

# EN 系列 Series

## 特点 Features

- 耐高纹波，超长寿命，85°C 20000小时，可用于大功率电源、UPS不间断电源、变频器等电路中。  
High ripple current, Ultra long life, Load life of 20000 hours at 85°C,  
Used large power source, Uninterruptible power supplies,  
Frequency converter circuit .etc.
- RoHS指令已对应完毕。Adapted to the RoHS directive.



## 主要技术性能 Specifications

| 项目 Items   | 特性 Performance Characteristics   |           |
|--|--|-----------|
| 使用温度范围<br>Operating Temperature Range                          | -25~+85°C  |           |
| 额定电压范围<br>Rated Voltage Range                                  | 350~450V   |           |
| 标称容量允许偏差<br>Nominal Capacitance Tolerance                      | ±20% (+20°C, 120Hz)  |           |
| 漏电流<br>Leakage Current   | I < 0.01CV(µA)或5mA 5分钟 取较小值 (at 20°C, after 5 minutes, Whichever is smaller)   |           |
| 损耗角正切值(tgδ)<br>Dissipation Factor(+20°C, 120Hz)                | ≤0.15  |           |
| 温度特性 Temperature Characteristics<br>(Impedance ratio at 120Hz) | Rated Voltage (V)  | 350 ~ 450 |
|  | Z-25°C/Z+20°C  | 8         |
| 高温贮存<br>Shelf Life   | +85°C, 1000小时贮存后, 加额定工作电压处理30分钟, 恢复16小时后:<br>after storage for 1000 hours at +85°C, U <sub>R</sub> to be applied for 30 minutes and then resumed for 16 hours:<br>电容量变化率 Capacitance change : ±20%初始测量值以内 ±20% of the initial measured value<br>漏电流 Leakage current : ≤初始规定值 ≤Initial specified value<br>损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2times of the initial specified value |           |

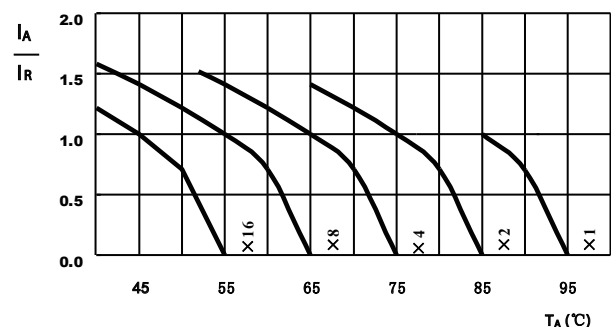
|                            | 使用寿命(Useful Life)                                 |                    | 负载寿命(Load Life)                                     | 耐久性测试(Endurance Test)                               |
|----------------------------|---|--------------------|---|---|
| 寿命时间(Lifetime)             | 25000h  | > 250000h          | 20000h  | 20000h  |
| 漏电流(Leakage Current)       | ≤初始规定值 Not more than specified value              |                    | ≤初始规定值<br>Not more than specified value             | ≤初始规定值<br>Not more than specified value             |
| 电容量变化率(Capacitance Change) | ±30%初始测量值内 Within ±30% initial value              |                    | ±25%初始测量值内<br>Within ±25% initial value             | ±10%初始测量值内<br>Within ±10% initial value             |
| 损耗角正切值(Dissipation Factor) | ≤3倍初始规定值<br>Not more than 300% of specified value |                    | ≤2.5倍初始规定值<br>Not more than 250% of specified value | ≤1.3倍初始规定值<br>Not more than 130% of specified value |
| 应用条件(Condition)            | U <sub>R</sub>                                    | U <sub>R</sub>     | U <sub>R</sub>                                      | U <sub>R</sub>                                      |
| 应用电压(Applied Voltage)      |   |                    |   | I <sub>R</sub> =0                                   |
| 应用电流(Applied Current)      | I <sub>R</sub>                                    | 1.2×I <sub>R</sub> |   | 85°C  |
| 应用温度(Applied Temperature)  | 85°C  | 40°C               | 85°C  |   |
| 失效率(Outlier Percentage)    | ≤1%   | ≤1%                | 0%  | IEC60384  |

## 纹波电流的相关参数 Multiplier for Ripple Current

### 频率系数 Frequency Coefficient

| Frequency (Hz)    | 50/60 | 120  | 300  | 1k   | ≥10K |
|-------------------|-------|------|------|------|------|
| Rated Voltage (V) |       |      |      |      |      |
| 350~450           | 0.70  | 1.00 | 1.10 | 1.30 | 1.40 |

## 寿命时间图 Life Time Graph



此图表示电容的使用寿命时间  
The graphs shows a typical trend of the standard capacitor useful life.



