

VPT Series 片式导电聚合物固体铝电解电容器标准品

Standard Conductive Polymer Aluminum Solid Electrolytic Capacitor of SMD Type

■ 特性 Features

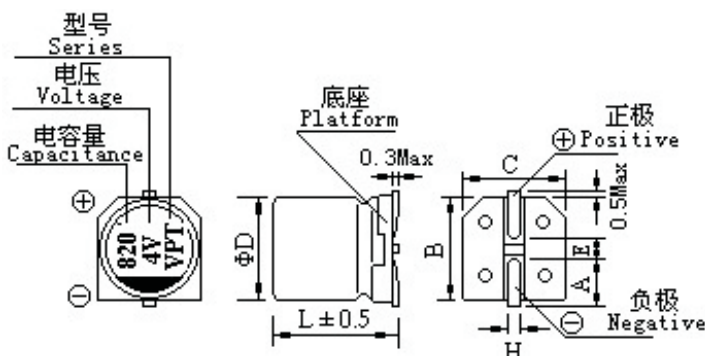
- 高频低阻抗 Low ESR at high frequency range
- 高纹波 High ripple current capability
- 105°C, 2000小时 105°C, 2000 hours assured



■ 主要技术性能 Specifications

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

■ 外形图及尺寸 Case size table



| 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 | 11.8 | 2.9 | 8.3 | 8.3 | 0.8~1.1 | 3.1 |
| 10 | 12.7 | 3.2 | 10.3 | 10.3 | 0.8~1.1 | 4.5 |

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■ 编码和规格 Part Number & Specifications

| 工作电压(V) Rated Voltage | 标称容量 Capacitance (μ F) | 产品编码 Part Number | 等效串联电阻 ESR 100KHz to 300KHz (m Ω max) | 耐纹波电流 100KHz (mA rms)at 105 $^{\circ}$ C | 损耗 Tan δ (120Hz) | 漏电流 (max) (μ A) | 尺寸 Φ D \times L (mm) |
|--------------------------|-----------------------------------|---------------------|---|---|-------------------------------|----------------------------|-----------------------------------|
| 2.5 | 560 | VPT0E561M0808 | 18 | 3900 | 0.10 | 280 | 8 \times 9 |
| | 680 | VPT0E681M0808 | 18 | 3900 | 0.10 | 340 | 8 \times 9 |
| | 820 | VPT0E821M0808 | 18 | 4080 | 0.10 | 410 | 8 \times 9 |
| | 820 | VPT0E821M0812 | 16 | 4520 | 0.10 | 410 | 8 \times 11.8 |
| | 1000 | VPT0E102M0812 | 16 | 4520 | 0.10 | 500 | 8 \times 11.8 |
| | 1500 | VPT0E152M0812 | 16 | 4820 | 0.10 | 750 | 8 \times 11.8 |
| | 1500 | VPT0E152M1012 | 14 | 5440 | 0.10 | 750 | 10 \times 12.7 |
| | 1800 | VPT0E182M1012 | 14 | 5440 | 0.10 | 900 | 10 \times 12.7 |
| | 2200 | VPT0E222M1012 | 14 | 5440 | 0.10 | 1100 | 10 \times 12.7 |
| | 2700 | VPT0E272M1012 | 14 | 5440 | 0.10 | 1350 | 10 \times 12.7 |
| | 3300 | VPT0E332M1012 | 14 | 5440 | 0.10 | 1650 | 10 \times 12.7 |
| | 3900 | VPT0E392M1012 | 14 | 5440 | 0.10 | 1950 | 10 \times 12.7 |
| 4 | 560 | VPT0G561M0808 | 18 | 4080 | 0.10 | 448 | 8 \times 9 |
| | 680 | VPT0G681M0808 | 18 | 4080 | 0.10 | 544 | 8 \times 9 |
| | 820 | VPT0G821M0808 | 18 | 4080 | 0.10 | 656 | 8 \times 9 |
| | 1000 | VPT0G102M0812 | 16 | 4520 | 0.10 | 800 | 8 \times 11.8 |
| | 1200 | VPT0G122M0812 | 16 | 4520 | 0.10 | 960 | 8 \times 11.8 |
| | 1500 | VPT0G152M0812 | 16 | 4520 | 0.10 | 1200 | 8 \times 11.8 |
| | 1500 | VPT0G152M1012 | 14 | 5440 | 0.10 | 1200 | 10 \times 12.7 |
| | 1800 | VPT0G182M1012 | 14 | 5440 | 0.10 | 1440 | 10 \times 12.7 |
| | 2200 | VPT0G222M1012 | 14 | 5440 | 0.10 | 1760 | 10 \times 12.7 |
| | 2700 | VPT0G272M1012 | 14 | 5440 | 0.10 | 2160 | 10 \times 12.7 |
| 6.3 | 470 | VPT0J471M0808 | 18 | 4080 | 0.10 | 592 | 8 \times 9 |
| | 560 | VPT0J561M0808 | 18 | 4080 | 0.10 | 706 | 8 \times 9 |
| | 680 | VPT0J681M0808 | 18 | 4080 | 0.10 | 857 | 8 \times 9 |
| | 820 | VPT0J821M0812 | 16 | 4520 | 0.10 | 1033 | 8 \times 11.8 |
| | 820 | VPT0J821M1012 | 14 | 5100 | 0.10 | 1033 | 10 \times 12.7 |
| | 1000 | VPT0J102M0812 | 18 | 4520 | 0.10 | 1260 | 8 \times 11.8 |
| | 1000 | VPT0J102M1012 | 14 | 4520 | 0.10 | 1260 | 10 \times 12.7 |
| | 1200 | VPT0J122M1012 | 14 | 5440 | 0.10 | 1512 | 10 \times 12.7 |
| | 1500 | VPT0J152M1012 | 14 | 5440 | 0.10 | 1890 | 10 \times 12.7 |
| | 1800 | VPT0J182M1012 | 14 | 5440 | 0.10 | 2268 | 10 \times 12.7 |
| | 2000 | VPT0J202M1012 | 14 | 5440 | 0.10 | 2520 | 10 \times 12.7 |

