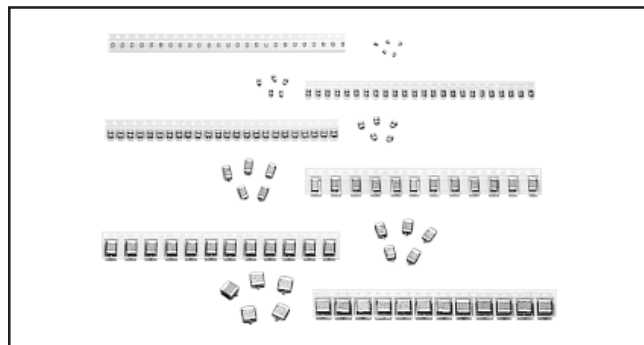




TYPE 595D Solid Tantalum Chip Capacitors

TANTAMOUNT[®], Conformal Terminals, Maximum C/V



FEATURES

- New extended range offerings.
- New lower ESR reading.
- Largest capacitance rating in the industry.
- Compatible with 293D molded chip mounting pad layout.
- Terminations: 60/40 Tin Lead (2) standard (Electroplate or solder dip).
- 8mm, 12mm tape available per EIA-481-1 and reeling per IEC 286-3. 7" [178mm] standard. 13" [330mm] available.
- Operating temperature: - 55°C to + 125°C.
- Case code compatibility with EIA 535BAAC and CECC 30801 molded chips.

PERFORMANCE CHARACTERISTICS

Operating Temperature: - 55°C to + 85°C. (To + 125°C with voltage derating.)

Capacitance Tolerance: At 120 Hz, + 25°C. ± 20% standard. ± 10% available.

Dissipation Factor: At 120 Hz, + 25°C. Dissipation factor, as determined from the expression $2\pi fRC$, shall not exceed the values listed in the Standard Ratings Tables.

DC Leakage Current (DCL Max.):

At + 25°C: Leakage current shall not exceed the values listed in the Standard Ratings Tables.

At + 85°C: Leakage current shall not exceed 10 times the values listed in the Standard Ratings Tables.

At + 125°C: Leakage current shall not exceed 12 times the values listed in the Standard Ratings Tables.

Life Test: Capacitors shall withstand rated DC voltage applied at + 85°C for 2000 hours or derated DC voltage applied at + 125°C for 1000 hours.

Following the life test:

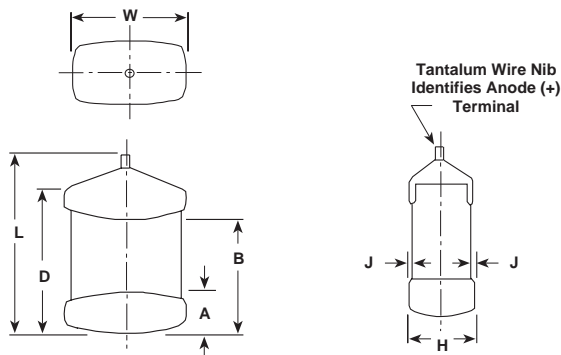
1. DCL shall meet the original requirement.
2. Dissipation factor and ESR shall meet the original requirement.
3. Change in capacitance shall not exceed ± 10%.

ELECTRICAL CHARACTERISTICS @ + 25°C

DCL: .01μA/CV or .5μA whichever is greater.

DF: 4% ≤ 1μF, 6% > 1μF < 100μF, 8% ≥ 100μF < 560μF, 10% 560μF & 680μF, 16% 1000μF, 20% 1500μF.

DIMENSIONAL CONFIGURATIONS [Numbers in brackets indicate millimeters]



