

CHIP TANTALUM CAPACITOR - SMD

Suntan®

SOLID ELECTROLYTE, HIGH VOLUMETRIC EFFICIENCY, STABLEELECTRIC PERFORMANCES

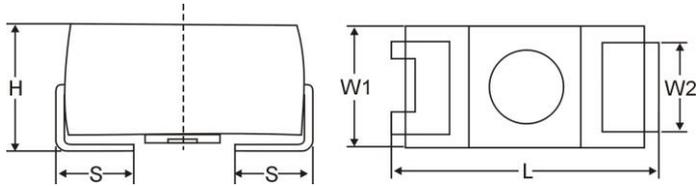
TS20

FEATURES

- Molded case available in six case codes
- Compatible with all popular “High Volume” automatic pick and equipment
- Optical character recognition qualified
- RoHS Compliance & Lead Free Terminations.

SPECIFICATIONS

Rated Voltage	D.C. 4V ~ 50V
Operating Temperature Range	-55 °C to +125 °C (>85 °C with rated voltage derating.)
Capacitance Range	0.1µF to 470µF
Capacitance Tolerance	±20%(M), ±10%(K), ±5%(J) (For special order)
DC Leakage Current	$I_o \leq 0.01 C_R V_R$ or 0.5µA (whichever is greater)
Load Life	85°C, After applying rated voltage for 2000 hours at 85°C, Capacitance change: within ±10% of the initial value Dissipation factor: Not more than 150% of the specified value
Case Sizes and Dimensions	Please see Table 2
Dissipation Factor at 20 °C	Please see Table 1
Temperature Characteristics	Please see Table 1



TEMPERATURE CHARACTERISTICS

Table 1

Capacitance (µF)	Capacitance Change (%)			DF Max. (%)				DCL Max. (µA)	
	-55°C	+85°C	+125°C	-55°C	+25°C	+85°C	+125°C	+85°C	+125°C
≤1.0	±10	±10	±12	6	4	6	6	+10 I _o	+12 I _o
1.5 ~ 68				10	6	10	10		
100 ~ 470				14	12	14	14		

DIMENSIONS - MILLIMETERS

Unit:mm Table 2

Case Size	L ±0.4	W1 ±0.4	H ±0.4	S ±0.3	W2	
P	2012	2.0	1.2	1.2	0.5	1.0±0.2
A	3216	3.2	1.6	1.6	0.8	1.2±0.2
B	3528	3.5	2.8	1.9	0.8	2.2±0.2
C	6032	6.0	3.2	2.5	1.3	2.2±0.2
D	7343	7.3	4.3	2.8	1.3	2.4±0.2
E	7343	7.3	4.3	4.3	1.3	2.4±0.5

LOAD VOLTAGE

Product model	Main materials of cathode	Load requirements after derating	Explain
TS20	MnO ₂	≤50%U _R	General application
		≤30%U _R	Power circuit or low impedance circuit

Note: U_R is the rated voltage under the condition of temperature ≤ 85 °C, When the temperature is higher than 85 °C, temperature derating should be considered.

TEMPERATURE DERATING

Temperature range	Derating calculation formula	Explain	
85°C ~ 125°C	$U_T = (U_R - U_C) * (T - 85) / 40$	U _R	It is the rated voltage under the condition of temperature ≤ 85 °C
		U _C	It is the rated voltage at 125 °C
		U _T	It is the voltage to be reduced between 85 °C and 125 °C

TS20

Rated Voltage, Nominal Capacitance and Case Sizes

Table 3

U_R	$V \leq +85^\circ\text{C}$	4	6.3	10	16	20	25	35	50
Rated Voltage Marking		G	J	A	C	D	E	V	T
Voltage Derating (V_C) $\leq +125^\circ\text{C}$		2.7	4	6.3	10	15	17	23	33
Surge Voltage $\leq +85^\circ\text{C}$ (V_S)		5.2	8	13	20	26	32	46	65
Surge Voltage $\leq +125^\circ\text{C}$ (V_S)		3.4	5	8	13	16	20	28	40
Capacitance (μF)	Marking	Case Size (standard / miniature / Super miniature)							
0.1	104							A	A/B
0.15	154							A	A/B
0.22	224							A	A/B
0.33	334						A	A	A/B
0.47	474				P	P	A	A/B	A/C
0.68	684			P	A/P	A/P	A	A/B	A/C
1.0	105	A	A	A/P	A/P	A	A	A/B	C
1.5	155	A/P	A	A/P	A	A/B	A/B	A/B/C	D
2.2	225	A/P	A	A/P	A/B	A/B	A/B	B/C	C/D
3.3	335	A/P	A	A/P	A/B	A/B	B/C	C/D	D
4.7	475	A/P	A	A/B/P	A/B	A/B/C	B/C	C/D	D
6.8	685	A/P	A	A/B	A/B	B/C	B/C	C/D	D
10	106	A/P	A/B	A/B	A/B/C	B/C/D	B/C/D	C/D	
15	156	A/B	A	A/B/C	B/C	C	C/D	D/E	
22	226	A/B	A/B/C	A/B/C	B/C/D	C/D	D		
33	336	B/C	A/B	B/C/D	C/D	C/D	D/E		
47	476	B/C	B/C	B/C/D	C/D	D/E	D/E		
68	686	B/C	B/C/D	C/D	D	D/E			
100	107	B/C	B/C	C/D	D/E				
150	157	C/D/E	C/D	D/E	E				
220	227	C/D/E	C/D	D					
330	337	E	D						

Note: Specifications are subject to change without notice. For more details and updates, please visit our website.