

# HS 固液混合型标准品

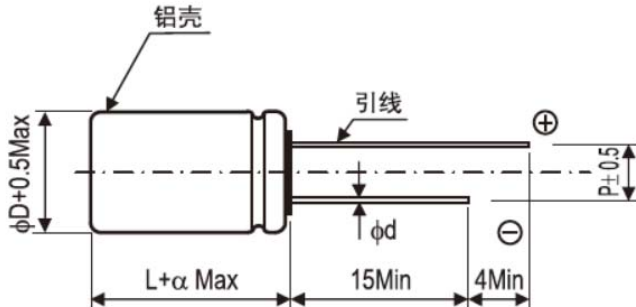


- 低 ESR，抗振动；
- 插件型；
- 适用于车载，通讯等领域。
- 105℃，, 5000 小时；
- 符合环保要求；

## 特性

| 项目           | 性能                               |                       |
|--------------|----------------------------------|-----------------------|
| 使用温度范围       | -55~+105℃                        |                       |
| 额定电压范围       | 16~100V                          |                       |
| 额定静电容量       | 10~4700 $\mu$ F                  |                       |
| 额定静电容量公差     | M 级， $\pm 20\%$ (120Hz, 20℃)     |                       |
| 损失角          | 见特性一览表 (120Hz, 20℃)              |                       |
| 等效串联阻抗 (ESR) | 见特性一览表 (100KHz, 20℃)             |                       |
| 漏电流          | 见特性一览表 (20℃，额定电压充电 2min, 测试 60S) |                       |
| 高温负荷         | 试验条件                             | 在 105℃ 下，额定电压，5000H 后 |
|              | 静电容量变化率                          | 试验前的 $\pm 20\%$ 以内    |
|              | 损失角                              | 初始标准值的 150% 以下        |
|              | 等效串联阻抗 (ESR)                     | 初始标准值的 150% 以下        |
|              | 漏电流                              | 初始标准值以下               |

## 尺寸



| $\phi D \times L$ | $\phi d$ | P   | $\alpha$ |
|-------------------|----------|-----|----------|
| 5x6               | 0.5      | 2.0 | 1.0      |
| 5x8               | 0.5      | 2.0 | 1.0      |
| 5x10              | 0.5      | 2.0 | 1.0      |
| 5x14              | 0.5      | 2.0 | 1.0      |
| 5.5x8             | 0.5      | 2.5 | 1.0      |
| 5.5x10            | 0.5      | 2.5 | 1.0      |
| 5.5x14            | 0.5      | 2.5 | 1.0      |
| 5.5x18            | 0.5      | 2.5 | 1.5      |
| 6.3x6             | 0.5      | 2.5 | 1.0      |
| 6.3x8             | 0.5      | 2.5 | 1.2      |
| 6.3x10            | 0.5      | 2.5 | 1.2      |
| 6.3x14            | 0.5      | 2.5 | 1.2      |
| 6.3x18            | 0.5      | 2.5 | 1.2      |
| 8x8               | 0.6      | 3.5 | 1.2      |
| 8x11              | 0.6      | 3.5 | 1.2      |
| 8x14              | 0.6      | 3.5 | 1.5      |
| 8x19              | 0.6      | 3.5 | 1.5      |
| 10x10             | 0.6      | 5.0 | 1.2      |
| 10x12             | 0.6      | 5.0 | 1.2      |
| 10x15             | 0.6      | 5.0 | 1.5      |
| 10x20             | 0.6      | 5.0 | 1.5      |
| 13x20             | 0.6      | 5.0 | 1.5      |

