Surge Voltage)<br>Code | Rated Capacitance | Max ESR<br>20℃100kHz | Rated Ripple Current<br>105℃100kHz | Size<br>ΦD×L |
|----------------------------|-------------------|----------------------|------------------------------------|--------------|
| (V)                        | (μF)              | (Ω)                  | (mA rms)                           | (mm)         |
| 35<br>(44)<br>1V           | 33                | 0.58                 | 210                                | 5×11         |
|                            | 56                | 0.22                 | 340                                | 6.3×12       |
|                            | 100               | 0.17                 | 460                                | 6.3×15       |
|                            | 150               | 0.13                 | 640                                | 8×12         |
|                            | 220               | 0.087                | 840                                | 8×16         |
|                            |                   | 0.080                | 865                                | 10×12.5      |
|                            | 270               | 0.069                | 1050                               | 8×20         |
|                            | 330               | 0.060                | 1210                               | 10×16        |
|                            | 470               | 0.046                | 1400                               | 10×20        |
|                            | 560               | 0.042                | 1650                               | 10×25        |
|                            | 680               | 0.031                | 1910                               | 10×30        |
|                            |                   | 0.035                | 1900                               | 13×20        |
|                            | 1000              | 0.027                | 2230                               | 13×25        |
|                            | 1200              | 0.024                | 2650                               | 13×30        |
|                            |                   | 0.027                | 2530                               | 16×20        |
|                            | 1500              | 0.020                | 2880                               | 13×35        |
|                            | 1800              | 0.017                | 3350                               | 13×40        |
|                            |                   | 0.021                | 2930                               | 16×25        |
|                            |                   | 0.026                | 2860                               | 18×20        |
|                            | 2200              | 0.017                | 3450                               | 16×31.5      |
|                            |                   | 0.019                | 3140                               | 18×25        |
|                            | 2700              | 0.015                | 3610                               | 16×35.5      |
|                            |                   | 0.015                | 4170                               | 18×31.5      |
|                            | 3300              | 0.013                | 4080                               | 16×40        |
|                            |                   | 0.014                | 4220                               | 18×35.5      |
|                            | 3900              | 0.012                | 4280                               | 18×40        |
| 50<br>(63)<br>1H           | 0.47              | 5.50                 | 17                                 | 5×11         |
|                            | 1                 | 4                    | 30                                 | 5×11         |
|                            | 2.2               | 2.5                  | 43                                 | 5×11         |
|                            | 3.3               | 2.2                  | 53                                 | 5×11         |
|                            | 4.7               | 1.9                  | 88                                 | 5×11         |
|                            | 10                | 1.5                  | 100                                | 5×11         |
|                            | 22                | 0.7                  | 180                                | 5×11         |
|                            | 56                | 0.3                  | 295                                | 6.3×12       |
|                            | 100               | 0.17                 | 555                                | 8×12         |
|                            | 120               | 0.120                | 730                                | 8×16         |
|                            | 150               | 0.120                | 760                                | 10×12.5      |
|                            | 180               | 0.091                | 910                                | 8×20         |
|                            | 220               | 0.084                | 1050                               | 10×16        |
|                            | 270               | 0.060                | 1220                               | 10×20        |
|                            | 330               | 0.055                | 1440                               | 10×25        |
|                            | 470               | 0.043                | 1690                               | 10×30        |
|                            |                   | 0.045                | 1660                               | 13×20        |
|                            | 560               | 0.034                | 1950                               | 13×25        |
|                            | 680               | 0.030                | 2310                               | 13×30        |
|                            | 820               | 0.025                | 2510                               | 13×35        |
|                            |                   | 0.034                | 2210                               | 16×20        |
|                            | 1000              | 0.021                | 2920                               | 13×40        |
|                            |                   | 0.025                | 2550                               | 16×25        |
|                            |                   | 0.036                | 2490                               | 18×20        |
|                            | 1200              | 0.022                | 3010                               | 16×31.5      |
|                            |                   | 0.026                | 2740                               | 18×25        |
|                            | 1500              | 0.019                | 3150                               | 16×35.5      |
|                            | 1800              | 0.016                | 3710                               | 16×40        |
|                            |                   | 0.021                | 3635                               | 18×31.5      |
|                            | 2200              | 0.017                | 3680                               | 18×35.5      |
|                            | 2700              | 0.014                | 3800                               | 18×40        |