CASE CODE	L (Max.)	W	H	A	B	D (Ref.)	J (Max.)
T	.087 [2.2]	.045 ± .010 [1.1 ± 0.3]	.045 ± .010 [1.1 ± 0.3]	.016 ± .008 [.4 ± 0.2]	.042 ± .010 [1.07 ± 0.25]	.063 [1.6]	.004 [0.1]
A	.146 [3.7]	.072 ± .010 [1.8 ± 0.3]	.056 ± .012 [1.4 ± 0.3]	.031 ± .012 [.80 ± .30]	.085 ± .015 [2.2 ± 0.4]	.115 [2.9]	.004 [0.1]
B	.158 [4.0]	.110 ± .010 - .016 [2.8 + 0.3 - 0.4]	.075 ± .012 - .025 [1.9 + 0.3 - 0.6]	.031 ± .012 [.80 ± .30]	.097 ± .015 [2.5 ± 0.4]	.138 [3.5]	.004 [0.1]
C	.281 [7.1]	.126 ± .010 [3.2 ± 0.3]	.098 ± .012 [2.5 ± 0.3]	.051 ± .017 [1.3 ± .30]	.180 ± .025 [4.6 ± 0.6]	.236 [6.0]	.004 [0.1]
D	.293 [7.5]	.170 ± .010 [4.3 ± 0.3]	.110 ± .012 [2.8 ± 0.3]	.051 ± .017 [1.3 ± .30]	.180 ± .025 [4.6 ± 0.6]	.253 [6.4]	.004 [0.1]
R	.283 [7.2]	.235 ± .010 [6.0 ± 0.3]	.136 ± .012 [3.5 ± 0.3]	.051 ± .017 [1.3 ± .30]	.180 ± .025 [4.6 ± 0.6]	.243 [6.2]	.004 [0.1]

Note: The anode termination (D less B) will be a minimum of .010" [0.3mm]. T Case = .005" [.13mm] minimum.

TYPE 595D

RATINGS AND CASE CODES																
μF	RATED VOLTAGE VR @ + 85°C															
	4 V		6.3 V		10 V		16 V		20 V		25 V		35 V		50 V	
	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.
0.10																
0.15																
0.22															T	
0.33													T			
0.47												T			A	
0.68																A
1.0									T					A		B
1.5								T				A			A	
2.2					T							A	B			B
3.3			T					T	A		B					
4.7	T					T									B	C
6.8				T			A		B	A				C		D
10		T			A							B				D
15	A		A		B	A	B	A		B	C		D	C	R	
22			B						C			C		D		R
33	B	A		A				B			D		R			
47					B	C	B*	D	C			D		R		
68				B	C						R					
100		B					D	C		D		R				
120			C						R							
150	C				D	C		D		R						
180							R									
220			D	C		D		R								
270	D	C														
330				D	R	D*										
390		D	R			R										
470	R			D*		R*										
560																
680		D*				R*										
1000		R		R												
1500		R*														

* Contact factory for availability. **Note:** This table shows the largest capacitance values available in the case size and voltage indicated.

STANDARD RATINGS							
CAPACITANCE (μF)	CASE CODE	PART NUMBER**	Max. DCL @ + 25°C (μA)	Max. DF @ + 25°C 120 Hz (%)	Max. ESR @ + 25°C 100kHz (Ohms)	Max. RIPPLE 100kHz Irms (Amps)	
4 WVDC @ + 85°C, SURGE = 5.2 V . . . 2.7 WVDC @ + 125°C, SURGE = 3.4 V							
4.7	T	595D475X0004T2T	0.5	6	7.8	0.06	
10.0	T	595D106X0004T2T	0.5	6	7.8	0.06	
15.0	A	595D156X0004A2T	0.6	6	1.4	0.22	
33.0	A	595D336X0004A2T	1.3	6	1.4	0.22	
33.0	B	595D336X0004B2T	1.3	6	0.47	0.41	
100.0	B	595D107X0004B2T	4.0	8	0.45	0.42	
120.0	C	595D127X0004C2T	4.8	8	0.19	0.76	
150.0	C	595D157X0004C2T	6.0	8	0.18	0.78	
180.0	D	595D187X0004D2T	7.2	8	0.14	1.04	
220.0	D	595D227X0004D2T	8.8	8	0.14	1.04	
270.0	C	595D277X0004C2T	10.8	8	0.17	0.80	
270.0	D	595D277X0004D2T	10.8	8	0.13	1.07	
390.0	D	595D397X0004D2T	15.6	8	0.13	1.07	
470.0	R	595D477X0004R2T	18.8	8	0.13	1.39	
680.0*	D*	595D687X0004D2T*	27.2	10	0.13	1.07	
680.0	R	595D687X0004R2T	27.2	10	0.11	1.51	
1000.0	R	595D108X0004R2T	40.0	16	0.07	1.88	
1500.0*	R*	595D158X0004R2T*	60.0	20	0.07	1.88	
6.3 WVDC @ + 85°C, SURGE = 8 V . . . 4 WVDC @ + 125°C, SURGE = 5 V							
3.3	T	595D335X06R3T2T	0.5	6	8.5	0.06	
6.8	T	595D685X06R3T2T	0.5	6	8.5	0.06	
15.0	A	595D156X06R3A2T	0.9	6	1.7	0.20	
22.0	A	595D226X06R3A2T	1.4	6	1.7	0.20	
22.0	B	595D226X06R3B2T	1.4	6	0.57	0.37	
33.0	A	595D336X06R3A2T	2.1	6	1.70	0.20	

