

VN series

- Downsizing, Low ESR 小型化, 低等效串联电阻
- Load life of 2000 hours at 105°C 直流负载寿命 105°C-2000 小时
- Compliant to the RoHS2.0 directive 符合 RoHS2.0 规范
- Suitable for Miniaturization of Electronics Device 适合小型化电子设备



Specifications 系列参数

Items 项目	Characteristics 特性	
Rated Voltage Range 额定电压范围	2.5V ~ 35V DC	
Capacitance Range 容量范围	18 ~ 1800μF	
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 105°C, 2000h, Rated voltage applied 寿命: 105°C 加载额定电压连续工作 2000 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 60°C, RH90 ~ 95%, 1000h, Rated voltage applied 耐湿性 60°C, RH90 ~ 95% 加载额定电压连续工作	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 After the recommended soldering conditions 耐焊接热 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 不超过规格值 (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.

如有疑义, 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)

Technical drawing of a capacitor showing side and end views with dimensions:

- Side View Dimensions:
 - Outer Diameter: $D \pm 0.5 \text{ max}$
 - Length: $L \pm 0.3$
 - Terminal Thickness: T_1 (top), T_2 (bottom)
- End View Dimensions:
 - Width: $W \pm 0.2$
 - Height: $H \pm 0.2$
 - Terminal Thickness: T_1 (top), T_2 (bottom)
 - Internal Hole Diameter: ΦD
 - Internal Hole Length: L
 - Internal Hole Width: W
 - Internal Hole Height: H
 - Internal Hole Position: $P \pm 0.2$
 - Internal Hole Radius: R
 - Internal Hole Center-to-Center Distance: C

ΦD	L	W	H	C	P	R	T_1, T_2
5	5.8	5.3	5.3	5.9	1.4	0.5~0.8	0.2max.
5	7.5	5.3	5.3	5.9	1.4	0.5~0.8	0.2max.
6.3	5.8	6.6	6.6	7.2	2.1	0.5~0.8	0.2max.
8	6.9	8.3	8.3	9.0	3.2	0.8~1.1	0.2max.
8	7.7	8.3	8.3	9.0	3.2	0.8~1.1	0.2max.
10	8	10.3	10.3	11.0	4.6	0.8~1.1	0.2max.

Capacitance List 容量对照表

W.V (S.V) SIZE	2.5 (2.9)	4 (4.6)	6.3 (7.2)	10 (12)	16 (18)	25 (29)	35 (40)
5×5.8	220 ~ 390 μ F	150 ~ 220 μ F	120 ~ 180 μ F	82 ~ 120 μ F	56 ~ 100 μ F	39 ~ 56 μ F	18 ~ 33 μ F
5×7.5	390 ~ 470 μ F	220 ~ 330 μ F	180 ~ 270 μ F	120 ~ 180 μ F	82 ~ 120 μ F	56 ~ 82 μ F	33 ~ 47 μ F
6.3×5.8	390 ~ 680 μ F	270 ~ 470 μ F	220 ~ 390 μ F	180 ~ 270 μ F	120 ~ 220 μ F	82 ~ 120 μ F	27 ~ 68 μ F
8×6.9	560 ~ 1200 μ F	390 ~ 680 μ F	330 ~ 680 μ F	220 ~ 390 μ F	150 ~ 330 μ F	120 ~ 220 μ F	47 ~ 100 μ F
8×7.7	820 ~ 1800 μ F	560 ~ 1200 μ F	470 ~ 1000 μ F	390 ~ 560 μ F	220 ~ 470 μ F	180 ~ 330 μ F	68 ~ 150 μ F
10×8					390 ~ 820 μ F	220 ~ 470 μ F	100 ~ 270 μ F

