

## Features

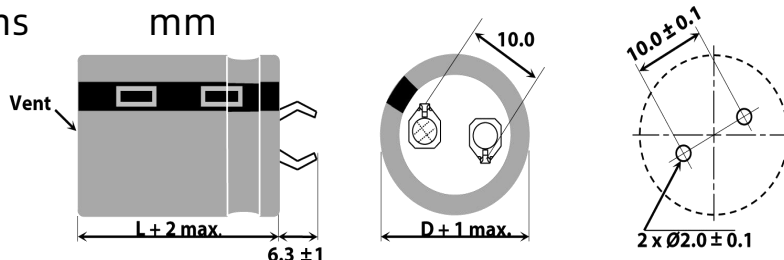
- ◎ 2000h at +85°C, 焊针型, Snap-in Type
- ◎ 宽电压, 大容量。Wide Voltage, Large capacitance



## Specifications

| Item                                   | Characteristics   |  |      |       |      |           |                |         |         |
|--|---|--|------|-------|------|-----------|----------------|---------|---------|
| 使用温度范围 Operating Temperature Range(°C) | -40 ~ +85   |  |      |       |      | -25 ~ +85 |                |         |         |
| 额定电压 Rated Voltage (V)                 | 10 ~ 400  |  |      |       |      | 450 ~ 500 |                |         |         |
| 标称容量 Nominal capacitance (µF)          | 100 ~ 100,000   |  |      |       |      |           |                |         |         |
| 容量偏差 Capacitance Tolerance(20°C,120Hz) | ±20%  |  |      |       |      |           |                |         |         |
| 漏电流 Leakage current (µA)               | ≤0.01CV or 1.5mA, which is smaller. (at 20°C ,after 5 minutes)  |  |      |       |      |           |                |         |         |
| 损耗角正切值 Dissipation Factor(20°C,120Hz)  | WV(V)<br>Cap(µF)  | 10 ~16   | 25   | 35~50 | 63   | 80 ~100   | WV(V)<br>φ(mm) | 160~200 | 250~500 |
|  | ≤2700   | -  | -    | 0.2   | 0.15 | 0.15      | 22 ~ 30        | 0.1     | 0.15    |
|  | 3300~4700   | -  | 0.35 | 0.25  | 0.2  | 0.15      |                |         |         |
|  | 5600~6800   | 0.4  | 0.35 | 0.3   | 0.2  | 0.2       | 35             | 0.12    | 0.15    |
| ≥8200                                  | 0.4   | 0.35   | 0.35 | 0.25  | -    |           |                |         |         |
| 耐久性 Load Life(+85°C)                   | 时间 time   | 2000小时2000 hours   |      |       |      |           |                |         |         |
|  | 容量变化率Capacitance change   | ±20%初始测量值以内 Within±20% of the initial value                  |      |       |      |           |                |         |         |
|  | 漏电流Leakage current  | ≤初始规定值 Not more than the Initial specified value             |      |       |      |           |                |         |         |
|  | 损耗角正切值Dissipation factor  | ≤200%初始规定值 Not more than 200% of the Initial specified value |      |       |      |           |                |         |         |
| 高温贮存 Shelf Life(+85°C)                 | 时间 time   | 500小时500 hours   |      |       |      |           |                |         |         |
|  | 容量变化率Capacitance change   | ±20%初始测量值以内 Within±20% of the initial value                  |      |       |      |           |                |         |         |
|  | 漏电流Leakage current  | ≤初始规定值 Not more than the Initial specified value             |      |       |      |           |                |         |         |
|  | 损耗角正切值Dissipation factor  | ≤200%初始规定值 Not more than 200% of the Initial specified value |      |       |      |           |                |         |         |
|  | 试验后: 施加标称电压30分钟, 于24至48小时之间测试。<br>After test: UR to be applied for 30 minutes, 24 to 48 hours before measurement. |  |      |       |      |           |                |         |         |

## Dimensions



PC Board Mounting Holes

## Frequency Coefficient

| Frequency(Hz)<br>Voltage | 50,60 | 120  | 300  | 1k   | ≥10k |
|--------------------------|-------|------|------|------|------|
| 10 ~ 50                  | 0.88  | 1.00 | 1.04 | 1.15 | 1.15 |
| 63 ~ 100                 | 0.80  | 1.00 | 1.17 | 1.32 | 1.45 |
| 160 ~ 500                | 0.80  | 1.00 | 1.16 | 1.30 | 1.42 |

