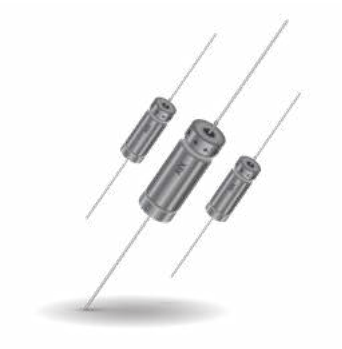
TWA-Y SERIES

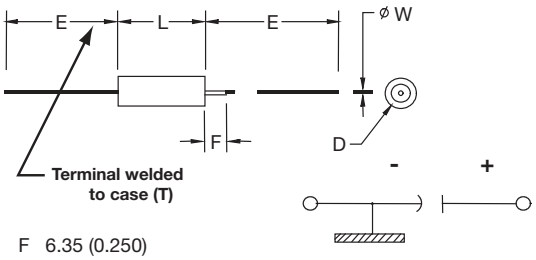
High Temperature – COTS-Plus 200°C
Wet Electrolytic Tantalum Capacitor



GENERAL DESCRIPTION

The TWA-Y series represents a high temperature version of conventional wet electrolytic tantalum capacitors that are designed for use at 200°C. High capacitance cathode system allows high level of CV (Capacitance/Voltage) in standard case sizes.
Selected values of the TWA-Y are capable of up to 2000 hours of operation at extreme temperatures with the applicable derated voltage.
Mechanical testing being conducted in accordance to MIL-STD- 202, High Frequency vibration - method 204, test condition "D" Mechanical Shock Test - method 213, test condition "I".
This design includes a welded tantalum can and header assembly that provides a hermetic seal to withstand also harsh shock and vibration requirements.
Contact the factory for additional options for customized component design.

OUTLINE DIMENSIONS



F 6.35 (0.250)
W 0.64 +0.05
(.025) (.002)
T 2.380 (.094)

CASE DIMENSIONS: millimeters (inches)

DLA Case Size	Case Size	L +0.79 (0.031) -0.41 (0.016)	D Without Insulating Sleeve ±0.41 (0.016)	D With Insulating Sleeve Max	E ±6.35 (0.250)
T1	A	11.51 (0.453)	4.78 (0.188)	5.56 (0.219)	38.10 (1.500)
T2	B	16.28 (0.641)	7.14 (0.281)	7.92 (0.312)	57.15 (2.250)
T3	D	19.46 (0.766)	9.52 (0.375)	10.31 (0.406)	57.15 (2.250)
T4	E	26.97 (1.062)	9.52 (0.375)	10.31 (0.406)	57.15 (2.250)

VOLTAGE RATINGS (Operating Temperature -55°C to 200°C)

Voltage (DC)									
Rated Voltage: (V_R)	85°C	15	25	30	50	60	75	100	125
Derated Voltage: (V_C)	125°C	10	15	20	30	40	50	65	85
High Temperature Voltage: (VT)	200°C	9	12	18	30	36	45	60	75

HOW TO ORDER

PART NUMBER:

TWA	E	757	*	075	□	B	Y	Z	0	^	00
Type	Case Size	Capacitance Code: pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance: K = ±10%, M = ±20%	Voltage Code	Insulation Sleeve: C = Without Sleeve, S = With Sleeve	Packaging: B = Tray Pack	Qualification: Y = High Temp	Reliability: Z = Non-ER	Qualification Level: 0 = N/A	Termination Finish: 0 = Sn/Pb 60/40, 7 = Matte tin	Custom Test Options: 00 = Standard

LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT

For RoHS compliant products, please select correct termination style.