* Contact factory for availability. ** Part Numbers shown for units with ± 20% capacitance tolerance. For ± 10% units, change "X0" to "X9".
Extended ratings shown in bold print.

TYPE 595D

STANDARD RATINGS						
CAPACITANCE (μ F)	CASE CODE	PART NUMBER**	Max. DCL @ + 25°C (μ A)	Max. DF @ + 25°C 120 Hz (%)	Max. ESR @ + 25°C 100kHz (Ohms)	Max. RIPPLE 100kHz Irms (Amps)
6.3 WVDC @ + 85°C, SURGE = 8 V . . . 4 WVDC @ + 125°C, SURGE = 5 V						
68.0	B	595D686X06R3B2T	4.3	6	0.55	0.38
100.0	C	595D107X06R3C2T	6.3	8	0.20	0.74
120.0	C	595D127X06R3C2T	7.6	8	0.19	0.76
180.0	D	595D187X06R3D2T	11.3	8	0.14	1.04
220.0	C	595D227X06R3C2T	13.9	8	0.18	0.78
220.0	D	595D227X06R3D2T	13.9	8	0.14	1.04
330.0	D	595D337X06R3D2T	20.8	8	0.14	1.04
330.0	R	595D337X06R3R2T	20.8	8	0.13	1.39
390.0	R	595D397X06R3R2T	24.6	8	0.13	1.39
470.0*	D*	595D477X06R3D2T*	29.6	8	0.13	1.07
560.0	R	595D567X06R3R2T	35.3	10	0.11	1.51
680.0	R	595D687X06R3R2T	42.8	10	0.09	1.66
1000.0	R	595D108X06R3R2T	63.0	16	0.07	1.88
10 WVDC @ + 85°C, SURGE = 13 V . . . 7 WVDC @ + 125°C, SURGE = 8 V						
2.2	T	595D225X0010T2T	0.5	6	8.6	0.06
4.7	T	595D475X0010T2T	0.5	6	8.6	0.06
10.0	A	595D106X0010A2T	1.0	6	1.9	0.19
15.0	A	595D156X0010A2T	1.5	6	1.8	0.20
15.0	B	595D156X0010B2T	1.5	6	0.67	0.35
47.0	B	595D476X0010B2T	4.7	6	0.65	0.35
68.0	C	595D686X0010C2T	6.8	6	0.24	0.68
120.0	D	595D127X0010D2T	12.0	8	0.14	1.04
150.0	C	595D157X0010C2T	15.0	8	0.22	0.71
150.0	D	595D157X0010D2T	15.0	8	0.14	1.04
180.0	R	595D187X0010R2T	18.0	8	0.13	1.39
220.0	D	595D227X0010D2T	22.0	8	0.14	1.04
220.0	R	595D227X0010R2T	22.0	8	0.13	1.39