## Temperature Coefficient

| Frequency(Hz)<br>Voltage | +40  | +60  | +70  | +85  |
|--------------------------|------|------|------|------|
| < 160                    | 2.10 | 1.80 | 1.50 | 1.00 |
| ≥160                     | 1.70 | 1.50 | 1.30 | 1.00 |

## Standard Ratings

| WV<br>(SV) | Cap.  | Max<br>ESR | Typ<br>ESR | Ripple<br>Current | Size<br>φDxL |
|------------|-------|------------|------------|-------------------|--------------|
|            |       | 20°C 120Hz |            | 85°C<br>120Hz     |              |
| V          | μF    | mΩ         | mΩ         | Arms              | mm           |
| 10(13)     | 15000 | 36         | 29         | 3.1               | 22x30        |
|            | 22000 | 25         | 20         | 4.1               | 22x40        |
|            | 33000 | 17         | 13         | 4.6               | 25x40        |
|            | 47000 | 12         | 9.1        | 6                 | 25x50        |
|            | 56000 | 9.5        | 7.6        | 6.8               | 30x50        |
|            | 68000 | 7.9        | 6.3        | 7.7               | 35x40        |
|            | 82000 | 6.5        | 5.2        | 8.7               | 35x50        |
| 16(20)     | 8200  | 65         | 52         | 2.2               | 22x30        |
|            | 10000 | 54         | 43         | 2.6               | 22x40        |
|            | 15000 | 36         | 29         | 3.3               | 25x50        |
|            | 22000 | 25         | 20         | 4.2               | 30x40        |
|            | 33000 | 17         | 13         | 5.6               | 30x50        |
|            | 47000 | 12         | 9.1        | 7                 | 30x50        |
|            | 56000 | 9.5        | 7.6        | 8                 | 35x50        |
|            | 68000 | 8          | 5.4        | 9.2               | 35x50        |
|            | 82000 | 5.5        | 3.6        | 10.5              | 35x70        |
| 100000     | 3     | 2.1        | 11.7       | 35x80             |              |
| 25(32)     | 8200  | 57         | 46         | 2.6               | 22x40        |
|            | 10000 | 47         | 38         | 2.9               | 22x40        |
|            | 15000 | 31         | 25         | 3.7               | 25x40        |
|            | 22000 | 22         | 17         | 5                 | 30x40        |
|            | 33000 | 15         | 12         | 6.5               | 35x40        |
|            | 47000 | 10         | 8          | 8.8               | 35x50        |
|            | 56000 | 5          | 4          | 9.5               | 35x60        |
| 35(44)     | 2200  | 100        | 95         | 0.9               | 22x30        |
|            | 3300  | 100        | 81         | 1.8               | 22x40        |
|            | 4700  | 71         | 57         | 2.2               | 25x30        |
|            | 5600  | 72         | 57         | 2.3               | 25x30        |
|            | 6800  | 59         | 47         | 2.6               | 25x40        |
|            | 8200  | 57         | 46         | 2.8               | 25x40        |
|            | 10000 | 47         | 38         | 3.2               | 30x40        |
|            | 12000 | 39         | 31         | 3.5               | 30x40        |
|            | 15000 | 31         | 25         | 4.1               | 30x50        |
|            | 18000 | 26         | 21         | 4.6               | 30x50        |
|            | 22000 | 22         | 17         | 5.3               | 35x50        |
|            | 33000 | 19         | 13         | 6.1               | 35x60        |
|            | 47000 | 15         | 9          | 7.8               | 35x80        |
| 50(63)     | 3300  | 100        | 81         | 2                 | 25x40        |
|            | 4700  | 71         | 57         | 2.4               | 25x40        |
|            | 5600  | 72         | 57         | 2.5               | 25x50        |
|            | 6800  | 59         | 47         | 2.8               | 30x50        |
|            | 8200  | 57         | 46         | 3.2               | 30x50        |
|            | 10000 | 47         | 38         | 3.4               | 30x50        |

