

**TP Series**

**High Ripple Current (高纹波) , Long Life Assurance(长寿命)**

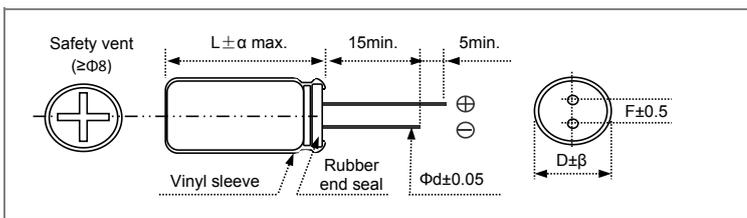
**FEATURES 特点**

1. High ripple current.
2. For electronic ballast, power supply, light emitting diode lamp(LED) drive source etc.

**SPECIFICATIONS 规格表**

| Item 项目  | Performance Characteristics 特性参数  |   |      |  |  |   |      |      |
|--|---|---|------|--|--|---|------|------|
| Operation Temperature Range 工作温度范围               | -40°C~+105°C  |   |      |  | -25~ +105°C                                  |   |      |      |
| Rated Working Voltage Range 额定电压范围               | 160 to 400 VDC  |   |      |  | 450 VDC                                      |   |      |      |
| Nominal Capacitance Range 静电容量范围                 | 1 to 220µF  |   |      |  |  |   |      |      |
| Capacitance Tolerance 静电容量允许偏差                   | ±20% (120Hz 20°C)   |   |      |  |  |   |      |      |
| Leakage Current 漏电流                              | LC≤0.02CV +25 (µA) Whichever is greater measured after 2 minutes application of rated working voltage at +20 °C<br>施加额定工作电压充电2分钟后读数。 [C : 静电容量(µF) , V : 额定电压(V)] |   |      |  |  |   |      |      |
| Dissipation Factor (tan δ) 损失角正切值 (120Hz, +20°C) | Working Voltage(v)  | 160   | 200  | 250  | 350  | 400   | 450  | 500  |
|  | tan δ(max.)   | 0.15  | 0.15 | 0.15   | 0.20   | 0.20  | 0.20 | 0.20 |
| Surge Voltage 浪涌(突波)电压                           | Working Voltage(v)  | 160   | 200  | 250  | 350  | 400   | 450  | 500  |
|  | Surge Voltage(v)  | 200   | 250  | 300  | 400  | 450   | 500  | 550  |
| Low Temperature characteristics 温度特性(阻抗比)        | Impedance ratio max. at 120 Hz 阻抗比最大值   |   |      |  |  |   |      |      |
|  | Working Voltage(V)  | 160   | 200  | 250  | 350  | 400   | 450  | 500  |
|  | Z(-25°C)/ Z(+20°C)  | 3   | 3    | 3  | 5  | 5   | 6    | 12   |
| High Temperature Loading (Endurance) 高温负荷寿命(耐久性) | Test conditions 试验条件  |   |      |  | Post test requirements at +20°C 试验后特性应满足如下要求 |   |      |      |
|  | Duration 持续时间   | 3,000~5000 hours  |      |  | Leakage current 漏电流                          | ≤Initial specified value 初始规格值                    |      |      |
|  | Ambient temp. 环境温度  | +105°C  |      |  | Cap. Change 静电容量变化率                          | within ±20% of initial measured value 初始测试值的±20%内 |      |      |
|  | Applied voltage 施加电压  | DC voltage with maximum permissible ripple current specified at +105°C 施加直流电压与额定纹波电流(所加电压峰值 [DC+AC]不超过额定工作电压) |      |  | D.F.(tan δ) 损失角正切值                           | ≤200% of initial specified value 2倍初始规格值          |      |      |
|  |   |   |      | Before test requirement: Resumed 16 hours at normal temperature 测试前将电容在常温中放置16小时   |  |   |      |      |
| Shelf Life 高温储存寿命                                | Test conditions 试验条件  |   |      |  | Post test requirements at +20°C 试验后特性应满足如下要求 |   |      |      |
|  | Duration 持续时间   | 1,000 hours   |      |  | Leakage current 漏电流                          | ≤Initial specified value 初始规格值                    |      |      |
|  | Ambient temp. 环境温度  | +105°C  |      |  | Cap. Change 静电容量变化率                          | within ±20% of initial measured value 初始测试值的±20%内 |      |      |
|  | Applied voltage 施加电压  | (None) 无  |      |  | D.F.(tan δ) 损失角正切值                           | ≤200% of initial specified value 2倍初始规格值          |      |      |
|  |   |   |      | ♦(Before the measurements, the capacitor shall be pretreated by applying DC working voltage for 30min, after discharged and then stored under standard atmospheric conditions for 24-48 hours) 测试前应将电容在常温中施加工作电压30分钟, 放电后在标准气压下放置24~48小时 |  |   |      |      |
| Other 其他   | JIS C-5101 (IEC 60384)  |   |      |  |  |   |      |      |

**CASE SIZE TABLE 尺寸图 (Unit : mm)**



|    |              |     |    |              |    |
|----|--------------|-----|----|--------------|----|
| ΦD | 8            | 10  | 13 | 16           | 18 |
| F  | 3.5          | 5.0 |    | 7.5          |    |
| Φd | 0.5 or 0.6   | 0.6 |    | 0.8          |    |
| α  | (L < 20) 1.5 |     |    | (L ≥ 20) 2.0 |    |
| β  | (D < 20) 0.5 |     |    | (D ≥ 20) 1.0 |    |

