

## VH series

- Load life of 10000 hours at 105°C 直流负载寿命 105°C-10000 小时
- Compliant to the RoHS2.0 directive 符合 RoHS2.0 规范
- Suitable for Thinness of electronic products 适合电子设备薄型化



## Specifications 系列参数

| Items 项目                                                                                                                | Characteristics 特性                                                      |                                                             |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------|
| Rated Voltage Range 额定电压范围                                                                                              | 2.5V ~ 50V DC                                                           |                                                             |
| Capacitance Range 容量范围                                                                                                  | 10 ~ 330μF                                                              |                                                             |
| Capacitance Tolerance 容量偏差                                                                                              | M : ±20%                                                                |                                                             |
| Operating Temp. Range 工作温度范围                                                                                            | -55°C ~ +105°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                                                                                                     | Not to exceed the value specified (after 2 minutes) 不超过规格值 (充电 2 分钟后测试) |                                                             |
| ESR (100K~300KHz) 等效串联电阻                                                                                                | Not to exceed the value specified 不超过规格值                                |                                                             |
| Endurance<br>105°C , 10000h , Rated voltage applied<br>寿命:<br>105°C 加载额定电压连续工作 10000 小时                                 | Capacitance Change 容量变化                                                 | Within ±20% of the value before test 初始值±20%以内              |
|                                                                                                                         | Dissipation Factor 损耗角正切                                                | Not to exceed 150% of the value specified 不超过 1.5 倍规格值      |
|                                                                                                                         | ESR 等效串联电阻                                                              | Not to exceed 150% of the value specified 不超过 1.5 倍规格值      |
|                                                                                                                         | Leakage current 漏电流                                                     | Not to exceed the value specified 不超过规格值                    |
| Moisture Resistance<br>60°C , RH90 ~ 95% , 1000h , Rated voltage applied<br>耐湿性<br>60°C , RH90 ~ 95% 加载额定电压连续工作 1000 小时 | Capacitance Change 容量变化                                                 | Within ±20% of the value before test 初始值±20%以内              |
|                                                                                                                         | Dissipation Factor 损耗角正切                                                | Not to exceed 150% of the value specified 不超过 1.5 倍规格值      |
|                                                                                                                         | ESR 等效串联电阻                                                              | Not to exceed 150% of the value specified 不超过 1.5 倍规格值      |
|                                                                                                                         | Leakage Current 漏电流                                                     | Not to exceed the value specified 不超过规格值                    |
| Resistance to Soldering Heat<br>After the recommended soldering conditions<br>耐焊接热<br>推荐焊接条件处理后测试                       | Capacitance Change 容量变化                                                 | Within ±5% of the value before test 初始值±5%以内                |
|                                                                                                                         | Dissipation Factor 损耗角正切                                                | Not to exceed the value specified 不超过规格值                    |
|                                                                                                                         | ESR 等效串联电阻                                                              | Not to exceed the value specified 不超过规格值                    |
|                                                                                                                         | Leakage Current 漏电流                                                     | Not to exceed the value specified (Charging treatment 充电处理) |

※ When there is any doubt, measure after charging treatment below.

Charging treatment: at 105 °C, Rated voltage is loaded for 120 minutes continuously.

如有疑问, 请进行充电处理后再测试, 测试条件: 在 105°C 环境温度下连续施加额定直流电压 120 分钟。

## Dimensions 尺寸 (Unit单位:mm)

|  |     |     |     |     |     |     |         |                                 |
|--|-----|-----|-----|-----|-----|-----|---------|---------------------------------|
|  | ΦD  | L   | W   | H   | C   | P   | R       | T <sub>1</sub> , T <sub>2</sub> |
|  | 6.3 | 4.5 | 6.6 | 6.6 | 7.2 | 2.1 | 0.5~0.8 | 0.2max.                         |