RIPPLE CURRENT MULTIPLIERS vs. Frequency, temperature and applied voltage[1/ 2/]

Frequency of Applied Ripple Current		120Hz				800Hz				1kHz			
Ambient Still Air Temperature (°C)		≤55	85	105	125	≤55	85	105	125	≤55	85	105	125
% of 85°C Rated Peak Voltage	100%	0.60	0.39	–	–	0.71	0.43	–	–	0.72	0.45	–	–
	90%	0.60	0.46	–	–	0.71	0.55	–	_	0.72	0.55	–	–
	80%	0.60	0.52	0.35	–	0.71	0.62	0.42	–	0.72	0.62	0.42	–
	70%	0.60	0.58	0.44	–	0.71	0.69	0.52	–	0.72	0.70	0.52	–
	66-2/3%	0.60	0.60	0.46	0.27	0.71	0.71	0.55	0.32	0.72	0.72	0.55	0.32

Frequency of Applied Ripple Current		10kHz				40kHz				100kHz			
Ambient Still Air Temperature (°C)		≤55	85	105	125	≤55	85	105	125	≤55	85	105	125
% of 85°C Rated Peak Voltage	100%	0.88	0.55	–	–	1.00	0.63	–	–	1.10	0.69	–	–
	90%	0.88	0.67	–	–	1.00	0.77	–	_	1.10	0.85	–	–
	80%	0.88	0.76	0.52	–	1.00	0.87	0.59	–	1.10	0.96	0.65	–
	70%	0.88	0.85	0.64	–	1.00	0.97	0.73	–	1.10	1.07	0.80	–
	66-2/3%	0.88	0.88	0.68	0.40	1.00	1.00	0.77	0.45	1.10	1.10	0.85	0.50

1/ At 125°C the rated voltage of the capacitors decreases to 66 2/3 of the 85°C rated voltage.
2/ The peak of the applied ac ripple voltage plus the applied dc voltage must not exceed the dc voltage rating of the capacitors.

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V^R) to 85°C							
µF	Code	15V	25V	30V	50V	60V	75V	100V	125V
10	106				A			A(M)	A(M)
15	156			A				A	
22	226		A			A	A	B	
27	276					A			B
33	336	A			A		A		
47	476				B	A			B
50	506					B			
56	566		A	A			B		
60	606				B				
68	686		A		A	B	A(M)	B	
82	826				B		B		D,E
100	107		B	A,B	A(M)	B			D
110	117						B		
120	127		A,B		B				
150	157			B		B		D	E
180	187						D		
220	227			B	B	D	E	E	E
270	277		B		D	E			
300	307			D					
330	337				E			E	E
390	397	D		D					
400	407							E	
470	477			B,D			E	E	E
560	567		B,E	E				E	
680	687						E		
750	757						E	E	
1000	108			D	E	E	E		
1200	128		D						
1500	158				E				
1800	188		E						
2200	228		E						
3000	308		E(M)						
4700	478		E						

Available Ratings (M tolerance only)