**Multiplier for Ripple Current vs. Frequency 纹波电流频率修正系数**

| Cap(µF) | 120 Hz | 1K Hz | 10K Hz | 100K Hz |
|---------|--------|-------|--------|---------|
| 1~5.6   | 0.35   | 0.65  | 0.80   | 1.00    |
| 6.8~180 | 0.50   | 0.75  | 0.90   | 1.00    |
| ≥220    | 0.85   | 0.85  | 0.94   | 1.00    |

**Multiplier for Ripple Current vs. Temperature 纹波电流温度修正系数**

| Temperature | 45°C | 60°C | 70°C | 85°C | 95°C | 105°C |
|-------------|------|------|------|------|------|-------|
| Multiplier  | 1.8  | 1.5  | 1.45 | 1.3  | 1.2  | 1.0   |

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**STANDARD RATINGS 标准品一览表**

| Voltage(Code) |      | 160V(2C)  |      | 200V(2D)  |      | 250V(2E)  |      | 350V (2V) |      |
|---------------|------|-----------|------|-----------|------|-----------|------|-----------|------|
| Cap.(μF)      | Code | Case Size | R.C  |
| 4.7           | 4P7  |           |      |           |      | 8×12      | 140  | 10×13     | 150  |
| 6.8           | 6P8  |           |      |           |      | 10×13     | 250  | 10×16     | 280  |
| 10            | 010  | 10×13     | 290  | 10×16     | 320  | 10×16     | 320  | 10×20     | 350  |
|               |      | 10×16     | 320  |           |      |           |      |           |      |
| 22            | 022  | 10×20     | 500  | 10×20     | 500  | 10×20     | 500  | 13×21     | 650  |
| 33            | 033  | 10×20     | 650  | 10×20     | 650  | 13×21     | 800  | 16×21     | 900  |
| 47            | 047  | 10×20     | 750  | 13×20     | 980  | 13×21     | 980  | 16×21     | 1080 |
| 68            | 068  | 13×21     | 1180 | 13×25     | 1300 | 16×21     | 1300 | 18×25     | 1470 |
| 82            | 082  |           |      | 16×21     | 1380 | 18×21     | 1380 | 18×25     | 1530 |
| 100           | 101  | 13×25     | 1420 | 16×25     | 1420 | 16×25     | 1530 |           |      |
| 150           | 151  | 16×25     | 1890 | 18×32     | 1890 | 18×25     | 1940 |           |      |
| 220           | 221  | 18×25     | 2370 | 18×36     | 2648 |           |      |           |      |

Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz

Case Size ΦD x L(mm)

| Voltage(Code) |      | 400V(2G)  |      | 420V(2M)  |      | 450V(2W)  |      | 500V(2H)  |     |
|---------------|------|-----------|------|-----------|------|-----------|------|-----------|-----|
| Cap.(μF)      | Code | Case Size | R.C  | Case Size | R.C  | Case Size | R.C  | Case Size | R.C |
| 1             | 001  | 8×12      | 60   |           |      |           |      |           |     |
| 2.2           | 2P2  | 8×12      | 95   |           |      |           |      |           |     |
| 3.3           | 3P3  | 10×13     | 150  |           |      |           |      |           |     |
| 4.7           | 4P7  | 8×12      | 150  |           |      | 10×20     | 220  |           |     |
|               |      | 10×16     | 220  |           |      |           |      |           |     |
| 5.6           | 5P6  | 10×16     | 250  |           |      | 10×20     | 250  |           |     |
| 6.8           | 6P8  | 8×16      | 260  |           |      | 10×20     | 280  | 10×17     | 160 |
|               |      | 10×13     | 270  |           |      |           |      |           |     |
|               |      | 10×16     | 280  |           |      |           |      |           |     |
| 10            | 010  | 10×16     | 320  |           |      | 10×17     | 330  | 13×17     | 230 |
|               |      | 10×20     | 350  |           |      | 13×21     | 450  |           |     |
| 15            | 015  | 13×17     | 500  |           |      | 13×25     | 600  | 13×21     | 310 |
|               |      | 13×21     | 550  |           |      |           |      |           |     |
| 22            | 022  | 13×18     | 700  |           |      | 16×21     | 730  |           |     |
|               |      | 13×21     | 760  |           |      |           |      |           |     |
| 33            | 033  | 13×21     | 650  |           |      | 16×25     | 980  |           |     |
|               |      | 16×21     | 900  |           |      |           |      |           |     |
| 47            | 047  | 16×25     | 1180 |           |      | 18×25     | 1200 |           |     |
| 68            | 068  | 18×25     | 1470 |           |      |           |      |           |     |
|               |      | 18×32     | 1490 |           |      |           |      |           |     |
| 82            | 082  | 18×32     | 1510 |           |      |           |      |           |     |
| 100           | 101  | 18×32     | 1540 | 12.5×55   | 1200 |           |      |           |     |
| 120           | 121  | 18×36     | 1700 |           |      |           |      |           |     |
| 150           | 151  | 18×45     | 1900 |           |      |           |      |           |     |

Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz

Case Size ΦD x L(mm)

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