

Vatronics Technologies Limited

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VTS Series SMD Tantalum Capacitors

Vatronics SMD tantalum capacitors. There are S, A, B, C, D, E six sizes. They have lower ESR compared with the radial tantalum capacitors. The product is compatible with automatic pack and place equipment. Suitable for suitable for electronic communication, computer and military and so on.



Operating temperature: $-55^{\circ} \sim +125^{\circ}$ (above 85°C , use derated voltage).

Capacitance Tolerance: $\pm 20\% \pm 10\%$,

Capacitance Range: $0.1 \mu\text{F} \sim 470 \mu\text{F}$.

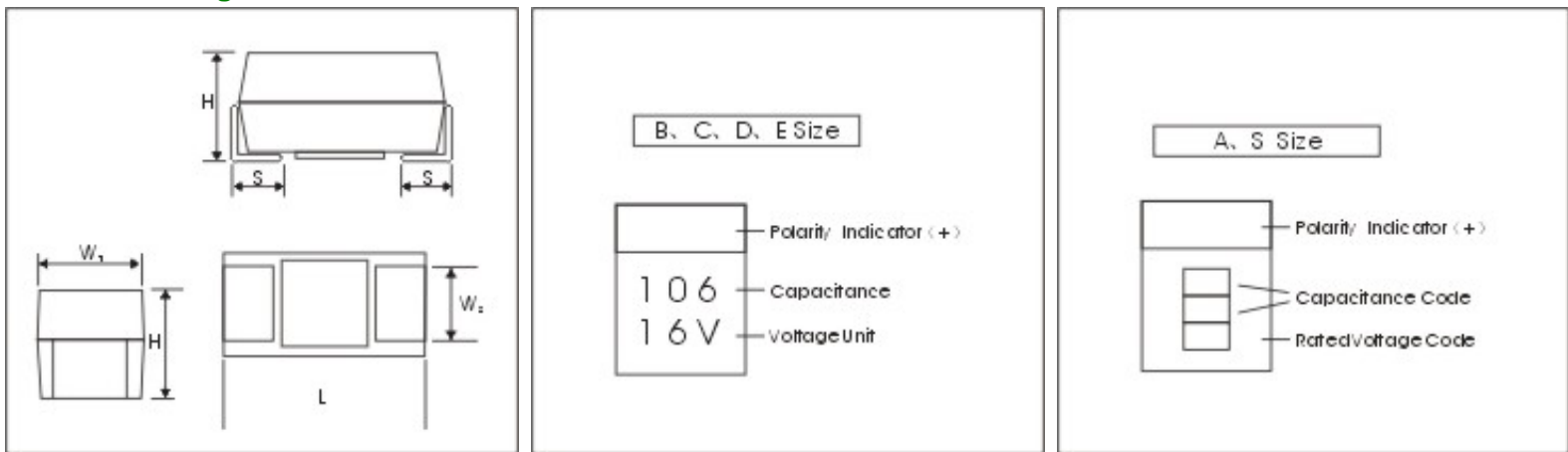
Voltage Rating: $4\text{V} \sim 50\text{V}$.

DC leakage current(20): $I_0 \leq 0.01 C_R U_R$ or $0.5 \mu\text{A}$ (whichever is greater).

Life test: 2000 hours.

Reliability: 2% per 1000h at 85°C with $0.1 \Omega/\text{V}$ series impedance 60% confidence level.

Outline Drawings



Vatronics Dimensions-Millimeters

Case Size	$L \pm 0.2$	$W1 \pm 0.2$	$H \pm 0.2$	$S \pm 0.2$	$W2 \pm 0.1$
S	2.0 ± 0.2	1.20 ± 0.2	1.20 ± 0.2	0.5 ± 0.3	1.2 ± 0.1
A	3.2 ± 0.2	1.6 ± 0.2	1.6 ± 0.2	0.8 ± 0.3	1.2 ± 0.1
B	3.5 ± 0.2	2.8 ± 0.2	1.9 ± 0.2	0.8 ± 0.3	2.2 ± 0.1
C	6.0 ± 0.3	3.2 ± 0.3	2.5 ± 0.3	1.3 ± 0.3	$2.2 (\pm 0.1)$
D	7.3 ± 0.3	4.3 ± 0.3	2.8 ± 0.3	1.3 ± 0.3	2.4 ± 0.1
E	7.3 ± 0.3	4.3 ± 0.3	4.0 ± 0.3	1.3 ± 0.3	2.4 ± 0.1