# ZP 系列 SERIES

## ◆ STANDARD RATINGS

| UR (Surge Voltage)<br>Code | Rated Capacitance | Max ESR<br>20°C100kHz | Rated Ripple Current<br>105°C100kHz | Size<br>ΦD×L |
|----------------------------|-------------------|-----------------------|-------------------------------------|--------------|
| (V)                        | (μF)              | (Ω)                   | (mA rms)                            | (mm)         |
| 63<br>(79)<br>1J           | 15                | 0.880                 | 165                                 | 5×11         |
|                            | 33                | 0.350                 | 265                                 | 6.3×12       |
|                            | 56                | 0.220                 | 500                                 | 8×12         |
|                            | 82                | 0.160                 | 665                                 | 8×16         |
|                            |                   | 0.110                 | 690                                 | 10×12.5      |
|                            | 120               | 0.120                 | 820                                 | 8×20         |
|                            |                   | 0.076                 | 950                                 | 10×16        |
|                            | 180               | 0.056                 | 1150                                | 10×20        |
|                            |                   | 0.072                 | 1150                                | 13×16        |
|                            | 220               | 0.046                 | 1350                                | 10×25        |
|                            | 270               | 0.041                 | 1500                                | 13×20        |
|                            | 390               | 0.031                 | 1900                                | 13×25        |
|                            | 470               | 0.028                 | 2300                                | 13×30        |
|                            |                   | 0.032                 | 2000                                | 16×20        |
|                            | 560               | 0.024                 | 2500                                | 13×35        |
|                            | 680               | 0.021                 | 2800                                | 13×40        |
|                            |                   | 0.025                 | 2600                                | 16×25        |
|                            |                   | 0.030                 | 2500                                | 18×20        |
|                            | 820               | 0.021                 | 2850                                | 16×31.5      |
|                            |                   | 0.024                 | 2800                                | 18×25        |
| 100<br>(125)<br>2A         | 1000              | 0.019                 | 2900                                | 16×35.5      |
|                            | 1200              | 0.018                 | 3400                                | 16×40        |
|                            |                   | 0.020                 | 3300                                | 18×31.5      |
|                            | 1500              | 0.018                 | 3400                                | 18×35.5      |
|                            | 1800              | 0.017                 | 3500                                | 18×40        |
|                            | 6.8               | 1.400                 | 125                                 | 5×11         |
|                            | 15                | 0.570                 | 205                                 | 6.3×12       |
|                            | 27                | 0.360                 | 355                                 | 8×12         |
|                            | 39                | 0.250                 | 450                                 | 8×16         |
|                            | 47                | 0.170                 | 480                                 | 10×12.5      |
|                            | 56                | 0.190                 | 565                                 | 8×20         |
|                            | 68                | 0.110                 | 600                                 | 10×16        |
|                            | 82                | 0.084                 | 680                                 | 10×20        |
|                            | 100               | 0.110                 | 750                                 | 13×16        |
|                            | 120               | 0.069                 | 900                                 | 10×25        |
|                            | 150               | 0.062                 | 1100                                | 13×20        |
|                            | 220               | 0.047                 | 1250                                | 13×25        |
|                            |                   | 0.048                 | 1350                                | 16×20        |
|                            | 270               | 0.042                 | 1500                                | 13×30        |
|                            | 330               | 0.036                 | 1650                                | 13×35        |
|                            |                   | 0.038                 | 1700                                | 16×25        |
|                            |                   | 0.045                 | 1500                                | 18×20        |
|                            | 390               | 0.032                 | 1800                                | 13×40        |
|                            | 470               | 0.032                 | 1850                                | 16×31.5      |
|                            |                   | 0.036                 | 1750                                | 18×25        |
|                            | 560               | 0.029                 | 2000                                | 16×35.5      |
|                            |                   | 0.030                 | 1900                                | 18×31.5      |
|                            | 680               | 0.027                 | 2200                                | 16×40        |
|                            |                   | 0.027                 | 2200                                | 18×35.5      |
|                            | 820               | 0.026                 | 2700                                | 18×40        |

