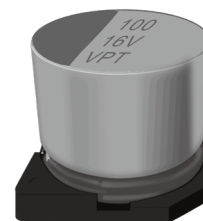


## VPT Series 片式导电聚合物固体铝电解电容器大容量品

Large capacity . Conductive Polymer . For SMD Type

- 大容量 Large capacity
- 高频低阻抗 Low ESR at high frequency range
- 高纹波 High ripple current capability
- 105°C、2000 小时 105°C,2000 hours assured
- 符合 AEC-Q200 AEC-Q200 Compliant

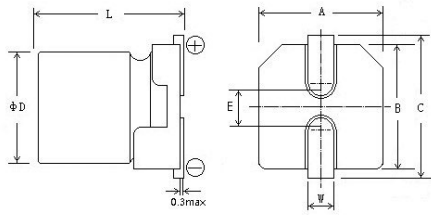
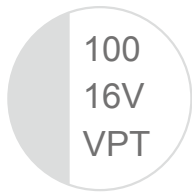


### ◆主要技术性能 Specifications

| 项目<br>Items                                                    | 主要特性<br>Performance Characteristics                                                                                                                               |                                                     |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| 使用温度范围<br>Operating Temperature Range                          | -55°C+105°C                                                                                                                                                       |                                                     |
| 额定电压范围<br>Rated Voltage Range                                  | 2.5 ~ 25V. DC                                                                                                                                                     |                                                     |
| 标称电容量允许偏差<br>Capacitance Tolerance                             | ±20% (120Hz, 20°C)                                                                                                                                                |                                                     |
| 漏电流 (20°C)<br>Leakage Current                                  | 施加额定工作电压 2 分钟, $I \leq 0.2 C_R U_R$ (μA)<br>After 2 minutes application of rated voltage, the leakage current is not more than 0.2 $C_R U_R$                      |                                                     |
| 损耗角正切值 (120Hz 20°C)<br>Dissipation Factor                      | 测试频率 120Hz/ 温度 20°C, 损耗小于规范值<br>Less than the specified value at 120Hz, 20°C                                                                                      |                                                     |
| 等效串联电阻<br>Equivalent Series Resistance                         | 测试频率 100KHz/ 温度 20°C, 等效串联电阻小于规范值<br>Less than the specified value at 100KHz, 20°C                                                                                |                                                     |
| 耐久性<br>Load Life(105°C, 2000hrs)                               | 在 105°C 环境施加额定工作电压 2000 小时后, 电容器的特性符合下表要求。<br>After 2000 hours' application of rated voltage at +105°C, capacitors meet the characteristics requirements listed . |                                                     |
|                                                                | 电容量变化率<br>Capacitance Change                                                                                                                                      | 初始值的 ±25% 以内<br>Within ±25% of the initial value    |
|                                                                | 漏电流值<br>Leakage                                                                                                                                                   | ≤规范值<br>Less than the specified value               |
|                                                                | 损耗角正切值<br>Dissipation Factor                                                                                                                                      | ≤规范值的 150%<br>Less than 150% of the specified value |
|                                                                | 等效串联电阻<br>Equivalent Series Resistance                                                                                                                            | ≤规范值的 150%<br>Less than 150% of the specified value |
| 耐湿温特性<br>Damp heat( Steady state)<br>(60°C, 90~95%RH, 1000hrs) | 在温度为 60°C、湿度为 90~95%RH 的环境中, 1000 小时后, 电容器的特性符合下表要求。<br>60°C, 90 to 95%RH, 1000h, No applied voltage capacitors meet the characteristics requirements listed .    |                                                     |
|                                                                | 电容量变化率<br>Capacitance Change                                                                                                                                      | 初始值的 ±20% 以内<br>Within ±20% of the initial value    |
|                                                                | 漏电流值<br>Leakage                                                                                                                                                   | ≤规范值<br>Less than the specified value               |
|                                                                | 损耗角正切值<br>Dissipation Factor                                                                                                                                      | ≤规范值的 150%<br>Less than 150% of the specified value |
|                                                                | 等效串联电阻<br>Equivalent Series Resistance                                                                                                                            | ≤规范值的 150%<br>Less than 150% of the specified value |

## ◆外形图及尺寸 Case size table

mm



| φD | L    | A   | B    | C    | H       | E±0.2 |
|----|------|-----|------|------|---------|-------|
| 8  | 9.0  | 2.9 | 8.3  | 8.3  | 0.8~1.1 | 3.1   |
| 8  | 10.2 | 2.9 | 8.3  | 8.3  | 0.8~1.1 | 3.1   |
| 8  | 12   | 2.9 | 8.3  | 8.3  | 0.8~1.1 | 3.1   |
| 10 | 10.2 | 3.2 | 10.3 | 10.3 | 0.8~1.1 | 4.5   |
| 10 | 12.5 | 3.2 | 10.3 | 10.3 | 0.8~1.1 | 4.5   |