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Vatronics Rated Voltage, Voltage Derating, Surge Voltage and Normal Capacitance

Rated Voltage(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 (V+85C)	5	8	13	20	26	32	46	65
Surge Voltage (V+125C)	3.4	5	9	12	16	20	26	38
Capacitance	Case size•Standard/Extended•							
0.1					S		A	A
0.15					S		A	B/A
0.22					S		A	B
0.33					S		A	B
0.47				S	S	A	B/A	C
0.68			S	S	A/S	A	B	C
1.0		A/S	A/S	A/S	A	B/A	B	C
1.5	S	A/S	A/S	A/S	B/A	B	C/B	D/C
2.2	S	A/S	A/S	B/A	B/A	B	C	D
3.3	A/S	A/S	B/A	B/A	C/B	C	D/C	D
4.7	A/S	B/A	B/A	B/A	D/C	C	D/C	E
6.8	B/A	B/A	B/A	C/B	D/C	D/C	D	
10	B/A	B/A	B/A	C/B	D/C	D/C	D	
15	B/A	C/B	C/B	C	D	D	E	
22	C/B	C/B	C/B	D/C	D	D	E	
33	C/B	D/C	D/C	D/C	D	E		
47	D/C	D/C	D/C	D/C	E/D			
68	D/C	D/C	D	D	E			
100	D/C	D/C	D	D				
150	D/C	D	E	E				
220	D	E	E	E				
330	E	E	E					
470	E							

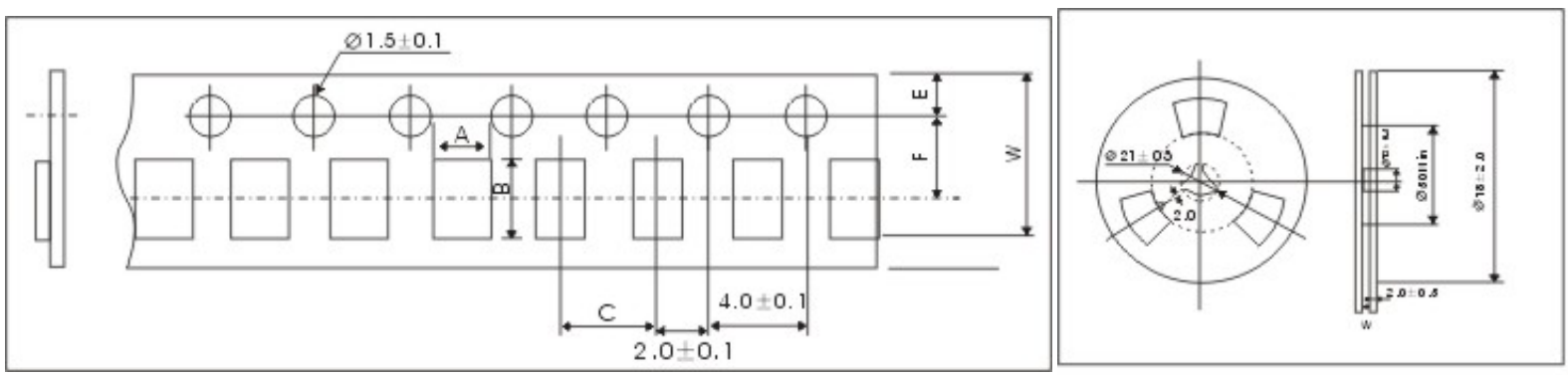
Vatronics Temperature Characteristics

Capacitance•uF•	Cap. Change			DF Max.				DCL Max.	
	-55C	+85C	+125C	-55C	+20C	+85C	+125C	+85C	+125C
≤1.0	-10	+10	+12	6	4	6	6	10I ₀	12I ₀
1.5-68				10	6	10	10		
100-470				12	8	12	12		

