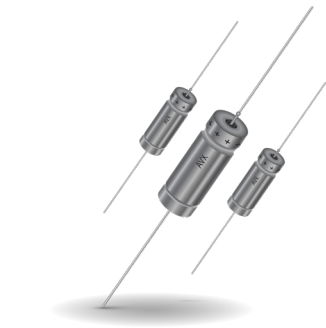


TWA SERIES

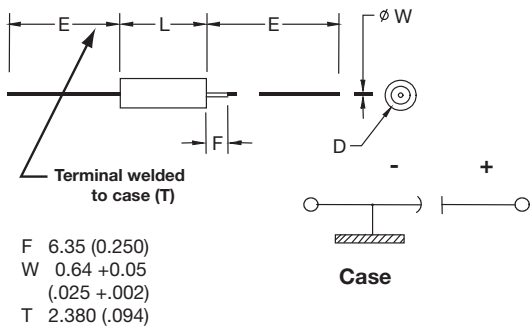
COTS-Plus – Wet Electrolytic Tantalum Capacitor



GENERAL DESCRIPTION

The TWA series is an axial leaded wet electrolytic tantalum capacitor with a unique cathode system that promotes very high CV (Capacitance/Voltage) per cc in traditional MIL-PRF-39006 case sizes. The series also utilizes a welded tantalum can and header assembly to provide a hermetic seal and subsequent long operating lifetime. The construction is similar to DLA 93026 with capability of meeting harsh shock and vibration conditions.

OUTLINE DIMENSIONS



CASE DIMENSIONS: millimeters (inches)

DLA Case Size	AVX 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 125°C)

Voltage (DC)									
Rated Voltage: (V _R)	85°C	15	25	30	50	60	75	100	125
Derated Voltage: (V _D)	125°C	10	15	20	30	40	50	65	85
Surge Voltage: (V _S)	85°C	17.3	28.8	34.5	57.5	69	86.3	115	144

HOW TO ORDER

AVX PART NUMBER:

TWA

Type

E

Case Size

407

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%

100

Voltage Code

Insulation Sleeve

C = Without Sleeve
S = With Sleeve

B

Packaging

B = Tray Pack

#

Qualification

E = Extended range
S = COTS+
L = Group A

Z

Reliability

Z = Non-ER

0

Qualification Level

0 = N/A

^

Termination Finish

0 = Sn/Pb 60/40
7 = Matte tin

00

Custom Test Options

00 = Standard
01 = Random vibration*



* Please contact the factory for additional details and availability.

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 (VR) to 85°C							
µF	Code	15V	25V	30V	50V	60V	75V	100V	125V
10	106							A ^(M)	A
15	156							A	
22	226							B	
27	276								B
33	336						A		
47	476				B	A			B
68	686		A		A		A ^(M)	B	
82	826								E
100	107			A	A ^(M)	B	B		D
110	117						B		
120	127		A		B				D
150	157				B	B		D	E
220	227			B	B		E	D,E	E
270	277		B						
330	337		B		E		D,E	E	E
390	397	D				D			
400	407							E	
470	477			B	D,E		E	E	E
560	567		B			E		E	
660	667						E		
680	687		E	D,E	E	E	E		
750	757		D,E	D,E	E	E	E	E	
1000	108		D,E	D,E	D,E	E	E		
1200	128		D		E				
1500	158		E	E	E				
1800	188		E						
2200	228		E			E ^(M)			
3000	308				E				
4700	478		E						
5600	568								

Available Ratings ^(M tolerance only)