| WV<br>(SV) | Cap.     | Max<br>ESR | Typ<br>ESR | Ripple<br>Current | Size<br>φDxL |       |
|------------|----------|------------|------------|-------------------|--------------|-------|
|            |          | 20°C 120Hz |            | 85°C<br>120Hz     |              |       |
| V          | μF       | mΩ         | mΩ         | Arms              | mm           |       |
| 50(63)     | 12000    | 39         | 31         | 3.8               | 30x50        |       |
|            | 15000    | 31         | 25         | 4.5               | 30x50        |       |
|            | 18000    | 25         | 19         | 5.6               | 35x50        |       |
|            | 22000    | 19         | 13         | 6.8               | 35x50        |       |
|            | 2200     | 91         | 73         | 2                 | 22x30        |       |
| 63(79)     | 3300     | 81         | 65         | 2.3               | 22x40        |       |
|            | 4700     | 56         | 45         | 3                 | 25x40        |       |
|            | 5600     | 48         | 38         | 3.1               | 25x50        |       |
|            | 6800     | 40         | 32         | 3.6               | 25x50        |       |
|            | 8200     | 41         | 33         | 3.8               | 30x40        |       |
|            | 10000    | 34         | 27         | 4.3               | 35x50        |       |
|            | 12000    | 28         | 23         | 4.8               | 35x60        |       |
|            | 15000    | 22         | 18         | 5.5               | 35x60        |       |
|            | 18000    | 16         | 14         | 6.2               | 35x80        |       |
|            | 22000    | 12         | 10         | 7.3               | 35x80        |       |
| 80(100)    | 1500     | 133        | 107        | 1.7               | 22x40        |       |
|            | 2200     | 91         | 73         | 2.2               | 25x40        |       |
|            | 3300     | 61         | 49         | 2.8               | 25x50        |       |
|            | 4700     | 43         | 34         | 3.6               | 30x50        |       |
|            | 5600     | 48         | 38         | 3.8               | 30x50        |       |
|            | 6800     | 40         | 32         | 4.1               | 30x60        |       |
|            | 8200     | 41         | 33         | 4.7               | 35x50        |       |
|            | 10000    | 34         | 27         | 5.2               | 35x50        |       |
|            | 12000    | 28         | 23         | 5.8               | 35x70        |       |
|            | 15000    | 22         | 18         | 6.4               | 35x80        |       |
| 100(125)   | 1000     | 200        | 160        | 1.4               | 22x30        |       |
|            | 1200     | 166        | 133        | 1.6               | 22x40        |       |
|            | 1500     | 133        | 107        | 1.8               | 22x40        |       |
|            | 2200     | 91         | 73         | 2.2               | 25x40        |       |
|            | 3300     | 61         | 49         | 3                 | 30x50        |       |
|            | 4700     | 43         | 34         | 4                 | 30x60        |       |
|            | 5600     | 32         | 21         | 5.2               | 35x50        |       |
|            | 6800     | 21         | 16         | 6.5               | 35x60        |       |
|            | 8200     | 15         | 8          | 7                 | 35x60        |       |
|            | 10000    | 7          | 4          | 8.2               | 35x70        |       |
|            | 160(200) | 470        | 283        | 226               | 1.6          | 22x40 |
|            |          | 560        | 237        | 190               | 1.9          | 22x40 |
|            |          | 680        | 196        | 157               | 2.1          | 22x50 |
| 820        |          | 162        | 130        | 2.4               | 25x40        |       |
| 1000       |          | 133        | 107        | 2.7               | 25x50        |       |
| 1500       |          | 89         | 71         | 3.7               | 30x40        |       |
| 2200       |          | 73         | 58         | 4.5               | 35x50        |       |
| 2700       |          | 59         | 45         | 5.7               | 35x50        |       |