Characteristics List 规格特性表

W.V. 工作电压 (V)	Capacitance 容量 (μ F)	L.C. 漏电流 (μ A,2min)	tg δ 损耗角正切 (120Hz,20℃)	ESR 等效串联电阻 (m Ω ,100kHz)	Rated Ripple Current 额定纹波电流 (mA,r.m.s)	Size 尺寸 Φ D×L(mm)	Part Number 物料编码
2.5	390	300	0.08	16	2200	5×5.8	PVN391M2R5C58TR□□□□
	470	300	0.08	14	2600	5×7.5	PVN471M2R5C75TR□□□□
	560	300	0.08	12	2900	6.3×5.8	PVN561M2R5E58TR□□□□
	1000	500	0.08	12	3400	8×6.9	PVN102M2R5F69TR□□□□
	1500	750	0.08	9	4200	8×7.7	PVN152M2R5F77TR□□□□
4	220	300	0.08	16	2200	5×5.8	PVN221M004C58TR□□□□
	330	300	0.08	16	2600	5×7.5	PVN331M004C75TR□□□□
	330	300	0.08	12	2900	6.3×5.8	PVN331M004E58TR□□□□
	560	448	0.08	12	3400	8×6.9	PVN561M004F69TR□□□□
	1000	800	0.08	9	4200	8×7.7	PVN102M004F77TR□□□□
6.3	150	300	0.08	20	2000	5×5.8	PVN151M6R3C58TR□□□□
	220	300	0.08	18	2300	5×7.5	PVN221M6R3C75TR□□□□
	330	415	0.08	15	2600	6.3×5.8	PVN331M6R3E58TR□□□□
	560	705	0.08	15	3100	8×6.9	PVN561M6R3F69TR□□□□
	820	1000	0.08	10	4000	8×7.7	PVN821M6R3F77TR□□□□
10	100	300	0.08	25	1900	5×5.8	PVN101M010C58TR□□□□
	180	300	0.08	22	2200	5×7.5	PVN181M010C75TR□□□□
	220	440	0.08	18	2500	6.3×5.8	PVN221M010E58TR□□□□
	330	660	0.08	18	3000	8×6.9	PVN331M010F69TR□□□□
	470	940	0.08	12	3800	8×7.7	PVN471M010F77TR□□□□
16	100	320	0.10	30	1700	5×5.8	PVN101M016C58TR□□□□
	100	320	0.10	25	2000	5×7.5	PVN101M016C75TR□□□□
	220	704	0.10	22	2200	6.3×5.8	PVN221M016E58TR□□□□
	330	1000	0.10	22	2600	8×6.9	PVN331M016F69TR□□□□
	470	1000	0.10	15	3300	8×7.7	PVN471M016F77TR□□□□
	680	1000	0.10	15	3600	10×8	PVN681M016G08TR□□□□
25	39	300	0.10	35	1600	5×5.8	PVN390M025C58TR□□□□
	56	300	0.10	30	1900	5×7.5	PVN560M025C75TR□□□□
	100	500	0.10	26	2100	6.3×5.8	PVN101M025E58TR□□□□
	150	750	0.10	26	2500	8×6.9	PVN151M025F69TR□□□□
	220	1000	0.10	20	3100	8×7.7	PVN221M025F77TR□□□□
	330	1000	0.10	20	3300	10×8	PVN331M025G08TR□□□□

W.V. 工作电压 (V)	Capacitance 容量 (μ F)	L.C. 漏电流 (μ A,2min)	tg δ 损耗角正切 (120Hz,20℃)	ESR 等效串联电阻 (m Ω ,100kHz)	Rated Ripple Current 额定纹波电流 (mA,r.m.s)	Size 尺寸 Φ D $\times$ L(mm)	Part Number 物料编码
35	22	300	0.10	50	1400	5 $\times$ 5.8	PVN220M035C58TR□□□□
	33	300	0.10	36	1800	5 $\times$ 7.5	PVN330M035C75TR□□□□
	56	394	0.10	32	1900	6.3 $\times$ 5.8	PVN560M035E58TR□□□□
	82	574	0.10	32	2300	8 $\times$ 6.9	PVN820M035F69TR□□□□
	100	700	0.10	25	2800	8 $\times$ 7.7	PVN101M035F77TR□□□□
	220	1000	0.10	25	3000	10 $\times$ 8	PVN221M035G08TR□□□□

* 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。

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

Frequency 频率	120Hz $\leq$ freq.<1KHz	1KHz $\leq$ freq.<10KHz	10KHz $\leq$ freq.<50KHz	50KHz $\leq$ freq.<100KHz	100KHz $\leq$ freq.<500KHz
Coefficient 系数 (C $\leq$ 47 μ F)	0.05	0.25	0.55	0.80	1.00
Coefficient 系数 (47 μ F < C $\leq$ 1000 μ F)	0.05	0.30	0.70	0.85	1.00
Coefficient 系数 (C>1000 μ F)	0.10	0.33	0.85	1.00	1.00