TWA-Y SERIES

High Temperature – COTS-Plus 200°C
Wet Electrolytic Tantalum Capacitor

RATINGS & PART NUMBER REFERENCE

ENERGY

Part Number	Cap (µF) 25°C at 120Hz	DC Rated Voltage (V) at 85°C	ESR Max (Ohms) at 120Hz	DC Leakage max (µA)		Impedance max (Ohms) -55°C at 120Hz	Maximum Capacitance Change (%)			AC Ripple (mA rms) 85°C at 40kHz	Case Size		Lifetime at 200°C (hrs.)	Energy (mJ)	Energy / volume (mJ/mm³)
				+25°C	+85 &		-55°C	+85°C	+125°C		KAVX	DLA			
15 VDC @ 85°C 10 VDC @ 125°C 9 VDC @ 200°C															
TWAA336*015□BYZ0^00	33	15	4	1	2	90	-28	14	16	820	A	T1	2000	2.86	0.014
TWAD397*015□BYZ0^00	390	15	1.7	7	28	48	-70	25	25	1396	D	T3	1000	33.78	0.024
25 VDC @ 85°C 15 VDC @ 125°C 12 VDC @ 200°C															
TWAA226*025□BYZ0^00	22	25	4	1	2	140	-20	10.5	12	825	A	T1	2000	23.46	0.114
TWAA566*025□BYZ0^00	56	25	4	1	2	140	-20	10.5	12	825	A	T1	500	4.30	0.021
TWAA686*025□BYZ0^00	68	25	4	1	2	140	-20	10.5	12	825	A	T1	500	10.95	0.053
TWAB107*025□BYZ0^00	100	25	2.5	1	10	60	-35	13	15	-	B	T2	2000	13.29	0.064
TWAA127*025□BYZ0^00	120	25	2.3	2	10	35	-42	20	25	1250	A	T1	500	19.55	0.030
TWAB127*025□BYZ0^00	120	25	2.3	2	10	60	-32	13	15	-	B	T2	500	23.46	0.036
TWAB277*025□BYZ0^00	270	25	0.9	4	20	17.5	-50	18	28	1800	B	T2	1000	52.79	0.081
TWAB567*025□BYZ0^00	560	25	1.0	2	10	12	-65	10	15	2100	B	T2	1000	109.48	0.168
TWAE567*025□BYZ0^00	560	25	1.3	9	36	25	-65	25	30	-	E	T4	2000	109.48	0.057
TWAD128*025□BYZ0^00	1200	25	0.65	5	20	7	-70	12	18	2600	D	T3	1000	234.60	0.169
TWAE188*025□BYZ0^00	1800	25	0.5	6	25	7	-75	12	20	3100	E	T4	2000	351.90	0.183
TWAE228*025□BYZ0^00	2200	25	0.5	10	80	10	-90	30	50	3200	E	T4	2000	430.10	0.224
TWAE308M025□BYZ0^00	3000	25	0.5	15	30	3.5	-80	60	85	3100	E	T4	500	586.50	0.306
TWAE478*025□BYZ0^00	4700	25	0.5	30	180	5	-90	60	80	4250	E	T4	500	918.85	0.479
30 VDC @ 85°C 20 VDC @ 125°C 18 VDC @ 200°C															
TWAA156*030□BYZ0^00	15	30	4.4	1	2	200	-20	10.5	16	-	A	T1	2000	4.25	0.021
TWAA566*030□BYZ0^00	56	30	5.2	2	9	200	-48	12	15	-	A	T1	2000	15.88	0.077
TWAA107*030□BYZ0^00	100	30	2.3	2	10	35	-38	20	25	1200	A	T1	500	28.35	0.137
TWAB107*030□BYZ0^00	100	30	2.3	2	12	60	-30	10.5	12	-	B	T2	500	28.35	0.044
TWAB157*030□BYZ0^00	150	30	2.5	2	18	40	-48	13	15	1100	B	T2	2000	42.53	0.065
TWAB227*030□BYZ0^00	220	30	0.9	4	20	17.5	-50	18	28	1800	B	T2	1000	62.37	0.096
TWAD307*030□BYZ0^00	300	30	1.8	8	32	25	-51	20	25	-	D	T3	2000	85.05	0.061
TWAD397*030□BYZ0^00	390	30	1.8	6	18	25	-65	18	25	-	D	T3	2000	110.57	0.080
TWAB477*030□BYZ0^00	470	30	1.0	2	10	15	-65	10	18	1800	B	T2	1000	133.25	0.205
TWAD477*030□BYZ0^00	470	30	1.0	3	25	15	-65	15	25	1600	D	T3	2000	133.25	0.096
TWAE567*030□BYZ0^00	560	30	1.3	9	36	25	-65	25	30	-	E	T4	2000	158.76	0.083
TWAD108*030□BYZ0^00	1000	30	0.7	7	25	7	-70	10	18	2500	D	T3	1000	283.50	0.205
50 VDC @ 85°C 30 VDC @ 125°C 30 VDC @ 200°C															
TWAA106*050□BYZ0^00	10	50	5.3	1	2	250	-24	8	9	715	A	T1	2000	7.96	0.039