270.0	R	595D277X0010R2T	27.0	8	0.13	1.39
330.0*	D*	595D337X0010D2T*	33.0	8	0.14	1.04
330.0	R	595D337X0010R2T	33.0	8	0.13	1.39
390.0	R	595D397X0010R2T	39.0	8	0.12	1.44
470.0*	R*	595D477X0010R2T*	47.0	8	0.12	1.44
680.0*	R*	595D687X0010R2T*	68.0	10	0.09	1.66
16 WVDC @ + 85°C, SURGE = 20 V . . . 10 WVDC @ + 125°C, SURGE = 12 V						
1.5	T	595D155X0016T2T	0.5	6	8.7	0.06
3.3	T	595D335X0016T2T	0.5	6	8.6	0.06
4.7	A	595D475X0016A2T	0.8	6	2.9	0.16
6.8	A	595D685X0016A2T	1.1	6	2.8	0.16
10.0	A	595D106X0016A2T	1.6	6	2.5	0.17
10.0	B	595D106X0016B2T	1.6	6	0.76	0.32
15.0	A	595D156X0016A2T	2.4	6	2.40	0.17
15.0	B	595D156X0016B2T	2.4	6	0.75	0.33
33.0	B	595D336X0016B2T	5.3	6	0.72	0.33
33.0	C	595D336X0016C2T	5.3	6	0.29	0.62
47.0*	B*	595D476X0016B2T*	7.5	6	0.72	0.33
47.0	C	595D476X0016C2T	7.5	6	0.28	0.63
68.0	D	595D686X0016D2T	10.9	6	0.14	1.04
100.0	C	595D107X0016C2T	16.0	8	0.27	0.64
100.0	D	595D107X0016D2T	16.0	8	0.14	1.04
120.0	R	595D127X0016R2T	19.2	8	0.14	1.34
150.0	D	595D157X0016D2T	24.0	8	0.14	1.04
150.0	R	595D157X0016R2T	24.0	8	0.13	1.39
180.0	R	595D187X0016R2T	28.8	8	0.13	1.39
220.0	R	595D227X0016R2T	35.2	8	0.12	1.44
20 WVDC @ + 85°C, SURGE = 26 V . . . 13 WVDC @ + 125°C, SURGE = 16 V						
0.68	T	595D684X0020T2T	0.5	4	10.8	0.05
1.0	T	595D105X0020T2T	0.5	4	9.0	0.06
2.2	A	595D225X0020A2T	0.5	6	3.8	0.14
3.3	A	595D335X0020A2T	0.7	6	3.8	0.14
4.7	A	595D475X0020A2T	0.9	6	3.1	0.15
4.7	B	595D475X0020B2T	0.9	6	0.95	0.29
6.8	A	595D685X0020A2T	1.4	6	3.0	0.15
6.8	B	595D685X0020B2T	1.4	6	0.95	0.29
10.0	B	595D106X0020B2T	2.0	6	1.0	0.28