Vatronics ESR Of Capacitor

Rated Voltage	4	6.3	10	16	20	25	35	50
Capacitance	Case size•Standard/Extended•							
0.1					25		24	22
0.15					25		21	17/15
0.22					25		18	14
0.33					25		15	12
0.47				25	25	14	10/12	8
0.68			30	25	12/25	10	8	7
1.0		14/25	13/25	11/20	9	7/8	6.5	5.5
1.5	30	12/25	10	8/12	5/6.5	5	4.5/5.2	4/4.5
2.2	25	9/20	7	5.5/6.5	3.5/5.3	4.5	3.5	2.5
3.3	9/20	7/12	5.0/5.5	4.5/5	2.5/3	2.8	2.0/2.5	2.0
4.7	7.5	5/6	4/5	3.5/4	2.5/2.8	2.4	1.5/2.2	1.4
6.8	6/6.5	4/5	3/4	2.5/3.5	1.8/2	1.4/2	1.3	
10	4/6	3/4	2.5/3	2/2.8	1.3	1.2/1.8	1	
15	3.5/4	2.5/3.2	2.2/2.8	1.8	1.1	1	0.9	
22	2.5/3.2	2/2.5	1.8/2.4	1.1/1.6	0.9	0.9	0.9	
33	2.2/2.8	1.3/1.8	1.1/1.6	0.9/1.5	0.9	0.9		
47	1.3/1.8	1.1/1.6	0.9/1.2	0.9/1.4	0.9/0.9			
68	1.1/1.6	0.9/1.6	0.9	0.9	0.9			
100	0.9/1.3	0.9/1.4	0.9	0.9				
150	0.9	0.9	0.9	0.9				
220	0.9	0.9	0.9	0.9				
330	0.9	0.9	0.9					
470	0.9							

Vatronics Tape and Reel Dimensions•



Case size	W			Qty. per reel
A B	+1.5	8.4	-0.00	2000
C D	+2.00	12.4	-0.00	500
E	+2.00	12.4	-0.00	400
S	+2.00	12.4	-0.00	2500

Vatronics Capacitor markings•

Direct designation is used for case sizes B•C•D•E while code designation is used for case size A and S.

Rated Voltage Code

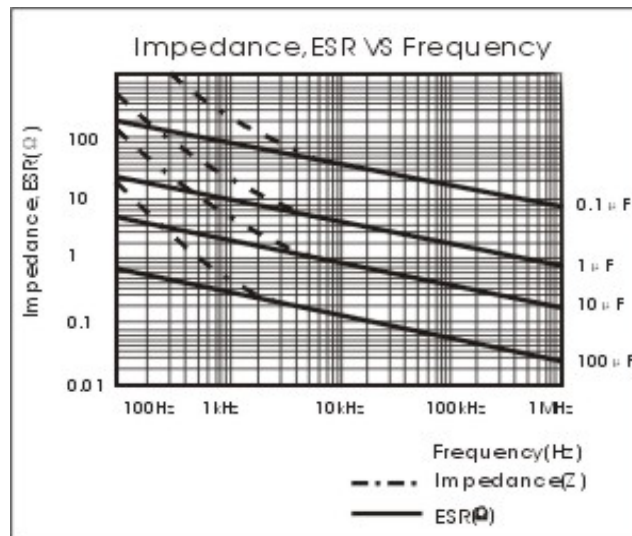
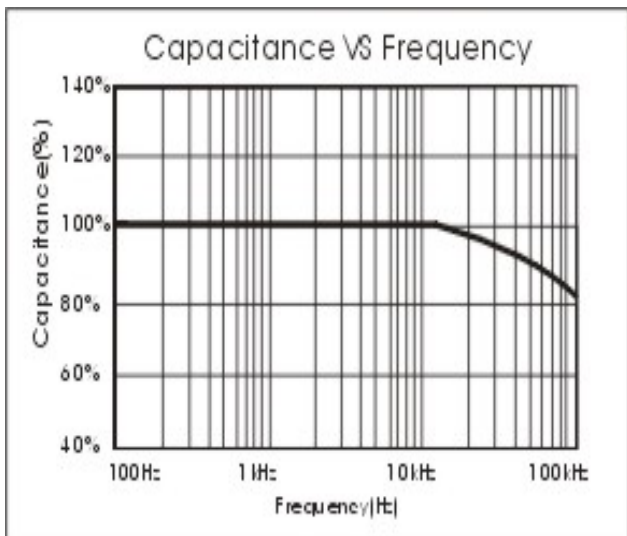
Rated Voltage•V•	4	6•3	10	16	20	25	35	50
Volatge Code	G	J	A	C	D	E	V	H

