

## HC series

- High reliability, low ESR, high ripple current 高可靠性, 低等效串联电阻, 耐高纹波电流
- Life of 4000 hours at 125°C 工作寿命 125°C-4000 小时
- Compliant to the RoHS2.0 directive 符合 RoHS2.0 规范
- Compliant to AEC-Q200, contact us for more information 符合 AEC-Q200 标准, 详情请另行咨询



### Specifications 系列参数

| Items 项目                                                                                                                    | Characteristics 特性                                                                                                  |                                                      |
|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Rated Voltage Range 额定电压范围                                                                                                  | 25V ~ 80V DC                                                                                                        |                                                      |
| Capacitance Range 容量范围                                                                                                      | 27 ~ 1500μF                                                                                                         |                                                      |
| Capacitance Tolerance 容量偏差                                                                                                  | M : ±20%                                                                                                            |                                                      |
| Operating Temp. Range 工作温度范围                                                                                                | -55°C ~ +125°C                                                                                                      |                                                      |
| Dissipation Factor 损耗角正切                                                                                                    | Not to exceed the value specified 不超过规格值                                                                            |                                                      |
| Leakage Current 漏电流                                                                                                         | $I \leq 0.01CV$ (after 2 minutes) 充电 2 分钟后测试漏电流不超过 $0.01 \times (\text{静电容量 } \mu\text{F}) \times (\text{额定电压 } V)$ |                                                      |
| ESR (100K~300KHz) 等效串联电阻                                                                                                    | Not to exceed the value specified 不超过规格值                                                                            |                                                      |
| Endurance: 125°C, 4000h<br>Rated voltage applied (with the rated ripple current)<br>寿命: 125°C, 4000 小时<br>加载额定电压 (叠加额定纹波电流) | Capacitance Change 容量变化                                                                                             | Within ±30% of the value before test 初始值±30%以内       |
|                                                                                                                             | Dissipation Factor 损耗角正切                                                                                            | Not to exceed 200% of the value specified 不超过 2 倍规格值 |
|                                                                                                                             | ESR 等效串联电阻                                                                                                          | Not to exceed 200% of the value specified 不超过 2 倍规格值 |
|                                                                                                                             | Leakage current 漏电流                                                                                                 | Not to exceed the value specified 不超过规格值             |
| Moisture Resistance<br>85°C, RH85%, 2000h, Rated voltage applied<br>耐湿性<br>85°C, RH85% 加载额定电压连续工作 2000 小时                   | Capacitance Change 容量变化                                                                                             | Within ±30% of the value before test 初始值±30%以内       |
|                                                                                                                             | Dissipation Factor 损耗角正切                                                                                            | Not to exceed 200% of the value specified 不超过 2 倍规格值 |
|                                                                                                                             | ESR 等效串联电阻                                                                                                          | Not to exceed 200% of the value specified 不超过 2 倍规格值 |
|                                                                                                                             | Leakage Current 漏电流                                                                                                 | Not to exceed the value specified 不超过规格值             |

### Dimensions 尺寸 (Unit单位:mm)

| Φ8mm~Φ10mm |  | Φ8mm~Φ10mm |  |
|------------|--|------------|--|
|            |  |            |  |

|            |      |     |    |     |      |     |    |
|------------|------|-----|----|-----|------|-----|----|
| ΦD+0.5max. | 8    |     |    | 10  |      |     |    |
| L          | 11.5 | 16  | 20 | 10  | 12.5 | 16  | 20 |
| α          | 1.0  | 1.5 |    | 1.0 |      | 1.5 |    |
| F±0.5      | 3.5  |     |    | 5.0 |      |     |    |
| Φd±0.05    | 0.6  |     |    | 0.6 |      |     |    |