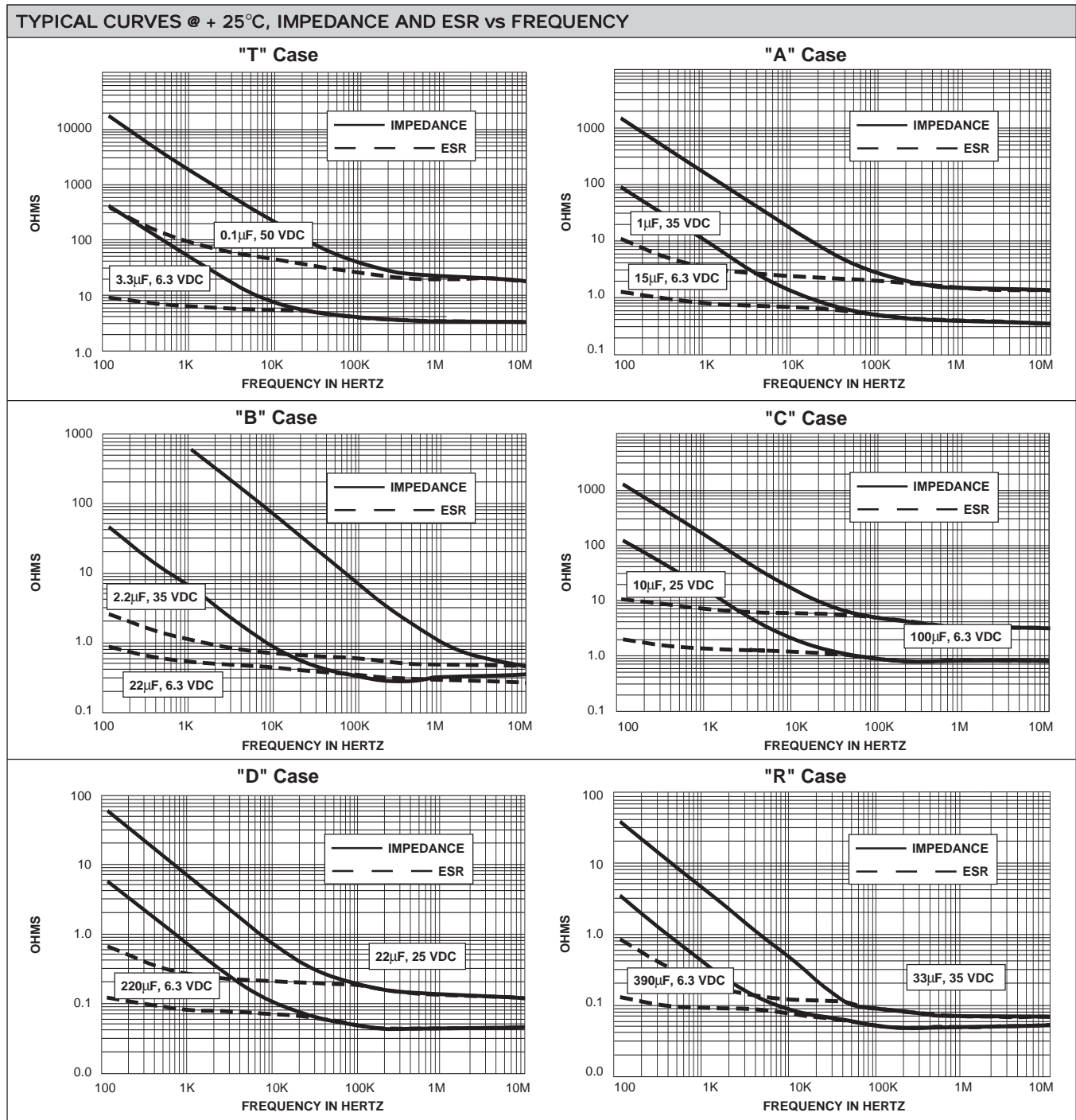
* Contact factory for availability. ** Part Numbers shown for units with \pm 20% capacitance tolerance. For \pm 10% units, change "X0" to "X9".