## ◆编码和规格 Part number &amp; Specifications

| 额定电压<br>Rated Voltage<br>(V) | 标称容量<br>Capacitance<br>(μF) | 产品编码<br>Part Number | 等效串联电阻<br>ESR(mΩ max)<br>100Khz to<br>300Khz | 耐纹波电流<br>(mA rms/ 105°C,<br>100Khz) | 损耗<br>Tanδ (120Hz) | 漏电流<br>(max)(μA) | 尺寸<br>ΦD×L (mm) |
|------------------------------|-----------------------------|---------------------|----------------------------------------------|-------------------------------------|--------------------|------------------|-----------------|
| 2.5                          | 470                         | VPT0E471M0809       | 20                                           | 3300                                | 0.10               | 235              | 8×9             |
|                              | 560                         | VPT0E561M0809       | 18                                           | 3900                                | 0.10               | 280              | 8×9             |
|                              | 680                         | VPT0E681M0809       | 18                                           | 3900                                | 0.10               | 340              | 8×9             |
|                              | 820                         | VPT0E821M0809       | 20                                           | 3300                                | 0.10               | 410              | 8×9             |
|                              | 820                         | VPT0E821M0810       | 17                                           | 4400                                | 0.10               | 410              | 8×10.2          |
|                              | 820                         | VPT0E821M0812       | 16                                           | 4520                                | 0.10               | 410              | 8×12            |
|                              | 1000                        | VPT0E102M0812       | 16                                           | 4520                                | 0.10               | 500              | 8×12            |
|                              | 1500                        | VPT0E152M0810       | 17                                           | 4100                                | 0.10               | 750              | 8×10.2          |
|                              | 1500                        | VPT0E152M1010       | 13                                           | 4700                                | 0.10               | 750              | 10×10.2         |
|                              | 1500                        | VPT0E152M1012       | 12                                           | 5440                                | 0.10               | 750              | 10×12.5         |
|                              | 2200                        | VPT0E222M1012       | 12                                           | 5440                                | 0.10               | 1100             | 10×12.5         |
|                              | 2700                        | VPT0E272M1010       | 12                                           | 4700                                | 0.10               | 1350             | 10×10.2         |
|                              | 3300                        | VPT0E332M1012       | 10                                           | 5500                                | 0.10               | 1650             | 10×12.5         |
| 4                            | 4700                        | VPT0E472M1012       | 10                                           | 5600                                | 0.10               | 2350             | 10×12.5         |
|                              | 220                         | VPT0G221M0809       | 21                                           | 3200                                | 0.10               | 176              | 8×9             |
|                              | 330                         | VPT0G331M0809       | 21                                           | 3400                                | 0.10               | 264              | 8×9             |
|                              | 470                         | VPT0G471M0810       | 17                                           | 4200                                | 0.10               | 376              | 8×10.2          |
|                              | 560                         | VPT0G561M0810       | 13                                           | 4520                                | 0.10               | 448              | 8×10.2          |
|                              | 680                         | VPT0G681M0810       | 17                                           | 4400                                | 0.10               | 544              | 8×10.2          |
|                              | 820                         | VPT0G821M0810       | 17                                           | 4400                                | 0.10               | 656              | 8×10.2          |
|                              | 1000                        | VPT0G102M0812       | 13                                           | 4520                                | 0.10               | 800              | 8×12            |
|                              | 1200                        | VPT0G122M0810       | 17                                           | 4000                                | 0.10               | 960              | 8×10.2          |
|                              | 1500                        | VPT0G152M0812       | 13                                           | 4520                                | 0.10               | 1200             | 8×12            |
|                              | 1500                        | VPT0G152M1010       | 13                                           | 4600                                | 0.10               | 1200             | 10×10.2         |
|                              | 2200                        | VPT0G222M1010       | 13                                           | 4600                                | 0.10               | 1760             | 10×10.2         |
|                              | 2700                        | VPT0G272M1012       | 11                                           | 5300                                | 0.10               | 2160             | 10×12.5         |
| 6.3                          | 3300                        | VPT0G332M1012       | 11                                           | 5400                                | 0.10               | 2640             | 10×12.5         |
|                              | 150                         | VPT0J151M0809       | 22                                           | 3200                                | 0.10               | 189              | 8×9             |
|                              | 220                         | VPT0J221M0809       | 22                                           | 3400                                | 0.10               | 277              | 8×9             |
|                              | 330                         | VPT0J331M0809       | 22                                           | 3100                                | 0.10               | 415              | 8×9             |
|                              | 470                         | VPT0J471M0809       | 22                                           | 3100                                | 0.10               | 592              | 8×9             |
|                              | 560                         | VPT0J561M0809       | 18                                           | 4080                                | 0.10               | 706              | 8×9             |
|                              | 680                         | VPT0J681M0809       | 18                                           | 4080                                | 0.10               | 857              | 8×9             |
|                              | 820                         | VPT0J821M0810       | 12                                           | 4700                                | 0.10               | 1033             | 8×10.2          |
|                              | 1000                        | VPT0J102M0810       | 18                                           | 3800                                | 0.10               | 1260             | 8×10.2          |
|                              | 1000                        | VPT0J102M1012       | 12                                           | 4520                                | 0.10               | 1260             | 10×12.5         |
|                              | 1200                        | VPT0J122M1012       | 12                                           | 5440                                | 0.10               | 1512             | 10×12.5         |
|                              | 1500                        | VPT0J152M1012       | 12                                           | 5440                                | 0.10               | 1890             | 10×12.5         |
|                              | 1800                        | VPT0J182M1010       | 14                                           | 4400                                | 0.10               | 2268             | 10×10.2         |
|                              | 2200                        | VPT0J222M1012       | 12                                           | 5000                                | 0.10               | 2772             | 10×12.5         |
| 10                           | 2700                        | VPT0J272M1012       | 12                                           | 5100                                | 0.10               | 3402             | 10×12.5         |
|                              | 120                         | VPT1A121M0809       | 23                                           | 3000                                | 0.10               | 240              | 8×9             |
|                              | 150                         | VPT1A151M0809       | 23                                           | 3200                                | 0.10               | 300              | 8×9             |