## Standard Ratings

| WV<br>(SV) | Cap. | Max<br>ESR | Typ<br>ESR | Ripple<br>Current | Size<br>φDxL |
|------------|------|------------|------------|-------------------|--------------|
|            |      | 20°C 120Hz |            | 85°C<br>120Hz     |              |
| V          | μF   | mΩ         | mΩ         | Arms              | mm           |
| 160(200)   | 3300 | 45         | 32         | 6.9               | 35x60        |
|            | 3900 | 33         | 19         | 7.8               | 35x70        |
|            | 4700 | 20         | 8          | 8.9               | 35x80        |
| 200(250)   | 220  | 600        | 483        | 1.1               | 22x30        |
|            | 330  | 402        | 322        | 1.4               | 22x30        |
|            | 470  | 283        | 226        | 1.8               | 22x40        |
|            | 560  | 237        | 190        | 2                 | 22x50        |
|            | 680  | 196        | 157        | 2.3               | 22x50        |
|            | 820  | 162        | 130        | 2.6               | 25x50        |
|            | 1000 | 133        | 107        | 3.1               | 30x45        |
|            | 1200 | 111        | 89         | 3.4               | 30x50        |
|            | 1500 | 107        | 85         | 3.8               | 35x50        |
|            | 1800 | 90         | 76         | 4.5               | 35x50        |
|            | 2200 | 72         | 60         | 5.1               | 35x50        |
|            | 2700 | 58         | 47         | 6.3               | 35x60        |
|            | 3300 | 43         | 32         | 7                 | 35x80        |
| 250(300)   | 220  | 905        | 724        | 1.1               | 22x30        |
|            | 330  | 603        | 483        | 1.4               | 22x40        |
|            | 470  | 424        | 339        | 1.8               | 25x40        |
|            | 560  | 356        | 285        | 2                 | 25x50        |
|            | 680  | 293        | 235        | 2.3               | 25x50        |
|            | 820  | 243        | 195        | 2.6               | 30x40        |
|            | 1000 | 199        | 160        | 3                 | 30x50        |
|            | 1200 | 166        | 133        | 3.4               | 35x50        |
|            | 1500 | 137        | 118        | 3.8               | 35x60        |
| 315(365)   | 220  | 905        | 724        | 1.1               | 22x40        |
|            | 330  | 603        | 483        | 1.4               | 25x50        |
|            | 470  | 424        | 339        | 1.8               | 30x45        |
|            | 560  | 356        | 285        | 2                 | 30x50        |
|            | 680  | 293        | 235        | 2.3               | 35x40        |
|            | 820  | 228        | 196        | 2.8               | 35x45        |
|            | 1000 | 156        | 147        | 3.2               | 35x50        |
| 350(400)   | 220  | 905        | 724        | 1.2               | 25x40        |
|            | 330  | 603        | 483        | 1.6               | 25x40        |
|            | 470  | 424        | 339        | 2                 | 25x50        |
|            | 560  | 356        | 285        | 2.3               | 30x50        |
|            | 680  | 293        | 235        | 2.6               | 35x50        |
|            | 820  | 243        | 195        | 2.8               | 35x50        |
|            | 1000 | 198        | 145        | 3.2               | 35x60        |
|            | 1200 | 137        | 98         | 3.4               | 35x70        |
| 1500       | 89   | 47         | 3.6        | 35x80             |              |

| WV<br>(SV) | Cap.     | Max<br>ESR | Typ<br>ESR | Ripple<br>Current | Size<br>φDxL |
|------------|----------|------------|------------|-------------------|--------------|
|            |          | 20°C 120Hz |            | 85°C<br>120Hz     |              |
| V          | μF       | mΩ         | mΩ         | Arms              | mm           |
| 400(450)   | 100      | 1990       | 1592       | 0.7               | 22x30        |
|            | 120      | 1658       | 1327       | 0.8               | 22x30        |
|            | 150      | 1327       | 1062       | 0.9               | 22x35        |
|            | 220      | 905        | 724        | 1.1               | 22x40        |
|            | 330      | 603        | 483        | 1.6               | 25x50        |
|            | 470      | 424        | 339        | 2.1               | 30x45        |
|            | 560      | 356        | 285        | 2.3               | 35x45        |
|            | 680      | 293        | 235        | 2.7               | 35x50        |
|            | 820      | 242        | 194        | 3.1               | 35x60        |
|            | 1000     | 199        | 107        | 3.7               | 35x60        |
|            | 1200     | 147        | 58         | 4.3               | 35x70        |
|            | 1500     | 96         | 17         | 4.9               | 35x80        |
|            | 450(500) | 100        | 1990       | 1592              | 0.73         |
| 150        |          | 1327       | 1062       | 1.0               | 22x40        |
| 220        |          | 905        | 724        | 1.2               | 25x40        |
| 330        |          | 603        | 480        | 1.7               | 30x50        |
| 470        |          | 424        | 339        | 2.2               | 35x50        |
| 560        |          | 356        | 285        | 2.4               | 35x50        |
| 680        |          | 293        | 235        | 2.8               | 35x60        |
| 820        |          | 242        | 194        | 3.2               | 35x70        |
| 1000       |          | 199        | 107        | 4.2               | 35x80        |
| 1200       | 145      | 37         | 4.6        | 35x80             |              |
| 500(550)   | 100      | 1990       | 1592       | 0.9               | 25x30        |
|            | 150      | 1327       | 1062       | 1.2               | 25x50        |
|            | 220      | 905        | 724        | 1.6               | 30x50        |
|            | 330      | 603        | 483        | 2.0               | 35x50        |
|            | 470      | 424        | 339        | 2.6               | 35x60        |
|            | 560      | 356        | 285        | 2.9               | 35x60        |
|            | 680      | 293        | 235        | 3.2               | 35x70        |
|            | 820      | 225        | 183        | 3.5               | 35x80        |