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|--------------------------|-----------------------------------|---------------------|---|---|-------------------------------|----------------------------|-----------------------------------|
| 10 | 150 | VPT1A151M0808 | 18 | 4080 | 0.10 | 200 | 8 \times 9 |
| | 220 | VPT1A221M0808 | 18 | 4080 | 0.10 | 440 | 8 \times 9 |
| | 270 | VPT1A271M0808 | 18 | 4080 | 0.10 | 540 | 8 \times 9 |
| | 330 | VPT1A331M0808 | 18 | 4080 | 0.10 | 660 | 8 \times 9 |
| | 330 | VPT1A331M0812 | 16 | 4080 | 0.10 | 660 | 8 \times 11.8 |
| | 470 | VPT1A471M0812 | 16 | 4080 | 0.10 | 940 | 8 \times 11.8 |
| | 470 | VPT1A471M1012 | 14 | 4080 | 0.10 | 940 | 10 \times 12.7 |
| | 560 | VPT1A561M0812 | 16 | 4080 | 0.10 | 1120 | 8 \times 11.8 |
| | 560 | VPT1A561M1012 | 14 | 4080 | 0.10 | 1120 | 10 \times 12.7 |
| | 680 | VPT1A681M0812 | 16 | 4520 | 0.10 | 1360 | 8 \times 11.8 |
| | 680 | VPT1A681M1012 | 14 | 4520 | 0.10 | 1360 | 10 \times 12.7 |
| | 820 | VPT1A821M0812 | 16 | 4520 | 0.10 | 1640 | 8 \times 11.8 |
| | 820 | VPT1A821M1012 | 14 | 5100 | 0.10 | 1640 | 10 \times 12.7 |
| | 1000 | VPT1A102M0812 | 16 | 4520 | 0.10 | 2000 | 8 \times 11.8 |
| | 1000 | VPT1A102M1012 | 14 | 5100 | 0.10 | 2000 | 10 \times 12.7 |
| | 1200 | VPT1A122M1012 | 14 | 5100 | 0.10 | 2400 | 10 \times 12.7 |
| 1500 | VPT1A152M1012 | 14 | 5100 | 0.10 | 3000 | 10 \times 12.7 | |
| 1800 | VPT1A182M1012 | 14 | 5100 | 0.10 | 3600 | 10 \times 12.7 | |
| 16 | 100 | VPT1C101M0808 | 18 | 3400 | 0.10 | 320 | 8 \times 9 |
| | 150 | VPT1C151M0808 | 18 | 3500 | 0.10 | 480 | 8 \times 9 |
| | 180 | VPT1C181M0808 | 18 | 3500 | 0.10 | 576 | 8 \times 9 |
| | 180 | VPT1C181M0812 | 16 | 3640 | 0.10 | 576 | 8 \times 11.8 |
| | 220 | VPT1C221M0808 | 18 | 3500 | 0.10 | 704 | 8 \times 9 |
| | 220 | VPT1C221M0812 | 16 | 3640 | 0.10 | 704 | 8 \times 11.8 |
| | 270 | VPT1C271M0808 | 18 | 3500 | 0.10 | 864 | 8 \times 9 |
| | 270 | VPT1C271M0812 | 16 | 3640 | 0.10 | 864 | 8 \times 11.8 |
| | 330 | VPT1C331M0812 | 16 | 4520 | 0.10 | 1056 | 8 \times 11.8 |
| | 330 | VPT1C331M1012 | 14 | 4720 | 0.10 | 1056 | 10 \times 12.7 |
| | 470 | VPT1C471M0812 | 16 | 4520 | 0.10 | 1504 | 8 \times 11.8 |
| | 470 | VPT1C471M1012 | 14 | 4720 | 0.10 | 1504 | 10 \times 12.7 |
| | 560 | VPT1C561M1012 | 14 | 4720 | 0.10 | 1792 | 10 \times 12.7 |
| | 680 | VPT1C681M1012 | 14 | 5100 | 0.10 | 2176 | 10 \times 12.7 |
| | 820 | VPT1C821M1012 | 14 | 5100 | 0.10 | 2624 | 10 \times 12.7 |
| | 1000 | VPT1C102M1012 | 14 | 5100 | 0.10 | 3200 | 10 \times 12.7 |
| 20V | 47 | VPT1D470M0808 | 30 | 3200 | 0.10 | 188 | 8 \times 9 |
| | 47 | VPT1D470M0812 | 25 | 3400 | 0.10 | 188 | 8 \times 11.8 |
| | 68 | VPT1D680M0808 | 28 | 3400 | 0.10 | 272 | 8 \times 9 |
| | 68 | VPT1D680M0812 | 25 | 3600 | 0.10 | 272 | 8 \times 11.8 |
| | 82 | VPT1D820M0808 | 28 | 3400 | 0.10 | 328 | 8 \times 9 |
| | 82 | VPT1D820M0812 | 25 | 3600 | 0.10 | 328 | 8 \times 11.8 |
| | 100 | VPT1D101M0808 | 28 | 3400 | 0.10 | 400 | 8 \times 9 |
| | 100 | VPT1D101M0812 | 25 | 3600 | 0.10 | 400 | 8 \times 11.8 |
| | 150 | VPT1D151M0808 | 28 | 3400 | 0.10 | 600 | 8 \times 9 |
| | 150 | VPT1D151M0812 | 25 | 3600 | 0.10 | 600 | 8 \times 11.8 |
| | 180 | VPT1D181M0812 | 25 | 3900 | 0.10 | 720 | 8 \times 11.8 |
| | 180 | VPT1D181M1012 | 23 | 4500 | 0.10 | 720 | 10 \times 12.7 |
| | 220 | VPT1D221M0812 | 25 | 3900 | 0.10 | 880 | 8 \times 11.8 |
| | 220 | VPT1D221M1012 | 20 | 4500 | 0.10 | 880 | 10 \times 12.7 |
| | 270 | VPT1D271M1012 | 20 | 4500 | 0.10 | 1080 | 10 \times 12.7 |
| | 330 | VPT1D331M1012 | 20 | 4500 | 0.10 | 1320 | 10 \times 12.7 |