## ◆ 编码和规格 Part number &amp; Specifications

| 额定电压<br>Rated Voltage<br>(V) | 标称容量<br>Capacitance<br>( $\mu\text{F}$ ) | 产品编码<br>Part Number | 等效串联电阻<br>ESR( $\text{m}\Omega$ max)<br>100KHz to<br>300KHz | 耐纹波电流<br>(mA rms/ 105°C,<br>100KHz) | 损耗<br>Tan $\delta$ (120Hz) | 漏电流<br>(max)( $\mu\text{A}$ ) | 尺寸<br>$\Phi\text{D}\times\text{L}$ (mm) |
|------------------------------|------------------------------------------|---------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|-------------------------------|-----------------------------------------|
| 10                           | 220                                      | VPT1A221M0809       | 18                                                          | 4080                                | 0.10                       | 440                           | 8×9                                     |
|                              | 270                                      | VPT1A271M0809       | 18                                                          | 4080                                | 0.10                       | 540                           | 8×9                                     |
|                              | 330                                      | VPT1A331M0809       | 23                                                          | 3100                                | 0.10                       | 660                           | 8×9                                     |
|                              | 330                                      | VPT1A331M0810       | 20                                                          | 3700                                | 0.10                       | 660                           | 8×10.2                                  |
|                              | 470                                      | VPT1A471M0810       | 20                                                          | 3700                                | 0.10                       | 940                           | 8×10.2                                  |
|                              | 560                                      | VPT1A561M0810       | 20                                                          | 3600                                | 0.10                       | 1120                          | 8×10.2                                  |
|                              | 560                                      | VPT1A561M1010       | 15                                                          | 4800                                | 0.10                       | 1120                          | 10×10.2                                 |
|                              | 680                                      | VPT1A681M0812       | 16                                                          | 4520                                | 0.10                       | 1360                          | 8×12                                    |
|                              | 820                                      | VPT1A821M0812       | 14                                                          | 4520                                | 0.10                       | 1640                          | 8×12                                    |
|                              | 820                                      | VPT1A821M1010       | 15                                                          | 4300                                | 0.10                       | 1640                          | 10×10.2                                 |
|                              | 1000                                     | VPT1A102M1012       | 13                                                          | 4800                                | 0.10                       | 2000                          | 10×12.5                                 |
|                              | 1500                                     | VPT1A152M1012       | 13                                                          | 4900                                | 0.10                       | 3000                          | 10×12.5                                 |
| 16                           | 100                                      | VPT1C101M0809       | 18                                                          | 3400                                | 0.10                       | 320                           | 8×9                                     |
|                              | 150                                      | VPT1C151M0809       | 28                                                          | 2800                                | 0.10                       | 480                           | 8×9                                     |
|                              | 180                                      | VPT1C181M0809       | 25                                                          | 3600                                | 0.10                       | 576                           | 8×9                                     |
|                              | 220                                      | VPT1C221M0809       | 18                                                          | 3500                                | 0.10                       | 704                           | 8×9                                     |
|                              | 270                                      | VPT1C271M0809       | 22                                                          | 3300                                | 0.10                       | 864                           | 8×9                                     |
|                              | 330                                      | VPT1C331M0812       | 16                                                          | 4520                                | 0.10                       | 1056                          | 8×12                                    |
|                              | 470                                      | VPT1C471M0812       | 16                                                          | 4520                                | 0.10                       | 1504                          | 8×12                                    |
|                              | 560                                      | VPT1C561M0812       | 14                                                          | 4950                                | 0.10                       | 1792                          | 8×12                                    |
|                              | 560                                      | VPT1C561M1012       | 14                                                          | 4720                                | 0.10                       | 1792                          | 10×12.5                                 |
|                              | 680                                      | VPT1C681M1012       | 14                                                          | 4100                                | 0.10                       | 2176                          | 10×12.5                                 |