Capacitance List 容量对照表

| W.V (S.V)<br>SIZE | 25 (31)            | 35 (44)           | 50 (63)           | 63 (79)           | 80 (100)         |
|-------------------|--------------------|-------------------|-------------------|-------------------|------------------|
| 8×11.5            | 220 ~ 470 $\mu$ F  | 100 ~ 180 $\mu$ F | 56 ~ 82 $\mu$ F   | 39 ~ 56 $\mu$ F   | 27 ~ 39 $\mu$ F  |
| 8×16              | 330 ~ 560 $\mu$ F  | 180 ~ 270 $\mu$ F | 82 ~ 150 $\mu$ F  | 68 ~ 100 $\mu$ F  | 39 ~ 56 $\mu$ F  |
| 8×20              | 560 ~ 820 $\mu$ F  | 220 ~ 390 $\mu$ F | 100 ~ 180 $\mu$ F | 82 ~ 120 $\mu$ F  | 47 ~ 82 $\mu$ F  |
| 10×10             | 270 ~ 470 $\mu$ F  | 120 ~ 220 $\mu$ F | 68 ~ 120 $\mu$ F  | 47 ~ 82 $\mu$ F   | 27 ~ 47 $\mu$ F  |
| 10×12.5           | 330 ~ 680 $\mu$ F  | 180 ~ 330 $\mu$ F | 82 ~ 150 $\mu$ F  | 68 ~ 120 $\mu$ F  | 39 ~ 68 $\mu$ F  |
| 10×16             | 560 ~ 1000 $\mu$ F | 220 ~ 470 $\mu$ F | 120 ~ 220 $\mu$ F | 82 ~ 150 $\mu$ F  | 56 ~ 100 $\mu$ F |
| 10×20             | 680 ~ 1500 $\mu$ F | 330 ~ 680 $\mu$ F | 150 ~ 330 $\mu$ F | 100 ~ 220 $\mu$ F | 68 ~ 150 $\mu$ F |

Characteristics List 规格特性表

| W.V.<br>工作电压<br>(V) | Capacitance<br>容量<br>( $\mu$ F) | tg $\delta$<br>损耗角正切<br>(120Hz, 20°C) | ESR<br>等效串联电阻<br>(m $\Omega$ , 100kHz) | Rated Ripple Current<br>额定纹波电流<br>(125°C, mA, r.m.s) | Size<br>尺寸<br>$\Phi$ D×L(mm) | Part Number<br>物料编码 |
|---------------------|---------------------------------|---------------------------------------|----------------------------------------|------------------------------------------------------|------------------------------|---------------------|
| 25                  | 220                             | 0.12                                  | 18                                     | 2100                                                 | 8×11.5                       | PHC221M025F1A□□□□□□ |
|                     | 470                             | 0.12                                  | 12                                     | 3000                                                 | 8×16                         | PHC471M025F16□□□□□□ |
|                     | 820                             | 0.12                                  | 10                                     | 3600                                                 | 8×20                         | PHC821M025F20□□□□□□ |
|                     | 470                             | 0.12                                  | 16                                     | 2200                                                 | 10×10                        | PHC471M025G10□□□□□□ |
|                     | 680                             | 0.12                                  | 14                                     | 2600                                                 | 10×12.5                      | PHC681M025G1B□□□□□□ |
|                     | 1000                            | 0.12                                  | 12                                     | 3100                                                 | 10×16                        | PHC102M025G16□□□□□□ |
|                     | 1500                            | 0.12                                  | 10                                     | 3700                                                 | 10×20                        | PHC152M025G20□□□□□□ |
| 35                  | 150                             | 0.12                                  | 18                                     | 2000                                                 | 8×11.5                       | PHC151M035F1A□□□□□□ |
|                     | 220                             | 0.12                                  | 12                                     | 2800                                                 | 8×16                         | PHC221M035F16□□□□□□ |
|                     | 330                             | 0.12                                  | 10                                     | 3400                                                 | 8×20                         | PHC331M035F20□□□□□□ |
|                     | 220                             | 0.12                                  | 16                                     | 2000                                                 | 10×10                        | PHC221M035G10□□□□□□ |
|                     | 330                             | 0.12                                  | 14                                     | 2400                                                 | 10×12.5                      | PHC331M035G1B□□□□□□ |
|                     | 470                             | 0.12                                  | 12                                     | 2900                                                 | 10×16                        | PHC471M035G16□□□□□□ |
|                     | 680                             | 0.12                                  | 10                                     | 3500                                                 | 10×20                        | PHC681M035G20□□□□□□ |
| 50                  | 68                              | 0.10                                  | 23                                     | 1650                                                 | 8×11.5                       | PHC680M050F1A□□□□□□ |
|                     | 100                             | 0.10                                  | 13                                     | 2500                                                 | 8×16                         | PHC101M050F16□□□□□□ |
|                     | 150                             | 0.10                                  | 12                                     | 2900                                                 | 8×20                         | PHC151M050F20□□□□□□ |
|                     | 100                             | 0.10                                  | 25                                     | 1500                                                 | 10×10                        | PHC101M050G10□□□□□□ |
|                     | 150                             | 0.10                                  | 17                                     | 2000                                                 | 10×12.5                      | PHC151M050G1B□□□□□□ |
|                     | 220                             | 0.10                                  | 13                                     | 2600                                                 | 10×16                        | PHC221M050G16□□□□□□ |
|                     | 330                             | 0.10                                  | 12                                     | 3000                                                 | 10×20                        | PHC331M050G20□□□□□□ |
| 63                  | 47                              | 0.08                                  | 25                                     | 1570                                                 | 8×11.5                       | PHC470M063F1A□□□□□□ |
|                     | 100                             | 0.08                                  | 15                                     | 2300                                                 | 8×16                         | PHC101M063F16□□□□□□ |
|                     | 120                             | 0.08                                  | 13                                     | 2700                                                 | 8×20                         | PHC121M063F20□□□□□□ |
|                     | 82                              | 0.08                                  | 28                                     | 1400                                                 | 10×10                        | PHC820M063G10□□□□□□ |
|                     | 100                             | 0.08                                  | 19                                     | 1900                                                 | 10×12.5                      | PHC101M063G1B□□□□□□ |
|                     | 150                             | 0.08                                  | 15                                     | 2400                                                 | 10×16                        | PHC151M063G16□□□□□□ |
|                     | 220                             | 0.08                                  | 13                                     | 2800                                                 | 10×20                        | PHC221M063G20□□□□□□ |