TWAA336*050□BYZ0^00	33	50	5	2	9	200	-39	10	12	-	A	T1	2000	26.25	0.127
TWAB476*050□BYZ0^00	47	50	3	0.8	8	70	-28	13	15	1155	B	T2	500	37.39	0.057
TWAB606*050□BYZ0^00	60	50	2.6	2	12	60	-30	10.5	12	-	B	T2	500	47.73	0.073
TWAA686*050□BYZ0^00	68	50	2.5	2	10	45	-25	20	25	1050	A	T1	1000	54.09	0.262
TWAB826*050□BYZ0^00	82	50	2.4	2	16	60	-32	13	15	-	B	T2	500	65.23	0.100
TWAA107M050□BYZ0^00	100	50	5	2	15	70	-45	50	95	1500	A	T1	500	79.55	0.385
TWAB127*050□BYZ0^00	120	50	2.5	4	24	40	-42	12	15	-	B	T2	2000	95.46	0.147
TWAB227*050□BYZ0^00	220	50	0.9	4	20	17.5	-50	18	28	1800	B	T2	1000	175.01	0.269
TWAD277*050□BYZ0^00	270	50	1.8	8	32	25	-51	20	25	-	D	T3	2000	214.79	0.155
TWAE337*050□BYZ0^00	330	50	1.5	9	36	25	-46	25	30	1900	E	T4	2000	262.52	0.137
TWAE108*050□BYZ0^00	1000	50	0.7	11	110	20	-70	30	40	3200	E	T4	2000	795.50	0.415
TWAE158*050□BYZ0^00	1500	50	1	35	130	6	-75	45	55	3500	E	T4	1000	1193.25	0.622
60 VDC @ 85°C 40 VDC @ 125°C 36 VDC @ 200°C															
TWAA226*060□BYZ0^00	22	60	5	3	12	200	-34	10	12	500	A	T1	2000	25.25	0.122
TWAA276*060□BYZ0^00	27	60	5	3	12	200	-34	10	12	-	A	T1	2000	30.98	0.150
TWAA476*060□BYZ0^00	47	60	2	2	10	55	-25	15	25	1050	A	T1	500	53.93	0.261
TWAB506*060□BYZ0^00	50	60	2.6	2	12	60	-30	10.5	12	-	B	T2	500	57.38	0.088
TWAB686*060□BYZ0^00	68	60	2.5	2	16	60	-32	10.5	12	-	B	T2	500	78.03	0.120
TWAB107*060□BYZ0^00	100	60	2.5	1.7	10	40	-40	8	15	1100	B	T2	2000	114.75	0.176
TWAB157*060□BYZ0^00	150	60	1.5	2	10	30	-35	12	20	1650	B	T2	500	172.13	0.264
TWAD227*060□BYZ0^00	220	60	1.8	8	32	25	-45	16	20	-	D	T3	2000	252.45	0.182
TWAE277*060□BYZ0^00	270	60	1.3	9	36	25	-45	20	25	-	E	T4	2000	309.83	0.161
TWAE108*060□BYZ0^00	1000	60	0.5	20	60	4.5	-70	30	60	3200	E	T4	2000	1147.50	0.598
75 VDC @ 85°C 50 VDC @ 125°C 45 VDC @ 200°C															
TWAA226*075□BYZ0^00	22	75	5.1	3	12	157	-19	10	12	600	A	T1	2000	39.50	0.191
TWAA336*075□BYZ0^00	33	75	2.5	2	10	70	-25	15	25	1050	A	T1	1000	59.25	0.287
TWAB566*075□BYZ0^00	56	75	2.6	2	17	60	-30	10.5	15	-	B	T2	500	100.55	0.154
TWAA686M075□BYZ0^00	68	75	5	2	15	70	-45	50	95	1500	A	T1	500	122.09	0.591
TWAB826*075□BYZ0^00	82	75	2.5	4	24	37	-30	12	15	-	B	T2	500	147.23	0.226
TWAB117*075□BYZ0^00	110	75	1.5	2	10	30	-35	12	20	1650	B	T2	500	197.51	0.303
TWAD187*075□BYZ0^00	180	75	2.2	9	36	25	-40	16	20	-	D	T3	2000	323.19	0.233
TWAE227*075□BYZ0^00	220	75	1.2	5	50	20	-40	8	15	1800	E	T4	2000	395.01	0.206
TWAE477*075□BYZ0^00	470	75	0.9	10	125	10	-50	10	35	2750	E	T4	1000	843.89	0.440
TWAE687*075□BYZ0^00	680	75	0.9	11	110	10	-70	30	40	2750	E	T4	500	1220.94	0.636
TWAE757*075□BYZ0^00	750	75	0.7	12	120	10	-70	30	40	3800	E	T4	500	1346.63	0.702
TWAE108*075□BYZ0^00	1000	75	0.5	30	90	4.5	-70	30	60	3500	E	T4	1000	1795.50	0.936
100 VDC @ 85°C 65 VDC @ 125°C 60 VDC @ 200°C															
TWAA106M100□BYZ0^00	10	100	3.5	5	25	190	-18	10	30	1050	A	T1	2000	31.96	0.155