|                              | 820                                      | VPT1C821M1012       | 18                                                          | 4200                                | 0.10                       | 2624                          | 10×12.5                                 |
|                              | 1000                                     | VPT1C102M1012       | 14                                                          | 5400                                | 0.10                       | 3200                          | 10×12.5                                 |
| 20                           | 39                                       | VPT1D390M0809       | 45                                                          | 2000                                | 0.10                       | 156                           | 8×9                                     |
|                              | 47                                       | VPT1D470M0809       | 45                                                          | 2000                                | 0.10                       | 188                           | 8×9                                     |
|                              | 56                                       | VPT1D560M0810       | 40                                                          | 2400                                | 0.10                       | 224                           | 8×10.2                                  |
|                              | 68                                       | VPT1D680M0810       | 40                                                          | 2600                                | 0.10                       | 272                           | 8×10.2                                  |
|                              | 82                                       | VPT1D820M0810       | 45                                                          | 2400                                | 0.10                       | 328                           | 8×10.2                                  |
|                              | 100                                      | VPT1D101M0812       | 22                                                          | 3200                                | 0.10                       | 400                           | 8×12                                    |
|                              | 120                                      | VPT1D121M1010       | 35                                                          | 2800                                | 0.10                       | 480                           | 10×10.2                                 |
|                              | 150                                      | VPT1D151M1012       | 20                                                          | 4320                                | 0.10                       | 600                           | 10×12.5                                 |
| 25                           | 10                                       | VPT1E100M0809       | 60                                                          | 1600                                | 0.10                       | 50                            | 8×9                                     |
|                              | 22                                       | VPT1E220M0810       | 50                                                          | 2200                                | 0.10                       | 110                           | 8×10.2                                  |
|                              | 33                                       | VPT1E330M0812       | 30                                                          | 2800                                | 0.10                       | 165                           | 8×12                                    |
|                              | 47                                       | VPT1E470M0812       | 30                                                          | 3000                                | 0.10                       | 235                           | 8×12                                    |
|                              | 47                                       | VPT1E470M1010       | 45                                                          | 2400                                | 0.10                       | 235                           | 10×10.2                                 |
|                              | 56                                       | VPT1E560M1012       | 28                                                          | 3800                                | 0.10                       | 280                           | 10×12.5                                 |
|                              | 100                                      | VPT1E101M0809       | 40                                                          | 2000                                | 0.10                       | 500                           | 8×9                                     |
|                              | 150                                      | VPT1E151M0812       | 35                                                          | 2400                                | 0.10                       | 750                           | 8×12                                    |
|                              | 220                                      | VPT1E221M0812       | 30                                                          | 2400                                | 0.10                       | 1100                          | 8×12                                    |
|                              | 270                                      | VPT1E271M1012       | 28                                                          | 3800                                | 0.10                       | 1350                          | 10×12.5                                 |
|                              | 330                                      | VPT1E331M1012       | 28                                                          | 3800                                | 0.10                       | 1650                          | 10×12.5                                 |
|                              | 470                                      | VPT1E471M1012       | 28                                                          | 3800                                | 0.10                       | 2350                          | 10×12.5                                 |

## ◆ 纹波电流频率补偿系数 Frequency coefficient of allowable ripple current

| 频率 Frequency   | $120\text{Hz} \leq f < 1\text{KHz}$ | $1\text{KHz} \leq f < 10\text{KHz}$ | $10\text{KHz} \leq f < 100\text{KHz}$ | $100\text{KHz} \leq f < 500\text{KHz}$ |
|----------------|-------------------------------------|-------------------------------------|---------------------------------------|----------------------------------------|
| 系数 Coefficient | 0.05                                | 0.30                                | 0.70                                  | 1.00                                   |

## ◆ 纹波电流温度补偿系数 Temperature coefficient of allowable ripple current

| 温度°C Temp.     | +40 | +55 | +70 | +85 | +105 |
|----------------|-----|-----|-----|-----|------|
| 系数 Coefficient | 2.5 | 2.1 | 1.8 | 1.5 | 1.00 |