

# CHIP TANTALUM CAPACITOR - SMD

**Suntan®**

SOLID ELECTROLYTE, HIGH VOLUMETRIC EFFICIENCY, STABLEELECTRIC PERFORMANCES

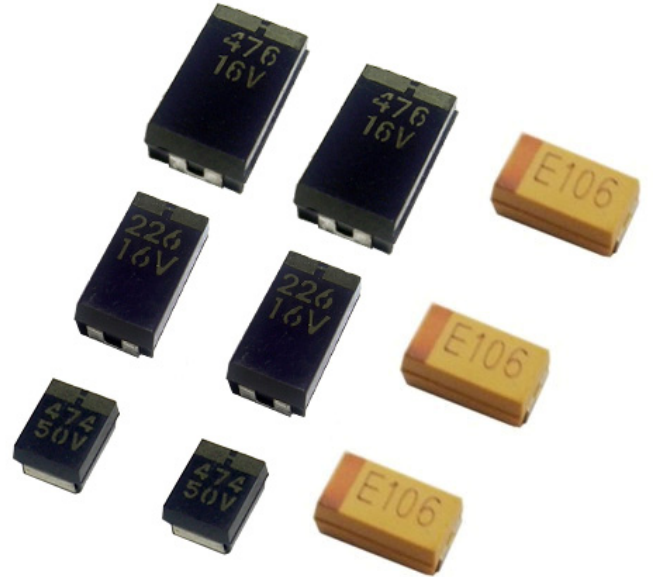
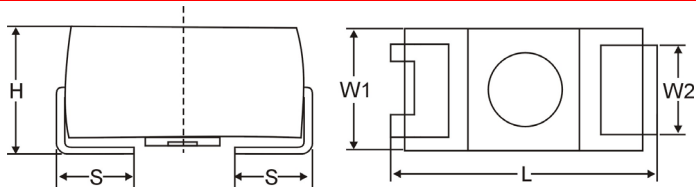
## TS20

### 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				6	4	6	6	+10 I <sub>o</sub>	+12 I <sub>o</sub>
1.5 ~ 68	±10	±10	±12	10	6	10	10		
100 ~ 470				14	12	14	14		

### DIMENSIONS - MILLIMETERS

Unit:mm Table 2

Case Size	L ±0.3	W1±0.3	H ±0.3	S ±0.3	W2±0.2
P	2012	2.0	1.2	1.2	0.5
A	3216	3.2	1.6	1.6	0.8
B	3528	3.5	2.8	1.9	0.8
C	6032	6.0	3.2	2.5	1.3
D	7343	7.3	4.3	2.8	1.3
E	7343	7.3	4.3	4.0	1.3

### Rated Voltage, Nominal Capacitance and Case Sizes

Table 3

U <sub>R</sub>	V	4	6.3	10	16	20	25	35	50
Voltage Derating (V)		2.5	4	6.3	10	13	16	23	33
Surge Voltage ≤ +85°C (V)		5	8	13	20	26	32	46	65
Surge Voltage ≤ +125°C (V)		3.4	5.0	9	12	16	20	26	38
Capacitance (µF)	Case Size (standard / miniature / Super miniature)								
0.1								A	A/B
0.15								A	A/B
0.22								A	A/B
0.33							A	A	A/B
0.47					P	P	A	A/B	A/C
0.68				P	A/P	A/P	A	A/B	A/C
1.0	A	A	A/P	A/P	A	A	A	A/B	C
1.5	A/P	A	A/P	A	A/B	A/B	A/B	A/B/C	D
2.2	A/P	A	A/P	A/B	A/B	A/B	A/B	B/C	C/D
3.3	A/P	A	A/P	A/B	A/B	A/B	B/C	C/D	D
4.7	A/P	A	A/B/P	A/B	A/B/C	A/B/C	B/C	C/D	D
6.8	A/P	A	A/B	A/B	A/B	B/C	B/C	C/D	D
10	A/P	A/B	A/B	A/B	A/B/C	B/C/D	B/C/D	C/D	
15	A/B	A	A/B/C	B/C	C	C	C/D	D/E	
22	A/B	A/B/C	A/B/C	B/C/D	C/D	C/D	D		
33	B/C	A/B	B/C/D	C/D	C/D	C/D	D/E		
47	B/C	B/C	B/C/D	C/D	D/E	D/E	D/E		
68	B/C	B/C/D	C/D	D	D/E				
100	B/C	B/C	C/D	D/E					
150	C/D/E	C/D	D/E	E					
220	C/D/E	C/D	D						
330	E	D							

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

Marking Code for Case Size P