TWA-Y SERIES

High Temperature – COTS-Plus 200°C
Wet Electrolytic Tantalum Capacitor

RATINGS & PART NUMBER REFERENCE

Part Number	Cap (µF) 25°C at 120Hz	DC Rated Voltage (V) at 85°C	ESR Max (Ohms) at 120Hz	DC Leakage max (µA)		Impedance max (Ohms) -55°C at 120Hz	Maximum Capacitance Change (%)			AC Ripple (mA rms) 85°C at 40kHz	Case Size		Lifetime at 200°C (hrs.)
				+25°C	+85 &		-55°C	+85°C	+125°C		KAVX	DLA	
TWAA156*100□BYZ0^00	15	100	5.5	7	35	140	-18	10	30	1050	A	T1	500
TWAB226*100□BYZ0^00	22	100	4	1	5	100	-10	8	15	1065	B	T2	500
TWAB686*100□BYZ0^00	68	100	2.5	2	10	37	-30	4	12	1650	B	T2	500
TWAD157*100□BYZ0^00	150	100	1.6	3	25	22	-35	6	12	2100	D	T3	2000
TWAE227*100□BYZ0^00	220	100	1.2	5	50	15	-40	6	12	2750	E	T4	1000
TWAE337*100□BYZ0^00	330	100	0.8	6	60	10	-45	7	20	3600	E	T4	2000
TWAE407*100□BYZ0^00	400	100	0.8	10	150	10	-50	10	35	4100	E	T4	2000
TWAE477*100□BYZ0^00	470	100	0.7	15	150	10	-50	10	35	4100	E	T4	2000
TWAE567*100□BYZ0^00	560	100	1.0	25	200	10	-60	45	110	4100	E	T4	1500
TWAE757*100□BYZ0^00	750	100	0.6	30	150	5	-60	50	120	4200	E	T4	500
125 VDC @ 85°C 85 VDC @ 125°C 75 VDC @ 200°C													
TWAA106M125□BYZ0^00	10	125	5.5	1	5	190	-15	10	30	1050	A	T1	2000
TWAB276*125□BYZ0^00	27	125	4	2	10	100	-10	8	15	1200	B	T2	500
TWAB476*125□BYZ0^00	47	125	2.3	2	10	47	-25	5	12	1650	B	T2	1000
TWAD826*125□BYZ0^00	82	125	2.8	12	48	50	-30	15	17	-	D	T3	2000
TWAE826*125□BYZ0^00	82	125	1.6	2	10	39	-24	10	20	1900	E	T4	2000
TWAD107*125□BYZ0^00	100	125	1.8	3	25	35	-35	5	12	2100	D	T3	2000
TWAE157*125□BYZ0^00	150	125	1.6	5	50	20	-35	6	16	2750	E	T4	2000
TWAE227*125□BYZ0^00	220	125	1.4	10	50	12	-40	8	15	3600	E	T4	2000
TWAE337*125□BYZ0^00	330	125	1	15	150	20	-60	20	60	2500	E	T4	2000
TWAE477*125□BYZ0^00	470	125	1	30	160	25	-70	30	70	3500	E	T4	1000

ENERGY

Energy (mJ)	Energy / volume (mJ/mm³)
47.93	0.232
70.30	0.108
217.29	0.334
479.33	0.346
703.01	0.366
1054.52	0.550
1278.20	0.666
1501.89	0.783
1789.48	0.933
2396.63	1.249
49.96	0.242
134.88	0.207
234.79	0.360
409.63	0.296
409.63	0.213
499.55	0.361
749.33	0.391
1099.01	0.573
1648.52	0.859
2347.89	1.224

Energy is calculated by this formula (consider derating factor):

Energy = ½ C x ((Vr x X)² – Vx²)
where C = Capacitance
Vr = Rated Voltage
X = Recommended derating factor
Vx= 3V (invariable)

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2V. DCL is measured at rated voltage after 5 minutes.
NOTE: KYOCERA AVX reserves the rights to supply higher voltage rating in the same case size, to the same reliability standards.

DF = 2πfC x (ESR)
2π = 6.28
f = 120Hz
C = Actual measured capacitance
ESR = Actual measured ESR

RECOMMENDED DERATED FACTOR

Voltage and temperature derating as percentage of Vr