# ZP 系列 SERIES

## ◆ STANDARD RATINGS

| UR (Surge Voltage) Code | Rated Capacitance | Rated Ripple Current<br>105°C 120Hz | Size<br>ΦD×L |
|-------------------------|-------------------|-------------------------------------|--------------|
| (V)                     | (μF)              | (mA rms)                            | (mm)         |
| 160<br>(200)<br>2C      | 10                | 125                                 | 10×16        |
|                         | 22                | 200                                 | 10×20        |
|                         | 33                | 250                                 | 10×20        |
|                         | 47                | 300                                 | 10×20        |
|                         | 68                | 470                                 | 13×20        |
|                         | 82                | 510                                 | 13×20        |
|                         | 100               | 620                                 | 13×25        |
|                         | 150               | 770                                 | 16×25        |
|                         | 220               | 1020                                | 18×25        |
|                         | 330               | 1390                                | 18×40        |
| 200<br>(250)<br>2D      | 10                | 125                                 | 10×16        |
|                         | 22                | 200                                 | 10×20        |
|                         | 33                | 260                                 | 10×20        |
|                         | 47                | 390                                 | 13×20        |
|                         | 68                | 470                                 | 13×20        |
|                         | 82                | 550                                 | 16×20        |
|                         | 100               | 630                                 | 16×20        |
|                         | 150               | 840                                 | 16×25        |
|                         | 220               | 1050                                | 18×30        |
|                         | 330               | 1430                                | 18×40        |
| 250<br>(300)<br>2E      | 10                | 140                                 | 10×20        |
|                         | 22                | 200                                 | 10×20        |
|                         | 33                | 320                                 | 13×20        |
|                         | 47                | 390                                 | 13×20        |
|                         | 68                | 520                                 | 16×20        |
|                         | 82                | 550                                 | 16×20        |
|                         | 100               | 680                                 | 16×25        |
|                         | 150               | 860                                 | 18×25        |
|                         | 220               | 1130                                | 18×40        |
|                         | 330               | 1430                                | 18×40        |
| 350<br>(400)<br>2V      | 6.8               | 110                                 | 10×16        |
|                         | 10                | 140                                 | 10×20        |
|                         | 22                | 260                                 | 13×20        |
|                         | 33                | 360                                 | 16×20        |
|                         | 47                | 430                                 | 18×20        |
|                         | 68                | 560                                 | 18×25        |
|                         | 82                | 610                                 | 18×32        |
|                         | 100               | 700                                 | 18×32        |
|                         | 150               | 960                                 | 18×40        |
|                         | 220               | 1130                                | 18×40        |

| UR (Surge Voltage) Code | Rated Capacitance | Rated Ripple Current<br>105°C 120Hz | Size<br>ΦD×L |
|-------------------------|-------------------|-------------------------------------|--------------|
| (V)                     | (μF)              | (mA rms)                            | (mm)         |
| 400<br>(450)<br>2G      | 2.2               | 35                                  | 10×12.5      |
|                         | 3.3               | 50                                  | 10×12.5      |
|                         | 4.7               | 75                                  | 10×16        |
|                         | 6.8               | 110                                 | 10×16        |
|                         | 10                | 140                                 | 10×20        |
|                         | 15                | 220                                 | 13×20        |
|                         | 22                | 260                                 | 16×20        |
|                         | 33                | 360                                 | 16×20        |
|                         | 47                | 470                                 | 16×25        |
|                         |                   | 450                                 | 18×20        |
|                         | 68                | 585                                 | 18×25        |
|                         | 82                | 610                                 | 18×25        |
|                         | 100               | 765                                 | 18×35.5      |
|                         | 120               | 865                                 | 18×35.5      |
|                         | 150               | 985                                 | 18×40        |
| 450<br>(500)<br>2W      | 2.2               | 35                                  | 10×12.5      |
|                         | 3.3               | 50                                  | 10×12.5      |
|                         | 4.7               | 75                                  | 10×16        |
|                         | 6.8               | 110                                 | 10×20        |
|                         | 10                | 180                                 | 13×20        |
|                         | 15                | 240                                 | 13×25        |
|                         | 22                | 290                                 | 16×20        |
|                         | 33                | 390                                 | 16×25        |
|                         |                   | 380                                 | 18×20        |
|                         | 47                | 480                                 | 18×25        |
|                         | 68                | 630                                 | 18×31.5      |
|                         | 82                | 715                                 | 18×35.5      |
|                         | 100               | 800                                 | 18×40        |
|                         | 150               | 985                                 | 18×40        |
|                         | 220               | 1130                                | 18×40        |

Customer products are available on request