产品性能

| WV<br>(V) | CAP<br>( $\mu$ F) | diameter<br>(mm) | height (mm) | DF<br>(%) | LC ( $\mu$<br>A, 2min) | ESR ( $m\Omega$ )<br>(20°C, 100KHz) | RC (mArms)<br>(105°C, 100KHz) |
|-----------|-------------------|------------------|-------------|-----------|------------------------|-------------------------------------|-------------------------------|
| 10        | 220               | 5                | 8           | 0.1       | 50                     | 16                                  | 1800                          |
| 10        | 680               | 6.3              | 10          | 0.1       | 68                     | 12                                  | 2400                          |
| 16        | 100               | 6.3              | 6           | 0.1       | 50                     | 28                                  | 2300                          |
| 16        | 100               | 6.3              | 8           | 0.1       | 50                     | 24                                  | 2300                          |
| 16        | 180               | 4                | 9           | 0.1       | 50                     | 36                                  | 1200                          |
| 16        | 180               | 5                | 8           | 0.1       | 50                     | 20                                  | 1000                          |
| 16        | 220               | 5                | 8           | 0.1       | 50                     | 20                                  | 1200                          |
| 16        | 270               | 6.3              | 8           | 0.1       | 50                     | 18                                  | 3000                          |
| 16        | 330               | 5.5              | 10          | 0.1       | 53                     | 20                                  | 1800                          |
| 16        | 330               | 6.3              | 8           | 0.1       | 53                     | 20                                  | 1800                          |
| 16        | 470               | 5.5              | 10          | 0.1       | 75                     | 20                                  | 1800                          |
| 16        | 470               | 6.3              | 10          | 0.1       | 75                     | 14                                  | 3500                          |
| 16        | 470               | 8                | 11          | 0.1       | 75                     | 14                                  | 3600                          |
| 16        | 560               | 6.3              | 10          | 0.1       | 90                     | 14                                  | 3500                          |
| 16        | 560               | 8                | 11          | 0.1       | 75                     | 14                                  | 3600                          |
| 16        | 680               | 5.5              | 14          | 0.1       | 109                    | 18                                  | 4000                          |
| 16        | 680               | 6.3              | 12          | 0.1       | 109                    | 14                                  | 3600                          |
| 16        | 680               | 8                | 11          | 0.1       | 109                    | 15                                  | 4500                          |
| 16        | 820               | 8                | 11          | 0.1       | 109                    | 14                                  | 4500                          |
| 16        | 1000              | 8                | 14          | 0.1       | 160                    | 14                                  | 4800                          |
| 16        | 1000              | 10               | 12          | 0.1       | 160                    | 12                                  | 5000                          |
| 16        | 1500              | 10               | 20          | 0.1       | 240                    | 10                                  | 6600                          |
| 16        | 1800              | 10               | 15          | 0.1       | 288                    | 10                                  | 7500                          |
| 16        | 2200              | 10               | 20          | 0.1       | 352                    | 10                                  | 8000                          |
| 25        | 68                | 4                | 9           | 0.1       | 50                     | 40                                  | 1000                          |
| 25        | 82                | 4                | 9           | 0.1       | 50                     | 40                                  | 1000                          |
| 25        | 100               | 4                | 11          | 0.1       | 50                     | 26                                  | 1000                          |
| 25        | 100               | 5                | 6           | 0.1       | 50                     | 26                                  | 2000                          |
| 25        | 100               | 5                | 6           | 0.1       | 50                     | 26                                  | 2000                          |
| 25        | 100               | 5                | 8           | 0.1       | 50                     | 24                                  | 2000                          |
| 25        | 100               | 5                | 8           | 0.1       | 50                     | 26                                  | 2000                          |
| 25        | 100               | 6.3              | 6           | 0.1       | 50                     | 26                                  | 2000                          |
| 25        | 120               | 5                | 10          | 0.1       | 50                     | 24                                  | 2000                          |
| 25        | 220               | 5                | 8           | 0.1       | 55                     | 22                                  | 2200                          |
| 25        | 220               | 5                | 10          | 0.1       | 55                     | 24                                  | 2000                          |
| 25        | 220               | 5.5              | 8           | 0.1       | 55                     | 25                                  | 2200                          |
| 25        | 220               | 6.3              | 8           | 0.1       | 55                     | 20                                  | 2600                          |
| 25        | 330               | 8                | 11          | 0.1       | 83                     | 16                                  | 3000                          |

