

## VT series High temperature



- SMD Type, Low height
- Load life of 4000 hours at 125°C
- Compliant to the RoHS2.0 directive
- Suitable for Thinness of electronic products

低高度贴片固态产品, 最高工作温度 125°C, 产品满足 RoHS2.0 指令, 适合电子设备薄型化。

### ◇ Specifications

Items	Characteristics	
Operating Temp. Range	-55°C ~ +125°C	
Capacitance Range	8.2 ~ 330μF	
Capacitance Tolerance	M : ±20%	
Rated Voltage Range	2.5V ~ 63V 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 125°C · 4000h · 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 85°C · RH85% · 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 125 °C, Rated voltage is loaded for 60 minutes continuously.

### ◇ Dimensions (Unit:mm)

ΦD+0.5max.	6.3				8		10	
L -0.3/+0	4.5	5.8	7.7	9	9.2	12.2	10.5	12.7
W±0.2	6.6				8.3		10.3	
H±0.2	6.6				8.3		10.3	
C±0.2	7.2				9.0		11.0	
P±0.2	2.1				3.2		4.6	
R	0.5 ~ 0.8				0.8 ~ 1.1		0.8 ~ 1.1	
T1, T2	0.2Max							

#### Recommended land pattern

ΦD	6.3.	8	10
a	2.1	2.8	4.3
b	3.5	4.2	4.4
c	1.6	1.9	1.9

✧ **Capacitance List**

W.V (S.V) SIZE	2.5 (2.9)	6.3 (7.2)	16 (18)	25 (29)	35 (40)	50 (58)	63 (72)
6.3×4.5	220 ~ 330μF	150 ~ 220μF	56 ~ 100μF	39 ~ 47μF	22 ~ 33μF	10 ~ 15μF	8.2 ~ 10μF
6.3×5.8	390 ~ 560μF	220 ~ 390μF	100 ~ 180μF	47 ~ 68μF	27 ~ 47μF	15 ~ 22μF	10 ~ 15μF
6.3×7.7	560 ~ 820μF	390 ~ 560μF	180 ~ 270μF	68 ~ 100μF	47 ~ 68μF	22 ~ 33μF	15 ~ 22μF
6.3×9	680 ~ 1000μF	470 ~ 680μF	220 ~ 330μF	82 ~ 120μF	56 ~ 82μF	27 ~ 39μF	18 ~ 27μF
8×9.2	1000 ~ 1500μF	560 ~ 1200μF	270 ~ 560μF	100 ~ 220μF	82 ~ 120μF	39 ~ 56μF	27 ~ 47μF
8×12.2	1500 ~ 2200μF	820 ~ 1500μF	390 ~ 820μF	150 ~ 270μF	100 ~ 180μF	56 ~ 82μF	39 ~ 68μF
10×10.5		1000 ~ 1800μF	470 ~ 820μF	180 ~ 330μF	120 ~ 220μF	56 ~ 120μF	47 ~ 82μF
10×12.7		1200 ~ 2200μF	680 ~ 1000μF	220 ~ 470μF	180 ~ 330μF	82 ~ 150μF	68 ~ 120μF

