

HNB 系列 Series

特点 Features

- 双极性，标准品，用于极性翻转或极性变换的电路中。
Bi-polarized Standard series, used in polarity reverse and change circuits.
- RoHS指令已对应完毕。
Adapted to the RoHS directive.



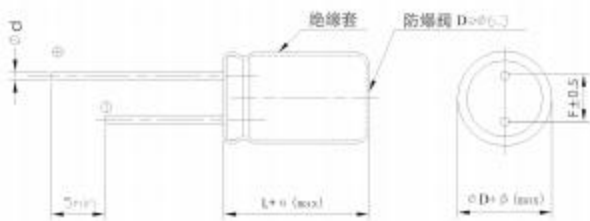
主要技术性能 Specifications

| 项目 Items | 特性 Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-----------|--------|------|------|------|------|------|------|----|-----|-----|-----------------|------|------|------|------|------|------|------|------|------|-----------------|----|---|---|---|---|---|---|---|--|
| 使用温度范围 Operating Temperature Range | -40~+85°C | -25~+85°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 额定电压范围 Rated Voltage Range | 6.3~100V | 160V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 标称电容量范围 Nominal Capacitance Range | 0.47~6800μF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 标称电容量允许偏差 Capacitance Tolerance | ±20%(+20°C, 120Hz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 漏电流 Leakage Current | I ≤ 0.03CV + 3(μA) 2分钟(at 20°C, after 2 minutes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz) | <table border="1"> <thead> <tr> <th>UR (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> </tr> </thead> <tbody> <tr> <td>tgδ</td> <td>0.28</td> <td>0.24</td> <td>0.22</td> <td>0.20</td> <td>0.15</td> <td>0.14</td> <td>0.13</td> <td>0.13</td> <td>0.15</td> </tr> </tbody> </table> | | UR (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | tgδ | 0.28 | 0.24 | 0.22 | 0.20 | 0.15 | 0.14 | 0.13 | 0.13 | 0.15 | | | | | | | | | | |
| UR (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | | | | | | | | | | | | | | | | | | | | | | | |
| tgδ | 0.28 | 0.24 | 0.22 | 0.20 | 0.15 | 0.14 | 0.13 | 0.13 | 0.15 | | | | | | | | | | | | | | | | | | | | | | | |
| 温度特性 Temperature Characteristics (Impedance ratio at 120Hz) | <table border="1"> <thead> <tr> <th>UR (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> </tr> </thead> <tbody> <tr> <td>Z-25°C / Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>4</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>10</td> <td>8</td> <td>6</td> <td>5</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td></td> </tr> </tbody> </table> | | UR (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | Z-25°C / Z+20°C | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | Z-40°C / Z+20°C | 10 | 8 | 6 | 5 | 4 | 4 | 3 | 3 | |
| UR (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | | | | | | | | | | | | | | | | | | | | | | | |
| Z-25°C / Z+20°C | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | | | | | | | | | | | | | | | | | | | | | | | |
| Z-40°C / Z+20°C | 10 | 8 | 6 | 5 | 4 | 4 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| 耐久性 Load Life | +85°C加额定电压2000小时(每250小时反转极性一次)恢复16小时后: After applying rated voltage for 2000 hours at +85°C (with the polarity inverted every 250 hours) and then resumed 16 hours: 电容量变化率 Capacitance change: ±20%初始测量值以内 ±20% of the initial measured value 漏电流 Leakage current: ≤初始规定值 Initial specified value 损耗角正切值 Dissipation factor: ≤2倍初始规定值 2times of the initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 高温贮存 Shelf Life | +85°C, 1000小时贮存后, 恢复16小时后: After storage for 1000 hours at +85°C and then resumed 16 hours: 电容量变化率 Capacitance change: ±20%初始测量值以内 ±20% of the initial measured value 漏电流 Leakage current: ≤2倍初始规定值 2times of the initial specified value 损耗角正切值 Dissipation factor: ≤2倍初始规定值 2times of the initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

频率修正系数 Frequency Coefficient

| F(Hz) | 60 | 120 | 1K | ≥10k |
|----------|-----|-----|------|------|
| 0.47~68 | 0.8 | 1 | 1.45 | 1.7 |
| 100~470 | 0.8 | 1 | 1.35 | 1.5 |
| 680~6800 | 0.8 | 1 | 1.2 | 1.3 |

外形图及尺寸表 Case Size Table



单位 Unit: mm

| | | | | | | | |
|------|--------------|-----|---------|-----|-----|-----|-----|
| D | 5 | 6.3 | 8 | 10 | 13 | 16 | 18 |
| F | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 |
| d | 0.5 | 0.5 | 0.5、0.6 | 0.6 | 0.6 | 0.8 | 0.8 |
| αMAX | L < 20 > 1.5 | | | | | | |
| | L ≥ 20 > 2.0 | | | | | | |
| βMAX | D < 20 > 0.5 | | | | | | |
| | D ≥ 20 > 1.0 | | | | | | |