Extended ratings shown in bold print.

TYPE 595D

STANDARD RATINGS						
CAPACITANCE (μ F)	CASE CODE	PART NUMBER**	Max. DCL @ + 25°C (μ A)	Max. DF @ + 25°C 120Hz (%)	Max. ESR @ + 25°C 100kHz (Ohms)	Max. RIPPLE 100kHz I _{rms} (Amps)
20 WVDC @ + 85°C, SURGE = 26 V . . . 13 WVDC @ + 125°C, SURGE = 16 V						
15.0	B	595D156X0020B2T	3.0	6	1.0	0.28
22.0	C	595D226X0020C2T	4.4	6	0.38	0.54
47.0	C	595D476X0020C2T	9.4	6	0.35	0.56
47.0	D	595D476X0020D2T	9.4	6	0.19	0.89
100.0	D	595D107X0020D2T	20.0	8	0.18	0.91
100.0	R	595D107X0020R2T	20.0	8	0.14	1.34
120.0	R	595D127X0020R2T	24.0	8	0.14	1.34
150.0	R	595D157X0020R2T	30.0	8	0.14	1.34
25 WVDC @ + 85°C, SURGE = 32 V . . . 17 WVDC @ + 125°C, SURGE = 20 V						
0.47	T	595D474X0025T2T	0.5	4	13.5	0.05
1.5	A	595D155X0025A2T	0.5	6	3.8	0.14
2.2	A	595D225X0025A2T	0.6	6	3.8	0.14
3.3	B	595D335X0025B2T	0.8	6	1.9	0.21
6.8	B	595D685X0025B2T	1.7	6	1.5	0.23
10.0	B	595D106X0025B2T	2.5	6	1.5	0.23
10.0	C	595D106X0025C2T	2.5	6	0.57	0.44
15.0	C	595D156X0025C2T	3.8	6	0.56	0.44
22.0	C	595D226X0025C2T	5.5	6	0.50	0.47
22.0	D	595D226X0025D2T	5.5	6	0.28	0.73
33.0	D	595D336X0025D2T	8.3	6	0.27	0.75
47.0	D	595D476X0025D2T	11.8	6	0.26	0.76
47.0	R	595D476X0025R2T	11.8	6	0.20	1.12
68.0	R	595D686X0025R2T	17.0	6	0.20	1.12
100.0	R	595D107X0025R2T	25.0	8	0.20	1.12
35 WVDC @ + 85°C, SURGE = 46 V . . . 23 WVDC @ + 125°C, SURGE = 26 V						
0.33	T	595D334X0035T2T	0.5	4	14.4	0.05
0.47	A	595D474X0035A2T	0.5	4	4.3	0.13
0.68	A	595D684X0035A2T	0.5	4	4.2	0.13
1.0	A	595D105X0035A2T	0.5	4	4.1	0.13
1.5	A	595D155X0035A2T	0.5	6	3.8	0.14
1.5	B	595D155X0035B2T	0.5	6	2.8	0.17
2.2	B	595D225X0035B2T	0.8	6	2.3	0.19
3.3	C	595D335X0035C2T	1.2	6	0.75	0.38
4.7	B	595D475X0035B2T	1.6	6	2.2	0.19
4.7	C	595D475X0035C2T	1.6	6	0.66	0.41
6.8	C	595D685X0035C2T	2.4	6	0.63	0.42
10.0	D	595D106X0035D2T	3.5	6	0.43	0.59
15.0	C	595D156X0035C2T	5.3	6	0.60	0.43
15.0	D	595D156X0035D2T	5.3	6	0.41	0.60
22.0	D	595D226X0035D2T	7.7	6	0.32	0.68
22.0	R	595D226X0035R2T	7.7	6	0.28	0.94
33.0	R	595D336X0035R2T	11.6	6	0.28	0.94
47.0	R	595D476X0035R2T	16.5	6	0.28	0.94
50 WVDC @ + 85°C, SURGE = 65 V . . . 33 WVDC @ + 125°C, SURGE = 38 V						
0.10	T	595D104X0050T2T	0.5	4	22.5	0.04
0.15	T	595D154X0050T2T	0.5	4	18.0	0.04
0.22	T	595D224X0050T2T	0.5	4	15.3	0.04
0.33	A	595D334X0050A2T	0.5	4	8.1	0.09
0.47	A	595D474X0050A2T	0.5	4	7.2	0.10
0.68	A	595D684X0050A2T	0.5	4	6.1	0.11
0.68	B	595D684X0050B2T	0.5	4	5.4	0.12
1.0	B	595D105X0050B2T	0.5	4	5.0	0.13
1.5	C	595D155X0050C2T	0.8	6	1.8	0.25
2.2	B	595D225X0050B2T	1.1	6	3.2	0.16
2.2	C	595D225X0050C2T	1.1	6	1.7	0.25
3.3	C	595D335X0050C2T	1.7	6	1.6	0.26
4.7	C	595D475X0050C2T	2.4	6	1.4	0.28
6.8	C	595D685X0050C2T	3.4	6	1.3	0.29
6.8	D	595D685X0050D2T	3.4	6	0.82	0.43
10.0	D	595D106X0050D2T	5.0	6	0.80	0.43
10.0	R	595D106X0050R2T	5.0	6	0.65	0.62
15.0	R	595D156X0050R2T	7.5	6	0.40	0.79
22.0	R	595D226X0050R2T	11.0	6	0.39	0.80

** Part Numbers shown for units with \pm 20% capacitance tolerance. For \pm 10% units, change "X0" to "X9".
Extended ratings shown in bold print.