| WV<br>(V) | CAP<br>( $\mu$ F) | diameter<br>(mm) | height (mm) | DF<br>(%) | LC ( $\mu$<br>A, 2min) | ESR ( $m\Omega$ )<br>(20°C, 100KHz) | RC (mArms)<br>(105°C, 100KHz) |
|-----------|-------------------|------------------|-------------|-----------|------------------------|-------------------------------------|-------------------------------|
| 25        | 470               | 6.3              | 14          | 0.1       | 118                    | 16                                  | 4200                          |
| 25        | 470               | 8                | 11          | 0.1       | 118                    | 16                                  | 4200                          |
| 25        | 470               | 8                | 11          | 0.1       | 118                    | 16                                  | 4200                          |
| 25        | 560               | 8                | 11          | 0.1       | 140                    | 16                                  | 4500                          |
| 25        | 680               | 8                | 14          | 0.1       | 170                    | 16                                  | 4200                          |
| 25        | 820               | 6.3              | 16          | 0.1       | 205                    | 24                                  | 3200                          |
| 25        | 820               | 8                | 14          | 0.1       | 205                    | 16                                  | 4600                          |
| 25        | 820               | 8                | 19          | 0.1       | 205                    | 14                                  | 6800                          |
| 25        | 820               | 10               | 12          | 0.1       | 205                    | 12                                  | 4800                          |
| 25        | 1000              | 10               | 12          | 0.1       | 250                    | 12                                  | 4600                          |
| 25        | 1000              | 10               | 15          | 0.1       | 250                    | 12                                  | 7500                          |
| 25        | 1500              | 10               | 20          | 0.1       | 375                    | 12                                  | 8000                          |
| 35        | 47                | 6.3              | 8           | 0.1       | 50                     | 36                                  | 1800                          |
| 35        | 100               | 6.3              | 8           | 0.1       | 50                     | 30                                  | 2000                          |
| 35        | 220               | 6.3              | 10          | 0.1       | 77                     | 24                                  | 2500                          |
| 35        | 330               | 8                | 11          | 0.1       | 116                    | 18                                  | 3200                          |
| 35        | 470               | 10               | 12          | 0.1       | 165                    | 16                                  | 3500                          |
| 35        | 560               | 8                | 19          | 0.1       | 196                    | 18                                  | 3800                          |
| 35        | 1000              | 10               | 15          | 0.1       | 350                    | 20                                  | 3000                          |
| 50        | 22                | 6.3              | 6           | 0.1       | 50                     | 40                                  | 1800                          |
| 50        | 33                | 6.3              | 8           | 0.1       | 50                     | 35                                  | 2000                          |
| 50        | 47                | 6.3              | 8           | 0.1       | 50                     | 35                                  | 2200                          |
| 50        | 56                | 6.3              | 10          | 0.1       | 50                     | 25                                  | 2300                          |
| 50        | 68                | 6.3              | 10          | 0.1       | 50                     | 22                                  | 2500                          |
| 50        | 82                | 6.3              | 14          | 0.1       | 50                     | 20                                  | 3800                          |
| 50        | 100               | 6.3              | 14          | 0.1       | 50                     | 20                                  | 2900                          |
| 50        | 100               | 8                | 11          | 0.1       | 50                     | 22                                  | 3000                          |
| 50        | 120               | 10               | 12          | 0.1       | 60                     | 20                                  | 3000                          |
| 50        | 150               | 8                | 14          | 0.1       | 75                     | 20                                  | 3200                          |
| 50        | 220               | 8                | 19          | 0.1       | 110                    | 18                                  | 3500                          |
| 50        | 220               | 10               | 12          | 0.1       | 110                    | 20                                  | 3200                          |
| 50        | 390               | 10               | 20          | 0.1       | 195                    | 18                                  | 3900                          |
| 63        | 10                | 6.3              | 6           | 0.1       | 50                     | 45                                  | 1800                          |
| 63        | 10                | 6.3              | 8           | 0.1       | 50                     | 35                                  | 2000                          |
| 63        | 22                | 6.3              | 8           | 0.1       | 50                     | 35                                  | 2200                          |
| 63        | 33                | 6.3              | 10          | 0.1       | 50                     | 25                                  | 2500                          |
| 63        | 47                | 6.3              | 10          | 0.1       | 50                     | 22                                  | 2400                          |
| 63        | 47                | 8                | 8           | 0.1       | 50                     | 22                                  | 2500                          |