尺寸 Dimensions

| WV CAP(μF) | | 6.3V(0J) | | 10V(1A) | | 16V(1C) | | 25V(1E) | | 35V(1V) | |
|---------------|-----|----------|--------|---------|--------|---------|--------|---------|--------|---------|--------|
| | | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 4.7 | 4R7 | | | | | | | | | 5×11 | 34 |
| 10 | 100 | | | | | 5×11 | 47 | 5×11 | 42 | 5×11 | 43 |
| 22 | 220 | | | 5×11 | 57 | 5×11 | 57 | 6.3×11 | 65 | 6.3×11 | 73 |
| | | | | | | | | 5×11 | 42 | | |
| 33 | 330 | 5×11 | 64 | 5×11 | 64 | 5×11 | 68 | 6.3×11 | 80 | 8×11.5 | 100 |
| 47 | 470 | 5×11 | 76 | 5×11 | 76 | 6.3×11 | 95 | 6.3×11 | 95 | 8×11.5 | 120 |
| | | | | | | | | 5×11 | 76 | | |
| 100 | 101 | 6.3×11 | 125 | 6.3×11 | 125 | 8×11.5 | 160 | 8×11.5 | 160 | 10×16 | 230 |
| 220 | 221 | 8×11.5 | 215 | 8×11.5 | 215 | 10×13 | 275 | 10×16 | 305 | 13×20 | 410 |
| 330 | 331 | 8×11.5 | 265 | 10×16 | 345 | 10×16 | 375 | 13×20 | 450 | 13×20 | 505 |
| 470 | 471 | 10×13 | 370 | 10×16 | 410 | 10×20 | 485 | 13×20 | 540 | 13×25 | 655 |
| 1000 | 102 | 10×20 | 650 | 13×20 | 720 | 16×25 | 855 | 16×25 | 950 | 16×30 | 1140 |
| 2200 | 222 | 13×25 | 1160 | 16×25 | 1280 | 16×30 | 1510 | 18×35 | 1620 | 18×40 | 1650 |
| 3300 | 332 | 16×25 | 1570 | 16×30 | 1690 | 18×35 | 1980 | | | | |
| 4700 | 472 | 16×30 | 2020 | 18×35 | 2160 | | | | | | |
| 6800 | 682 | 18×35 | 2600 | | | | | | | | |

| WV CAP(μF) | | 50V(1H) | | 63V(1J) | | 100V(2A) | | 160V(2C) | |
|---------------|-----|---------|--------|---------|--------|----------|--------|----------|--------|
| | | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 0.47 | R47 | 5×11 | 11 | | | 5×11 | 14 | | |
| 1 | 010 | 5×11 | 17 | | | 5×11 | 21 | | |
| 2.2 | 2R2 | 5×11 | 25 | | | 6.3×11 | 34 | | |
| | | | | | | 8×11.5 | 36 | | |
| 3.3 | 3R3 | 5×11 | 27 | 5×11 | 28 | 6.3×11 | 39 | 10×16 | 49 |
| | | | | | | 8×11.5 | 45 | | |
| 4.7 | 4R7 | 5×11 | 34 | 6.3×11 | 34 | 6.3×11 | 47 | 10×16 | 59 |
| | | | | | | 8×11.5 | 65 | | |
| 6.8 | 6R8 | 5×11 | 38 | 6.3×11 | 42 | 6.3×11 | 48 | | |
| | | | | | | 8×11.5 | 75 | | |
| 10 | 100 | 5×11 | 40 | 6.3×11 | 57 | 8×11.5 | 71 | 13×20 | 109 |
| | | 6.3×11 | 52 | | | | | | |
| 22 | 220 | 8×11.5 | 89 | 8×11.5 | 95 | 10×16 | 135 | 13×25 | 177 |
| 33 | 330 | 6.3×11 | 54 | 10×13 | 135 | 13×20 | 220 | 16×25 | 240 |
| | | 8×11.5 | 105 | | | | | | |
| 47 | 470 | 8×11.5 | 110 | 10×16 | 180 | 13×20 | 240 | 16×35 | 329 |
| | | 10×13 | 150 | | | | | | |
| 100 | 101 | 10×20 | 265 | 13×20 | 320 | 16×25 | 425 | 18×35 | 425 |
| 220 | 221 | 13×25 | 480 | 16×25 | 575 | 18×35 | 720 | | |
| 330 | 331 | 16×25 | 650 | 16×30 | 655 | | | | |
| 470 | 471 | 16×30 | 835 | 18×35 | 965 | | | | |

Size φD×L(mm)

Maximum Allowable Ripple Current (mA rms) at 85°C 120Hz