## 尺寸 Dimensions

| Rated Voltage | Surge Voltage | Rated Capacitance | Dissipation Factor MAX | Max ESR 20°C, 120Hz | Typ ESR 20°C, 120Hz | Max Ripple Current 105°C,120Hz | SIZE     |
|---------------|---------------|-------------------|------------------------|---------------------|---------------------|--------------------------------|----------|
| (V.D.C)       | (V.D.C)       | ( $\mu$ F)        | -                      | (m $\Omega$ )       | (m $\Omega$ )       | (Arms)                         | D×L(mm)  |
| 350           | 400           | 1000              | 0.15                   | 199                 | 106                 | 4.0                            | 51×75    |
|               |               | 1200              | 0.15                   | 166                 | 88                  | 4.3                            | 51×75    |
|               |               | 1500              | 0.15                   | 133                 | 71                  | 5.3                            | 51×95    |
|               |               | 1800              | 0.15                   | 111                 | 59                  | 5.8                            | 51×95    |
|               |               | 2200              | 0.15                   | 90                  | 48                  | 7.2                            | 51×130   |
|               |               | 2700              | 0.15                   | 74                  | 39                  | 7.8                            | 63.5×95  |
|               |               | 3300              | 0.15                   | 60                  | 32                  | 9.2                            | 63.5×115 |
|               |               | 3900              | 0.15                   | 51                  | 27                  | 10.5                           | 63.5×130 |
|               |               | 4700              | 0.15                   | 42                  | 23                  | 11.7                           | 76×115   |
|               |               | 5600              | 0.15                   | 36                  | 19                  | 13.3                           | 76×130   |
|               |               | 6800              | 0.15                   | 29                  | 16                  | 15.6                           | 76×155   |
|               |               | 8200              | 0.15                   | 24                  | 13                  | 18.2                           | 89×155   |
|               |               | 10000             | 0.15                   | 20                  | 11                  | 20.1                           | 89×155   |
|               |               | 12000             | 0.15                   | 17                  | 9                   | 23.9                           | 89×195   |
| 400           | 450           | 1000              | 0.15                   | 199                 | 106                 | 4.1                            | 51×75    |
|               |               | 1200              | 0.15                   | 166                 | 88                  | 4.8                            | 51×95    |
|               |               | 1500              | 0.15                   | 133                 | 71                  | 5.7                            | 51×115   |
|               |               | 1800              | 0.15                   | 111                 | 59                  | 6.5                            | 51×130   |
|               |               | 2200              | 0.15                   | 90                  | 48                  | 7.1                            | 63.5×95  |
|               |               | 2700              | 0.15                   | 74                  | 39                  | 8.3                            | 63.5×115 |
|               |               | 3300              | 0.15                   | 60                  | 32                  | 9.6                            | 63.5×130 |
|               |               | 3900              | 0.15                   | 51                  | 27                  | 11.2                           | 76×115   |
|               |               | 4700              | 0.15                   | 42                  | 23                  | 12.2                           | 76×130   |
|               |               | 5600              | 0.15                   | 36                  | 19                  | 14.2                           | 76×155   |
|               |               | 6800              | 0.15                   | 29                  | 16                  | 16.6                           | 89×155   |
|               |               | 8200              | 0.15                   | 24                  | 13                  | 18.3                           | 89×155   |
|               |               | 10000             | 0.15                   | 20                  | 11                  | 21.9                           | 89×195   |
|               |               | 450               | 500                    | 1000                | 0.15                | 199                            | 113      |
| 1200          | 0.15          |                   |                        | 166                 | 94                  | 5.1                            | 51×115   |
| 1500          | 0.15          |                   |                        | 133                 | 75                  | 6.1                            | 51×130   |
| 1800          | 0.15          |                   |                        | 111                 | 63                  | 6.5                            | 63.5×95  |
| 2200          | 0.15          |                   |                        | 90                  | 51                  | 7.5                            | 63.5×115 |
| 2700          | 0.15          |                   |                        | 74                  | 42                  | 8.8                            | 63.5×130 |
| 3300          | 0.15          |                   |                        | 60                  | 34                  | 10.3                           | 76×130   |
| 3900          | 0.15          |                   |                        | 51                  | 29                  | 12.4                           | 76×150   |
| 4700          | 0.15          |                   |                        | 42                  | 24                  | 13.1                           | 76×155   |
| 5600          | 0.15          |                   |                        | 36                  | 20                  | 15.1                           | 89×155   |
| 6800          | 0.15          |                   |                        | 29                  | 17                  | 18.2                           | 89×195   |
| 8200          | 0.15          |                   |                        | 24                  | 14                  | 20.1                           | 89×195   |