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|-----------------------------|-----------------------------------|---------------------|---|--|-------------------------------|----------------------------|---------------------------------|
| 25 | 10 | VPT1E100M0808 | 42 | 1200 | 0.10 | 50 | 8×9 |
| | 22 | VPT1E220M0808 | 38 | 1500 | 0.10 | 110 | 8×9 |
| | 33 | VPT1E330M0812 | 35 | 1600 | 0.10 | 165 | 8×11.8 |
| | 47 | VPT1E470M0812 | 35 | 1600 | 0.10 | 235 | 8×11.8 |
| | 56 | VPT1E560M0812 | 35 | 2300 | 0.10 | 280 | 8×11.8 |
| | 82 | VPT1E820M0812 | 35 | 2300 | 0.10 | 410 | 8×11.8 |
| | 120 | VPT1E121M0808 | 40 | 2000 | 0.10 | 600 | 8×9 |
| | 150 | VPT1E151M0812 | 35 | 2400 | 0.10 | 750 | 8×11.8 |
| | 220 | VPT1E221M1012 | 30 | 2800 | 0.10 | 1100 | 10×12.7 |
| | 270 | VPT1E271M1012 | 30 | 2800 | 0.10 | 1350 | 10×12.7 |
| 330 | VPT1E331M1012 | 30 | 2800 | 0.10 | 1650 | 10×12.7 | |

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

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