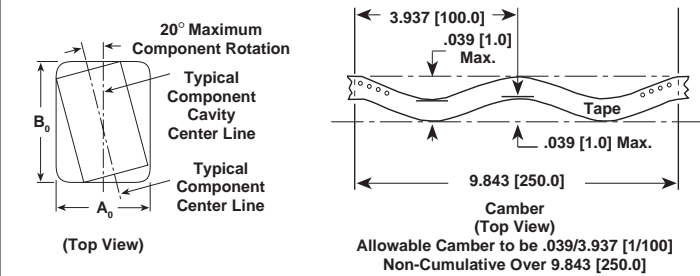
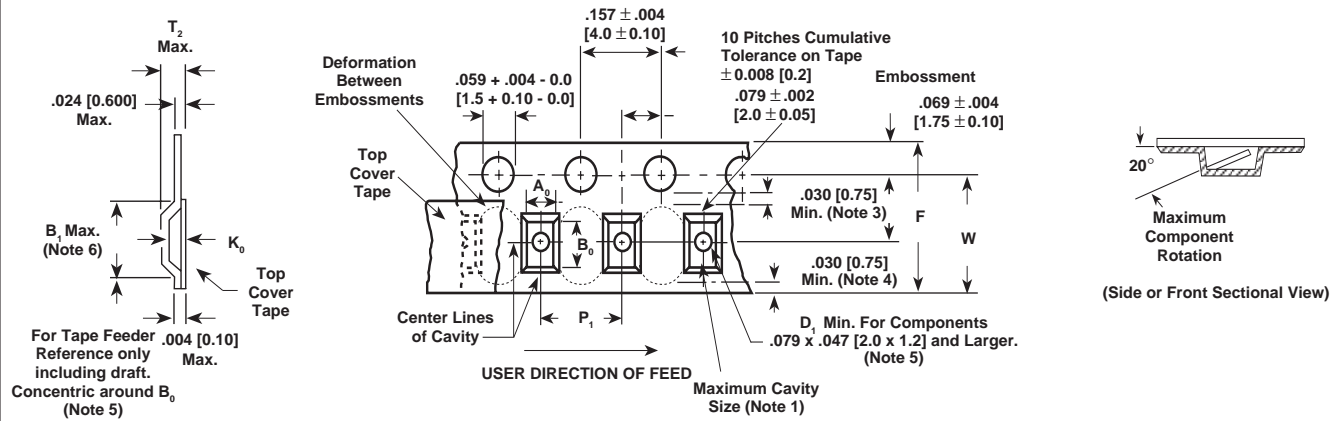
HOW TO ORDER

595D TYPE	106 CAPACITANCE	X0 CAPACITANCE TOLERANCE	010 DC VOLTAGE RATING @ + 85°C	A CASE CODE	2 TERMINATION	T PACKAGING
This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow.		X0 = ± 20% X9 = ± 10%	This is expressed in volts. To complete the three-digit block, zeros precede the voltage rating. A decimal point is indicated by an "R" (6R3 = 6.3 volts).	See Ratings and Case Codes Table.	2 = 60/40 Tin Lead. Standard.	Blank = Bulk Pack T = Tape and Reel 7" [178mm] Reel W = 13" [330mm] Reel See Tape and Reel Specifications.

NOTE: Parts qualified and identified to tighter capacitance tolerance and/or higher rated voltage, are substitutable for parts ordered to looser capacitance tolerance and/or lower rated voltage, provided other values, such as case size and termination remain the same.

TAPE AND REEL PACKAGING [Numbers in brackets indicate millimeters]

Note: Metric dimensions will govern. Dimensions in inches are rounded and for reference only.



Tape and Reel Specifications: All case codes are available on plastic embossed tape per EIA-481-1. Tape reeling per IEC 286-3 is also available. Standard reel diameter is 7" [178mm]. 13" [330mm] reels are available and recommended as the most cost effective packaging method.

The most efficient packaging quantities are full reel increments on a given reel diameter. The quantities shown allow for the sealed empty pockets required to be in conformance with EIA-481-1. Reel size and packaging orientation must be specified in the Vishay Sprague part number.

TAPE SIZE	B ₁ (Max.) (Note 6)	D ₁ (Min.) (Note 5)	F	P ₁	R (Min.) (Note 2)	T ₂ (Max.)	W	A ₀ B ₀ K ₀
8mm	.179 [4.55]	.039 [1.0]	.138 ± .002 [3.5 ± 0.05]	.157 ± .004 [4.0 ± 0.1]	.984 [25.0]	.098 [2.5]	.315 + .012 - .004 [8.0 + 0.3 - 0.1]	(Note 1)
12mm	.323 [8.2]	.059 [1.5]	.217 ± .002 [5.5 ± 0.05]	.157 ± .004 [4.0 ± 0.1]	1.181 [30.0]	.256 [6.5]	.472 ± .012 [12.0 ± .30]	
12mm Double Pitch	.323 [8.2]	.059 [1.5]	.217 ± .002 [5.5 ± 0.05]	.315 ± .004 [8.0 ± 0.1]	1.181 [30.0]	.256 [6.5]	.472 ± .012 [12.0 ± .30]	

Notes:

- A₀B₀K₀ are determined by the maximum dimensions to the ends of the terminals extending from the component body and/or the body dimensions of the component. The clearance between the ends of the terminals or body of the component to the sides and depth of the cavity (A₀B₀K₀) must be within .002" [0.05mm] minimum and .020" [0.50mm] maximum. The clearance allowed must also prevent rotation of the component within the cavity of not more than 20 degrees.
- Tape with components shall pass around radius "R" without damage. The minimum trailer length may require additional length to provide R minimum for 12mm embossed tape for reels with hub diameters approaching N minimum.
- This dimension is the flat area from the edge of the sprocket hole to either the outward deformation of the carrier tape between the embossed cavities or to the edge of the cavity whichever is less.
- This dimension is the flat area from the edge of the carrier tape opposite the sprocket holes to either the outward deformation of the carrier tape between the embossed cavity or to the edge of the cavity whichever is less.
- The embossment hole location shall be measured from the sprocket hole controlling the location of the embossment. Dimensions of embossment location and hole location shall be applied independent of each other.
- B₁ dimension is a reference dimension for tape feeder clearance only.

Case Code	Tape Width	Component Pitch	Units Per Reel	
			7" [178] Reel	13" [330] Reel
T	8mm	4mm	2500	10,000
A	8mm	4mm	2000	9000
B	12mm	4mm	2000	8000
C	12mm	8mm	500	3000
D	12mm	8mm	500	2500
R	12mm	8mm	600	—

GUIDE TO APPLICATION

1. **A-C Ripple Current:** The maximum allowable ripple current shall be determined from the formula:

$$I_{rms} = \sqrt{\frac{P}{R_{ESR}}}$$

where,

P = Power Dissipation in Watts @ + 25°C as given in the table in Paragraph Number 5 (Power Dissipation).

R_{ESR} = The capacitor Equivalent Series Resistance at the specified frequency.

2. **A-C Ripple Voltage:** The maximum allowable ripple voltage shall be determined from the formula:

$$V_{rms} = Z \sqrt{\frac{P}{R_{ESR}}}$$

or, from the formula:

$$V_{rms} = I_{rms} \times Z$$

where,

P = Power Dissipation in Watts @ + 25°C as given in the table in Paragraph Number 5 (Power Dissipation).

R_{ESR} = The capacitor Equivalent Series Resistance at the specified frequency.

Z = The capacitor Impedance at the specified frequency.

- 2.1 The sum of the peak AC voltage plus the DC voltage shall not exceed the DC voltage rating of the capacitor.
- 2.2 The sum of the negative peak AC voltage plus the applied DC voltage shall not allow a voltage reversal exceeding 10% of the DC working voltage at + 25°C.
3. **Reverse Voltage:** These capacitors are capable of withstanding peak voltages in the reverse direction equal to 10% of the DC rating at + 25°C and 5% of the DC rating at + 85°C.
4. **Temperature Derating:** If these capacitors are to be operated at temperatures above + 25°C, the permissible rms ripple current or voltage shall be calculated using the derating factors as shown:

Temperature	Derating Factor
+ 25°C	1.0
+ 55°C	0.9
+ 85°C	0.8
+ 125°C	0.4

5. **Power Dissipation:** Power dissipation will be affected by the heat sinking capability of the mounting surface. Non-sinusoidal ripple current may produce heating effects which differ from those shown. It is important that the equivalent *I*_{rms} value be established when calculating permissible operating levels. (Power dissipation calculated using + 25°C temperature rise.)

Case Code	Maximum Permissible Power Dissipation @ + 25°C (Watts) in free air
T	0.030
A	0.070
B	0.080
C	0.110
D	0.150
R	0.250

6. **Recommended Mounting Pad Geometries:** The nib must have sufficient clearance to avoid electrical contact with other components. The width dimension indicated is the same as the maximum width of the capacitor. This is to minimize lateral movement.

REFLOW SOLDER PADS*

[Numbers in brackets indicate millimeters]



CASE CODE	WIDTH (A)	PAD METALLIZATION (B)	SEPARATION (C)
T	.055 [1.5]	.030 [0.7]	.025 [0.6]
A	.082 [2.1]	.065 [1.7]	.050 [1.3]
B	.120 [3.0]	.065 [1.7]	.065 [1.7]
C	.136 [3.5]	.090 [2.3]	.120 [3.1]
D	.180 [4.6]	.090 [2.3]	.145 [3.7]
R	.245 [6.3]	.090 [2.3]	.145 [3.7]

* Pads for B, C and D case codes are otherwise pad compatible with Type 293D, B, C and D case codes respectively.