| W.V.<br>工作电压<br>(V) | Capacitance<br>容量<br>( $\mu\text{F}$ ) | $\text{tg}\delta$<br>损耗角正切<br>(120Hz, 20°C) | ESR<br>等效串联电阻<br>(m $\Omega$ , 100kHz) | Rated Ripple Current<br>额定纹波电流<br>(125°C, mA <sub>r.m.s</sub> ) | Size<br>尺寸<br>$\Phi\text{D} \times \text{L}(\text{mm})$ | Part Number<br>物料编码 |
|---------------------|----------------------------------------|---------------------------------------------|----------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------|---------------------|
| 80                  | 39                                     | 0.08                                        | 30                                     | 1300                                                            | 8 × 11.5                                                | PHC390M080F1A□□□□□□ |
|                     | 56                                     | 0.08                                        | 18                                     | 2000                                                            | 8 × 16                                                  | PHC560M080F16□□□□□□ |
|                     | 82                                     | 0.08                                        | 15                                     | 2400                                                            | 8 × 20                                                  | PHC820M080F20□□□□□□ |
|                     | 47                                     | 0.08                                        | 40                                     | 1100                                                            | 10 × 10                                                 | PHC470M080G10□□□□□□ |
|                     | 68                                     | 0.08                                        | 25                                     | 1600                                                            | 10 × 12.5                                               | PHC680M080G1B□□□□□□ |
|                     | 100                                    | 0.08                                        | 18                                     | 2100                                                            | 10 × 16                                                 | PHC101M080G16□□□□□□ |
|                     | 150                                    | 0.08                                        | 15                                     | 2500                                                            | 10 × 20                                                 | PHC151M080G20□□□□□□ |

\* For the last 6 digits of the part number, please refer to the part number system on page 178 .

物料编码的最后 6 位，请参考 178 页物料编码系统。

### Frequency Coefficient for Ripple Current 纹波电流频率系数

| Frequency 频率                                        | 120Hz≤freq.<1KHz | 1KHz≤freq.<10KHz | 10KHz≤freq.<50KHz | 50KHz≤freq.<100KHz | 100KHz≤freq.<1000KHz |
|-----------------------------------------------------|------------------|------------------|-------------------|--------------------|----------------------|
| Coefficient 系数<br>( $C \leq 47\mu\text{F}$ )        | 0.05             | 0.25             | 0.55              | 0.80               | 1.00                 |
| Coefficient 系数<br>( $47 < C \leq 1000\mu\text{F}$ ) | 0.05             | 0.30             | 0.70              | 0.85               | 1.00                 |
| Coefficient 系数<br>( $C > 1000\mu\text{F}$ )         | 0.10             | 0.33             | 0.85              | 1.00               | 1.00                 |