## Capacitance List 容量对照表

| W.V (S.V)<br>SIZE | 2.5 (2.9)         | 6.3 (7.2)         | 16 (18)          | 25 (29)         | 35 (40)         | 50 (58)         |
|-------------------|-------------------|-------------------|------------------|-----------------|-----------------|-----------------|
| 6.3×4.5           | 220 ~ 330 $\mu$ F | 150 ~ 220 $\mu$ F | 56 ~ 100 $\mu$ F | 39 ~ 47 $\mu$ F | 22 ~ 33 $\mu$ F | 10 ~ 15 $\mu$ F |

## Characteristics List 规格特性表

| W.V.<br>工作电压<br>(V) | Capacitance<br>容量<br>( $\mu$ F) | L.C.<br>漏电流<br>( $\mu$ A,2min) | tg $\delta$<br>损耗角正切<br>(120Hz,20℃) | ESR<br>等效串联电阻<br>(m $\Omega$ ,100kHz) | Rated Ripple Current<br>额定纹波电流<br>(mA,r.m.s) | Size<br>尺寸<br>$\Phi$ D×<br>L(mm) | Part Number<br>物料编码 |
|---------------------|---------------------------------|--------------------------------|-------------------------------------|---------------------------------------|----------------------------------------------|----------------------------------|---------------------|
| 2.5                 | 220                             | 300                            | 0.08                                | 18                                    | 2200                                         | 6.3×4.5                          | PVH221M2R5E45TR□□□□ |
|                     | 330                             | 700                            | 0.08                                | 18                                    | 2200                                         | 6.3×4.5                          | PVH331M2R5E45TR□□□□ |
| 6.3                 | 150                             | 480                            | 0.08                                | 20                                    | 2100                                         | 6.3×4.5                          | PVH151M6R3E45TR□□□□ |
|                     | 220                             | 700                            | 0.08                                | 20                                    | 2100                                         | 6.3×4.5                          | PVH221M6R3E45TR□□□□ |
| 16                  | 56                              | 448                            | 0.10                                | 40                                    | 1500                                         | 6.3×4.5                          | PVH560M016E45TR□□□□ |
|                     | 100                             | 800                            | 0.10                                | 40                                    | 1500                                         | 6.3×4.5                          | PVH101M016E45TR□□□□ |
| 25                  | 39                              | 293                            | 0.10                                | 45                                    | 1400                                         | 6.3×4.5                          | PVH390M025E45TR□□□□ |
|                     | 47                              | 353                            | 0.10                                | 45                                    | 1400                                         | 6.3×4.5                          | PVH470M025E45TR□□□□ |
| 35                  | 22                              | 231                            | 0.10                                | 55                                    | 1300                                         | 6.3×4.5                          | PVH220M035E45TR□□□□ |
|                     | 33                              | 347                            | 0.10                                | 55                                    | 1300                                         | 6.3×4.5                          | PVH330M035E45TR□□□□ |
| 50                  | 10                              | 150                            | 0.10                                | 65                                    | 1200                                         | 6.3×4.5                          | PVH100M050E45TR□□□□ |
|                     | 15                              | 225                            | 0.10                                | 65                                    | 1200                                         | 6.3×4.5                          | PVH150M050E45TR□□□□ |

\* For the last 4 digits of the part number, please refer to the part number system on page 178.

物料编码的最后 4 位，请参考 178 页物料编码系统。

\* 35V~63V: Not recommended for new customers 新客不推荐。

## 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.<500KHz |
|-------------------------------------------------|------------------|------------------|-------------------|--------------------|---------------------|
| Coefficient 系数<br>(C≤10 $\mu$ F)                | 0.10             | 0.30             | 0.55              | 0.85               | 1.00                |
| Coefficient 系数<br>(10 $\mu$ F < C ≤ 47 $\mu$ F) | 0.20             | 0.50             | 0.80              | 0.90               | 1.00                |
| Coefficient 系数<br>(C>47 $\mu$ F)                | 0.20             | 0.50             | 0.85              | 0.95               | 1.00                |