

**VN series SMD Miniaturization**

- SMD Type, Downsizing
  - Load life of 2000 hours at 105°C
  - Compliant to the RoHS2.0 directive
  - Suitable for Miniaturization of Electronics Device
- 小型化贴片固态产品,产品满足RoHS2.0指令,适合小型化电子设备。



◇ Specifications

Items	Characteristics	
Operating Temp. Range	-55°C ~ +105°C	
Capacitance Range	18 ~ 1800µF	
Capacitance Tolerance	M : ±20%	
Rated Voltage Range	2.5V ~ 35V DC	
Dissipation Factor	Not to exceed the value specified	
Leakage Current	Not to exceed the value specified (after 2 minutes)	
ESR ( 100K~300KHz )	Not to exceed the value specified	
Endurance 105°C , 2000h , at rated voltage	Capacitance Change	Within ±20% of the value before test
	Dissipation Factor	Not to exceed 150% of the value specified
	ESR	Not to exceed 150% of the value specified
	Leakage current	Not to exceed the value specified
Moisture Resistance Stored at 60°C , RH90 ~ 95% , 1000h	Capacitance Change	Within ±20% of the value before test
	Dissipation Factor	Not to exceed 150% of the value specified
	ESR	Not to exceed 150% of the value specified
	Leakage Current	Not to exceed the value specified
Resistance to Soldering Heat After the recommended soldering conditions	Capacitance Change	Within ±5% of the value before test
	Dissipation Factor	Not to exceed the value specified
	ESR	Not to exceed the value specified
	Leakage Current	Not to exceed the value specified (Charging treatment)

※When there is any doubt, measure after charging treatment below.  
Charging treatment: at 105 °C, Rated voltage is loaded for 120 minutes continuously.

◇ Dimensions (Unit:mm)

ΦD+0.5max.	5	6.3	8	
L±0.3	5.8	5.8	6.5	7.7
W±0.2	5.3	6.6	8.3	
H±0.2	5.3	6.6	8.3	
C±0.2	5.9	7.2	9.0	
P±0.2	1.4	2.1	3.2	
R	0.5 ~ 0.8	0.5 ~ 0.8	0.8 ~ 1.1	
T1, T2	0.2Max	0.2Max	0.2Max	

Recommended land pattern

ΦD	5	6.3	8
a	1.4	2.1	2.8
b	3.0	3.5	4.2
c	1.6	1.6	1.9



✧ Capacitance List

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 ~ 390μF	150 ~ 220μF	120 ~ 180μF	82 ~ 120μF	56 ~ 100μF	39 ~ 56μF	18 ~ 33μF
6.3×5.8	390 ~ 680μF	270 ~ 470μF	220 ~ 390μF	180 ~ 270μF	120 ~ 220μF	82 ~ 120μF	27 ~ 68μF
8×6.5	560 ~ 1200μF	390 ~ 680μF	330 ~ 680μF	220 ~ 390μF	150 ~ 330μF	120 ~ 220μF	47 ~ 100μF
8×7.7	820 ~ 1800μF	560 ~ 1200μF	470 ~ 1000μF	390 ~ 560μF	220 ~ 470μF	180 ~ 330μF	68 ~ 150μF

✧ Characteristics List

W.V (V)	Capacitance (μF)	L.C. (μA,2min)	tgδ (120Hz,20℃)	ESR (mΩ,100kHz)	Rated Ripple Current(mA,r.m.s)	Size ΦD×L(mm)	Part Number
2.5	390	100	0.08	16	3200	5×5.8	PVN391M2R5C58TR□□□□
	560	140	0.08	12	3800	6.3×5.8	PVN561M2R5E58TR□□□□
	1000	250	0.08	12	3900	8×6.5	PVN102M2R5F65TR□□□□
	1500	375	0.08	9	4800	8×7.7	PVN152M2R5F77TR□□□□
4	220	100	0.08	16	3100	5×5.8	PVN221M004C58TR□□□□
	330	132	0.08	12	3700	6.3×5.8	PVN331M004E58TR□□□□
	560	224	0.08	12	3800	8×6.5	PVN561M004F65TR□□□□
	1000	400	0.08	9	4700	8×7.7	PVN102M004F77TR□□□□
6.3	150	100	0.08	20	2900	5×5.8	PVN151M6R3C58TR□□□□
	330	207.9	0.08	15	3500	6.3×5.8	PVN331M6R3E58TR□□□□
	560	352.8	0.08	15	3600	8×6.5	PVN561M6R3F65TR□□□□
	820	516.6	0.08	10	4500	8×7.7	PVN821M6R3F77TR□□□□
10	100	100	0.08	20	2800	5×5.8	PVN101M010C58TR□□□□
	220	220	0.08	15	3400	6.3×5.8	PVN221M010E58TR□□□□
	330	330	0.08	15	3500	8×6.5	PVN331M010F65TR□□□□
	470	470	0.08	10	4400	8×7.7	PVN471M010F77TR□□□□
16	100	160	0.10	30	1700	5×5.8	PVN101M016C58TR□□□□
	220	352	0.10	25	2400	6.3×5.8	PVN221M016E58TR□□□□
	330	528	0.10	25	2600	8×6.5	PVN331M016F65TR□□□□
	470	752	0.10	15	3200	8×7.7	PVN471M016F77TR□□□□
25	39	100	0.10	40	1400	5×5.8	PVN390M025C58TR□□□□
	100	250	0.10	28	2100	6.3×5.8	PVN101M025E58TR□□□□
	150	375	0.10	25	2400	8×6.5	PVN151M025F65TR□□□□
	220	550	0.10	20	2700	8×7.7	PVN221M025F77TR□□□□
35	22	100	0.10	50	1300	5×5.8	PVN220M035C58TR□□□□
	56	196	0.10	35	2000	6.3×5.8	PVN560M035E58TR□□□□
	82	287	0.10	33	2300	8×6.5	PVN820M035F65TR□□□□
	100	350	0.10	25	2600	8×7.7	PVN101M035F77TR□□□□

\* For the last 4 digits of the part number, please refer to the part number system on page 125.

✧ Frequency Coefficient for Ripple Current

Frequency	120Hz≤freq.<1KHz	1KHz≤freq.<10KHz	10KHz≤freq.<50KHz	50KHz≤freq.<100KHz	100KHz≤freq.<300KHz
Coefficient (C≤1000μF)	0.05	0.3	0.7	0.85	1
Coefficient (C>1000μF)	0.1	0.33	0.85	1	1