✧ **Characteristics List**

W.V. (V)	Capacitance (μF)	L.C. (μA,2min)	tgδ (120Hz,20°C)	ESR (mΩ,100kHz)	Rated Ripple Current(mA,r.m.s)		Size ΦD×L(mm)	Part Number
					105°C < T <sub>x</sub> ≤ 125°C	T <sub>x</sub> ≤ 105°C		
2.5	330	700	0.08	18	1250	3500	6.3×4.5	PVT331M2R5E45TR□□□□
	560	140	0.08	12	1350	3800	6.3×5.8	PVT561M2R5E58TR□□□□
	820	205	0.08	9	1450	4500	6.3×7.7	PVT821M2R5E77TR□□□□
	1000	250	0.08	7	1740	5400	6.3×9	PVT102M2R5E09TR□□□□
	1200	300	0.08	7	1810	5600	8×9.2	PVT122M2R5F92TR□□□□
	1800	450	0.08	7	1970	6100	8×12.2	PVT182M2R5F1CTR□□□□
6.3	220	700	0.08	20	1000	2700	6.3×4.5	PVT221M6R3E45TR□□□□
	330	207.9	0.08	15	1160	3600	6.3×5.8	PVT331M6R3E58TR□□□□
	470	296.1	0.08	12	1320	4100	6.3×7.7	PVT471M6R3E77TR□□□□
	560	352.8	0.08	9	1480	4600	6.3×9	PVT561M6R3E09TR□□□□
	820	516.6	0.08	8	1700	5300	8×9.2	PVT821M6R3F92TR□□□□
	1200	756	0.08	8	1780	5500	8×12.2	PVT122M6R3F1CTR□□□□
	1500	945	0.08	8	1930	5600	10×10.5	PVT152M6R3G1ETR□□□□
	2200	1000	0.10	8	2060	6000	10×12.7	PVT222M6R3G1DTR□□□□
16	100	800	0.10	40	810	2100	6.3×4.5	PVT101M016E45TR□□□□
	100	160	0.10	25	900	2400	6.3×5.8	PVT101M016E58TR□□□□
	220	352	0.10	15	1000	3100	6.3×7.7	PVT221M016E77TR□□□□
	270	432	0.10	15	1100	3400	6.3×9	PVT271M016E09TR□□□□
	330	528	0.10	12	1320	4100	8×9.2	PVT331M016F92TR□□□□
	560	896	0.10	12	1550	4800	8×12.2	PVT561M016F1CTR□□□□
	680	1000	0.10	12	1640	5100	10×10.5	PVT681M016G1ETR□□□□
	1000	1000	0.10	10	1860	5400	10×12.7	PVT102M016G1DTR□□□□
25	39	293	0.10	45	720	1800	6.3×4.5	PVT390M025E45TR□□□□
	56	100	0.10	28	840	2100	6.3×5.8	PVT560M025E58TR□□□□
	82	115	0.10	20	900	2800	6.3×7.7	PVT820M025E77TR□□□□
	100	125	0.10	20	1000	3100	6.3×9	PVT101M025E09TR□□□□
	220	275	0.10	15	1220	3800	8×9.2	PVT221M025F92TR□□□□
	270	338	0.10	15	1450	4500	8×12.2	PVT271M025F1CTR□□□□
	330	413	0.10	15	1550	4800	10×10.5	PVT331M025G1ETR□□□□

W.V. (V)	Capacitance ( $\mu$ F)	L.C. ( $\mu$ A,2min)	tg $\delta$ (120Hz,20°C)	ESR (m $\Omega$ ,100kHz)	Rated Ripple Current(mA,r.m.s)		Size $\Phi$ D×L(mm)	Part Number
					105°C < T $\times$ ≤ 125°C	T $\times$ ≤ 105°C		
25	470	588	0.10	12	1760	5100	10×12.7	PVT471M025G1DTR□□□□
35	22	231	0.10	55	625	1500	6.3×4.5	PVT220M035E45TR□□□□
	47	100	0.10	35	690	2000	6.3×5.8	PVT470M035E58TR□□□□
	56	100	0.10	30	710	2200	6.3×7.7	PVT560M035E77TR□□□□
	82	143.5	0.10	30	725	2250	6.3×9	PVT820M035E09TR□□□□
	100	175	0.10	22	900	2800	8×9.2	PVT101M035F92TR□□□□
	180	300	0.10	20	970	3000	8×12.2	PVT181M035F1CTR□□□□
	220	300	0.10	20	1000	3100	10×10.5	PVT221M035G1ETR□□□□
	330	300	0.10	20	1100	3200	10×12.7	PVT331M035G1DTR□□□□
50	10	150	0.10	65	510	1200	6.3×4.5	PVT100M050E45TR□□□□
	22	100	0.10	55	590	1700	6.3×5.8	PVT220M050E58TR□□□□
	33	100	0.10	45	660	1900	6.3×7.7	PVT330M050E77TR□□□□
	39	100	0.10	45	690	2000	6.3×9	PVT390M050E09TR□□□□
	56	140	0.10	22	840	2600	8×9.2	PVT560M050F92TR□□□□
	82	250	0.10	20	900	2800	8×12.2	PVT820M050F1CTR□□□□
	100	300	0.10	20	940	2900	10×10.5	PVT101M050G1ETR□□□□
	150	300	0.10	20	1030	3000	10×12.7	PVT151M050G1DTR□□□□
63	10	189	0.10	80	510	1200	6.3×4.5	PVT100M063E45TR□□□□
	10	100	0.10	60	590	1700	6.3×5.8	PVT100M063E58TR□□□□
	22	100	0.10	50	660	1900	6.3×7.7	PVT220M063E77TR□□□□
	27	100	0.10	45	690	2000	6.3×9	PVT270M063E09TR□□□□
	47	148	0.10	22	840	2600	8×9.2	PVT470M063F92TR□□□□
	68	215	0.10	20	900	2800	8×12.2	PVT680M063F1CTR□□□□
	82	258	0.10	20	940	2900	10×10.5	PVT820M063G1ETR□□□□
	100	315	0.10	20	1030	3000	10×12.7	PVT101M063G1DTR□□□□

\* 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≤1000 $\mu$ F)	0.05	0.3	0.7	0.85	1
Coefficient (C>1000 $\mu$ F)	0.1	0.33	0.85	1	1