TWA SERIES

COTS-Plus – Wet Electrolytic Tantalum Capacitor



RATINGS & PART NUMBER REFERENCE

AVX 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	
				+25°C	+85°C & +125°C		-55°C	+85°C	+125°C		AVX	DLA
15 Volts												
TWAD397*015□BSZ0*00	390	15	1.7	7	28	48	-70	25	25	1396	D	T3
25 Volts												
TWAA686*025□BEZ0*00	68	25	2.5	0.6	3	45	-40	12	15	850	A	T1
TWAA127*025□BSZ0000	120	25	1.3	1	5	25	-42	8	12	1250	A	T1
TWAA127*025□BEZ0*00*	120	25	2.3	2	10	35	-42	20	25	1250	A	T1
TWAB277*025□BEZ0*00	270	25	0.9	4	20	17.5	-50	18	28	1800	B	T2
TWAB337*025□BEZ0*00	330	25	1.3	2	20	25	-60	10	15	1550	B	T2
TWAB567*025□BSZ0*00	560	25	0.83	2	10	12	-65	10	15	2100	B	T2
TWAE687*025□BEZ0*00	680	25	0.75	3	12	12	-50	8	15	2100	E	T4
TWAD757*025□BEZ0*00	750	25	1	3	25	15	-50	8	15	2000	D	T3
TWAE757*025□BEZ0*00	750	25	0.75	3.5	16	9	-55	10	18	2200	E	T4
TWAD108*025□BEZ0*00	1000	25	1	4	30	15	-50	8	15	2300	D	T3
TWAE108*025□BEZ0*00	1000	25	0.7	4	20	9	-55	10	18	2400	E	T4
TWAD128*025□B#Z0*00	1200	25	0.65	5	20	7	-70	12	18	2600	D	T3
TWAE158*025□BEZ0*00	1500	25	0.5	6	24	7	-65	15	20	2850	E	T4
TWAE188*025□BSZ0*00	1800	25	0.5	6	25	7	-75	12	20	3100	E	T4
TWAE228*025□BSZ0*00	2200	25	0.5	10	80	10	-90	30	50	3200	E	T4
TWAE478*025□B#Z0*00	4700	25	0.5	30	180	5	-90	60	80	4250	E	T4
30 Volts												
TWAA107*030□BSZ0000	100	30	1.3	1	5	25	-38	8	12	1200	A	T1
TWAA107*030□BEZ0*00*	100	30	2.3	2	10	35	-38	20	25	1200	A	T1
TWAB227*030□BEZ0*00	220	30	2	1.9	10	40	-40	18	28	1200	B	T2
TWAB477*030□BSZ0*00	470	30	0.85	2	10	15	-65	10	18	1800	B	T2
TWAD687*030□BEZ0*00	680	30	1	3.3	25	15	-50	8	15	1900	D	T3
TWAE687*030□BEZ0*00	680	30	0.8	4.5	18	10	-60	8	15	2100	E	T4
TWAD757*030□BEZ0*00	750	30	1	3.6	30	15	-50	8	15	2000	D	T3
TWAE757*030□BEZ0*00	750	30	0.8	5	20	10	-65	10	18	2200	E	T4
TWAD108*030□B#Z0*00	1000	30	0.7	7	25	7	-70	10	18	2500	D	T3
TWAE108*030□BEZ0*00	1000	30	0.7	5	20	7	-70	10	18	2500	E	T4
TWAE158*030□BSZ0*00	1500	30	0.6	12	35	6	-72	10	20	3000	E	T4
50 Volts												
TWAB476*050□BSZ0*00	47	50	3	0.8	8	70	-28	13	15	1155	B	T2
TWAA686*050□BSZ0000	68	50	1.5	1	5	35	-25	8	15	1050	A	T1
TWAA686*050□BEZ0*00*	68	50	2.5	2	10	45	-25	20	25	1050	A	T1
TWAA107M050□BSZ0*00	100	50	5	2	15	70	-45	50	95	1500	A	T1
TWAB127*050□BEZ0*00	120	50	2	2	10	40	-45	8	15	1200	B	T2
TWAB157*050□BEZ0*00	150	50	2	2	10	25	-50	8	15	1400	B	T2
TWAB227*050□BSZ0000	220	50	0.9	2	10	17.5	-50	8	15	1800	B	T2
TWAB227*050□BEZ0*00*	220	50	0.9	4	20	17.5	-50	18	28	1800	B	T2
TWAE337*050□B#Z0*00	330	50	0.8	2.5	25	15	-50	8	15	1900	E	T4
TWAD477*050□BSZ0*00	470	50	0.75	3	25	10	-50	8	15	2100	D	T3
TWAD477*050□BEZ0*00*	470	50	1	3	25	11	-50	8	15	2100	D	T3
TWAE477*050□B#Z0*00	470	50	0.75	3	30	10	-50	8	15	2200	E	T4
TWAE687*050□B#Z0*00	680	50	0.7	5	40	8	-58	10	20	2750	E	T4
TWAE757*050□BEZ0*00	750	50	0.6	12	60	8	-50	15	20	2800	E	T4
TWAD108*050□BEZ0*00	1000	50	1.5	20	125	12	-90	100	140	2500	D	T3
TWAE108*050□BSZ0*00	1000	50	1.0	12	90	20	-90	30	50	3200	E	T4
TWAE108*050□BEZ0*00*	1000	50	0.7	11	110	20	-70	30	40	3200	E	T4
TWAE128*050□BSZ0*00	1200	50	1.0	12	90	20	-90	30	50	3200	E	T4
TWAE158*050□BSZ0*00	1500	50	1	35	130	6	-75	45	55	3500	E	T4
TWAE308M050□B#Z0*00	3000	50	0.3	30	150	3.5	-80	60	85	3100	E	T4
TWAE308K050□BSZ0*00	3000	50	0.6	30	150	5	-90	90	100	3100	E	T4
60 Volts												
TWAA476*060□BSZ0000	47	60	2	1	5	44	-25	8	12	1050	A	T1
TWAA476*060□BEZ0*00*	47	60	2	2	10	55	-25	15	25	1050	A	T1
TWAB107*060□BSZ0*00	100	60	1.5	1.7	10	30	-35	12	20	1650	B	T2
TWAB107*060□BEZ0*00*	100	60	2.5	1.7	10	40	-40	8	15	1100	B	T2
TWAB157*060□BSZ0000	150	60	1.1	2	10	20	-40	8	15	1650	B	T2
TWAB157*060□BEZ0*00*	150	60	1.5	2	10	30	-35	12	20	1650	B	T2
TWAD397*060□B#Z0*00	390	60	0.9	3	25	15	-60	8	15	2100	D	T3
TWAE567*060□B#Z0*00	560	60	0.8	5	40	10	-58	8	15	2750	E	T4
TWAE687*060□BEZ0*00	680	60	0.6	13	65	8	-50	15	20	2800	E	T4
TWAE757*060□BEZ0*00	750	60	0.6	15	75	8	-50	15	20	2800	E	T4
TWAE108*060□BSZ0*00	1000	60	1	12	90	20	-90	30	50	3200	E	T4
TWAE108*060□BEZ0*00*	1000	60	0.5	20	60	4.5	-70	30	60	3200	E	T4
TWAE228M060□BEZ0*00	2200	60	0.5	40	120	3.0	-80	60	80	3000	E	T4