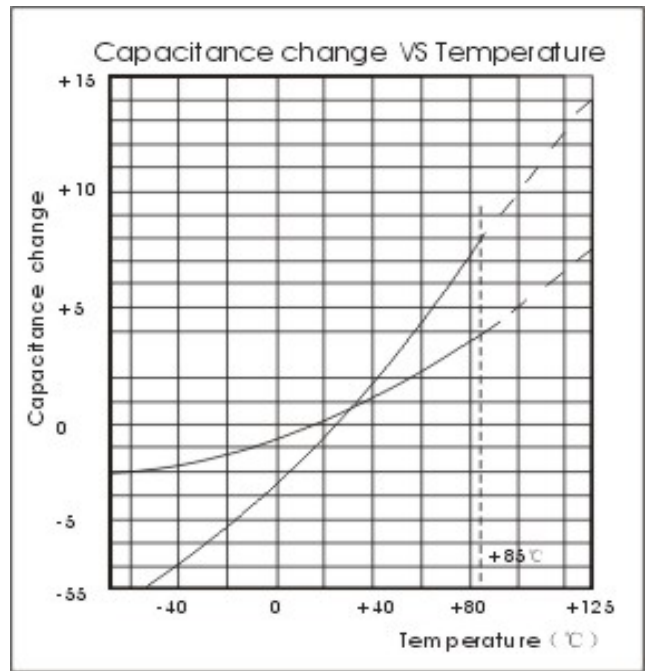
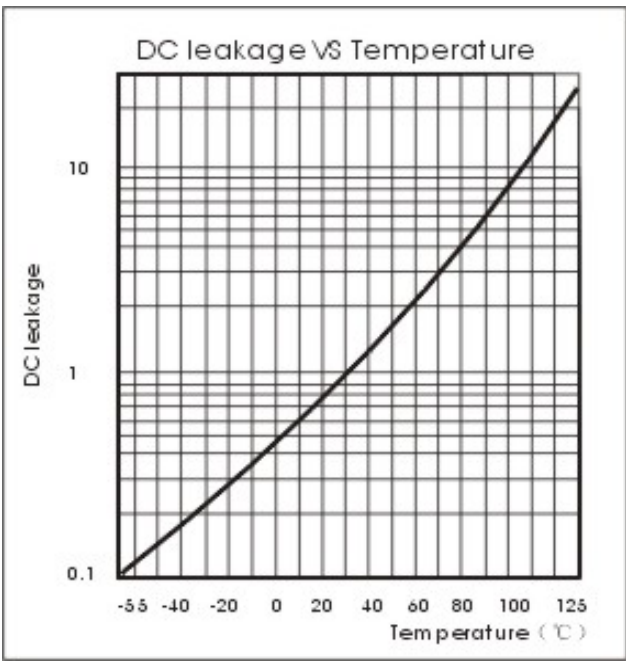
Capacitance•uF•	1	1.5	2.2	3.3	4.7	6.8
Capacitance Code	A	E	J	N	S	W

Multiplier	10^4	10^5	10^6	10^7
Second digit	4	5	6	7

Exp•A6C: A represents nominal capacitance code, the second digit represents multiplier and the third digit represents rated voltage, that is : voltage 16V;Capacitance $1 \times 10^6 \mu\text{F}$;16V1uF

Vatronics CHARACTERISTIC CURVE:





How to order

VTS 105 M 035 B T

(1) (2) (3) (4) (5) (6)

(1)Product Type:

SMD Tantalum Capacitors

(2)Capacitance:

105= $10 \times 10^5 = 1000000\text{pF}$

226= $22 \times 10^6 = 22000000\text{pF}$

(3)Tolerance:

M= $\pm 20\%$

K= $\pm 10\%$

J= $\pm 5\%$

(4)Working Voltage

035=35VDC

016=16VDC

(5)Case size:

S=S CASE

A=A CASE

B=B CASE

C=C CASE

D=D CASE

E=E CASE

(6)Packing:

T=TAPE&REEL

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