| WV<br>(V) | CAP<br>( $\mu$ F) | diameter<br>(mm) | height (mm) | DF<br>(%) | LC ( $\mu$<br>A, 2min) | ESR (m $\Omega$ )<br>(20°C, 100KHz) | RC (mArms)<br>(105°C, 100KHz) |
|-----------|-------------------|------------------|-------------|-----------|------------------------|-------------------------------------|-------------------------------|
| 63        | 56                | 6.3              | 14          | 0.1       | 50                     | 20                                  | 2800                          |
| 63        | 56                | 8                | 11          | 0.1       | 50                     | 22                                  | 2700                          |
| 63        | 68                | 6.3              | 14          | 0.1       | 50                     | 20                                  | 2900                          |
| 63        | 82                | 6.3              | 19          | 0.1       | 52                     | 18                                  | 3000                          |
| 63        | 82                | 8                | 14          | 0.1       | 52                     | 18                                  | 3200                          |
| 63        | 100               | 8                | 19          | 0.1       | 63                     | 18                                  | 3500                          |
| 63        | 100               | 10               | 12          | 0.1       | 63                     | 16                                  | 3500                          |
| 63        | 150               | 10               | 15          | 0.1       | 95                     | 16                                  | 3500                          |
| 63        | 220               | 10               | 15          | 0.1       | 139                    | 18                                  | 3400                          |
| 63        | 220               | 10               | 20          | 0.1       | 139                    | 18                                  | 4000                          |
| 80        | 33                | 8                | 8           | 0.1       | 50                     | 28                                  | 2200                          |
| 80        | 33                | 8                | 11          | 0.1       | 50                     | 25                                  | 2500                          |
| 80        | 47                | 8                | 11          | 0.1       | 50                     | 24                                  | 2800                          |
| 80        | 47                | 8                | 11          | 0.1       | 50                     | 25                                  | 2500                          |
| 80        | 56                | 8                | 14          | 0.1       | 50                     | 22                                  | 3000                          |
| 80        | 56                | 10               | 12          | 0.1       | 50                     | 25                                  | 2500                          |
| 80        | 82                | 8                | 19          | 0.1       | 66                     | 20                                  | 3300                          |
| 80        | 82                | 10               | 12          | 0.1       | 66                     | 24                                  | 2800                          |
| 80        | 100               | 10               | 15          | 0.1       | 80                     | 20                                  | 3300                          |
| 80        | 100               | 10               | 20          | 0.1       | 80                     | 20                                  | 3400                          |
| 80        | 120               | 10               | 15          | 0.1       | 96                     | 20                                  | 3200                          |
| 80        | 150               | 10               | 20          | 0.1       | 120                    | 18                                  | 3800                          |
| 100       | 12                | 6.3              | 10          | 0.1       | 50                     | 35                                  | 2000                          |
| 100       | 15                | 8                | 8           | 0.1       | 50                     | 32                                  | 2200                          |
| 100       | 22                | 8                | 11          | 0.1       | 50                     | 28                                  | 2300                          |
| 100       | 33                | 8                | 11          | 0.1       | 50                     | 26                                  | 2400                          |
| 100       | 39                | 8                | 14          | 0.1       | 50                     | 22                                  | 2800                          |
| 100       | 47                | 8                | 19          | 0.1       | 50                     | 20                                  | 3200                          |
| 100       | 47                | 10               | 10          | 0.1       | 50                     | 28                                  | 2800                          |
| 100       | 47                | 10               | 12          | 0.1       | 50                     | 25                                  | 3000                          |
| 100       | 56                | 10               | 12          | 0.1       | 56                     | 22                                  | 3200                          |
| 100       | 68                | 10               | 15          | 0.1       | 68                     | 22                                  | 3500                          |
| 100       | 82                | 10               | 20          | 0.1       | 82                     | 20                                  | 3800                          |
| 100       | 100               | 10               | 20          | 0.1       | 100                    | 20                                  | 3800                          |
| 100       | 100               | 13               | 16          | 0.1       | 100                    | 20                                  | 3800                          |
| 100       | 120               | 10               | 20          | 0.1       | 120                    | 20                                  | 3800                          |
| 100       | 220               | 13               | 16          | 0.1       | 220                    | 20                                  | 3800                          |
| 160       | 10                | 10               | 12          | 0.1       | 50                     | 50                                  | 1000                          |



东莞市创慧电子有限公司  
DONGGUAN CHUANGHUI ELECTRONICS CO., LTD

## 1. 料号 Product Part No.

|                                 |                                                                                          |                                 |                |             |                            |                  |                         |                              |          |      |      |      |     |
|---------------------------------|------------------------------------------------------------------------------------------|---------------------------------|----------------|-------------|----------------------------|------------------|-------------------------|------------------------------|----------|------|------|------|-----|
| RS                              | 102                                                                                      | M                               | 160            | G120        | R                          | 3Z               | 00                      | ZZ                           |          |      |      |      |     |
| ①系列<br>Series                   | ②容量<br>Capacitance                                                                       | ③容差<br>Capacitance<br>Tolerance | ④电压<br>Voltage | ⑤尺寸<br>Size | ⑥印字颜色<br>Printing<br>color | ⑦成型<br>Finishing | ⑧脚长编码<br>Lead<br>length | ⑨特殊编码<br>Special<br>encoding |          |      |      |      |     |
| ①系列<br>Series                   | RS                                                                                       | RT                              | RL             | RV          | RA                         | RB               | SS                      | SL                           | SV       | SC   | HS   | MS   |     |
| ②容量(μF)<br>Capacitance          | 47                                                                                       | 100                             | 150            | 220         | 330                        | 470              | 560                     | 680                          | 820      | 1000 | 2200 | 3300 | ... |
|                                 | 470                                                                                      | 101                             | 151            | 221         | 331                        | 471              | 561                     | 681                          | 821      | 102  | 222  | 332  | ... |
| ③容差<br>Capacitance<br>Tolerance | C                                                                                        |                                 | K              |             | M                          |                  | A                       |                              | V        |      |      |      |     |
|                                 | -5~+15%                                                                                  |                                 | -10~+10%       |             | -20~+20%                   |                  | 0~+20%                  |                              | -10~+20% |      |      |      |     |
| ④电压(V)<br>Voltage               | 2.5                                                                                      | 4                               | 6.3            | 7.5         | 10                         | 16               | 25                      | 35                           | 50       | 63   | 80   | 90   | 100 |
|                                 | 2R5                                                                                      | 400                             | 6R3            | 7R5         | 100                        | 160              | 250                     | 350                          | 500      | 630  | 800  | 900  | 101 |
| ⑤尺寸(mm)<br>Size                 | 直径                                                                                       | 4                               | 5              | 5.5         | 6.3                        | 8                | 10                      |                              |          |      |      |      |     |
|                                 | 代码                                                                                       | C                               | D              | Z           | E                          | F                | G                       |                              |          |      |      |      |     |
|                                 | 高度                                                                                       | 5                               | 5.8            | 6           | 8                          | 10               | 12                      | 14                           | 16       | 18   | 20   |      |     |
|                                 | 代码                                                                                       | 050                             | 5R8            | 060         | 080                        | 100              | 120                     | 140                          | 160      | 180  | 200  |      |     |
| ⑥印字颜色<br>Printing color         | 颜色                                                                                       | 红色                              | 蓝色             | 黑色          | 白色                         |                  |                         |                              |          |      |      |      |     |
|                                 | 代码                                                                                       | R                               | L              | B           | W                          |                  |                         |                              |          |      |      |      |     |
| ⑦成型<br>Finishing                | 成型大类                                                                                     | 长脚                              | 短脚             | 编带          | 贴片                         |                  |                         |                              |          |      |      |      |     |
|                                 | 代码                                                                                       | 1                               | 2              | 3           | 4                          |                  |                         |                              |          |      |      |      |     |
|                                 | 成型小类                                                                                     | 直切                              | 扩脚切            | K直脚         | K扩脚                        | H01              | H02                     |                              |          |      |      |      |     |
|                                 | 代码                                                                                       | A                               | B              | C           | D                          | E                | F                       |                              |          |      |      |      |     |
| ⑧脚长编码<br>Lead<br>length         | a.长脚品以 00 表示;<br>b.切脚品以个位数和小数点后一位数表示, 如 30 表示脚长 3.0mm;<br>c.编带品以 00 表示;<br>d.座板品以 00 表示; |                                 |                |             |                            |                  |                         |                              |          |      |      |      |     |
| ⑨特殊编码Special encoding           | 作为特殊码保留, 如无特殊要求, 以 ZZ 表示。                                                                |                                 |                |             |                            |                  |                         |                              |          |      |      |      |     |