The Important Information/Disclaimer is incorporated in these specifications by reference and should be reviewed in full before placing any order.

TWA SERIES

COTS-Plus Wet Electrolytic Tantalum Capacitor of Contents



RATINGS & PART NUMBER REFERENCE

AVX 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	
				+25°C	+85°C & +125°C		-55°C	+85°C	+125°C		AVX	DLA
75 Volt												
TWAA336*075□BSZ0000	33	75	2.5	1	5	66	-25	5	9	1050	A	T1
TWAA336*075□BEZ0*00*	33	75	2.5	2	10	70	-25	15	25	1050	A	T1
TWAA686M075□BSZ0*00	68	75	5	2	15	70	-45	50	95	1500	A	T1
TWAB107*075□BEZ0*00	100	75	2.5	2	10	40	-35	6	10	1400	B	T2
TWAB117*075□BSZ0000	110	75	1.3	2	10	24	-35	6	10	1650	B	T2
TWAB117*075□BEZ0*00*	110	75	1.5	2	10	30	-35	12	20	1650	B	T2
TWAE227*075□B#Z0*00	220	75	1.1	2.5	30	20	-50	6	10	1800	E	T4
TWAD337*075□BSZ0*00	330	75	1	3	30	12	-45	6	10	2100	D	T3
TWAD337*075□BEZ0*00*	330	75	1.2	3	30	15	-60	10	20	2100	D	T3
TWAE337*075□BEZ0*00	330	75	1	3	40	12	-50	6	10	2200	E	T4
TWAE477*075□B#Z0*00	470	75	0.9	5	50	12	-55	6	10	2750	E	T4
TWAE667*075□BSZ0*00	660	75	0.7	12	120	10	-70	30	40	2750	E	T4
TWAE687*075□BEZ0*00*	680	75	0.9	11	110	10	-70	30	40	2750	E	T4
TWAE757*075□B#Z0*00	750	75	0.7	12	120	10	-70	30	40	3800	E	T4
TWAE108*075□BEZ0*00	1000	75	0.5	30	90	4.5	-70	30	60	3500	E	T4
100 Volt												
TWAA106M100□BSZ0*00	10	100	3.5	5	25	190	-18	10	30	1050	A	T1
TWAA156*100□BSZ0000	15	100	3.5	1	5	125	-18	3	10	1050	A	T1
TWAA156*100□BEZ0*00*	15	100	5.5	7	35	140	-18	10	30	1050	A	T1
TWAB226*100□BSZ0*00	22	100	4	1	5	100	-10	8	15	1065	B	T2
TWAB686*100□BSZ0000	68	100	2.1	2	10	37	-30	4	12	1650	B	T2
TWAB686*100□BEZ0*00*	68	100	2.5	2	10	37	-30	4	12	1650	B	T2
TWAD157*100□B#Z0*00	150	100	1.6	3	25	22	-35	6	12	2100	D	T3
TWAD227*100□BEZ0*00	220	100	1.4	5	25	18	-50	10	15	2500	D	T3
TWAE227*100□B#Z0*00	220	100	1.2	5	50	15	-40	6	12	2750	E	T4
TWAE337*100□B#Z0*00	330	100	0.8	6	60	10	-45	7	20	3600	E	T4
TWAE407*100□B#Z0*00	400	100	0.8	10	150	10	-50	10	35	4100	E	T4
TWAE477*100□BSZ0*00	470	100	0.7	15	150	10	-50	10	35	4100	E	T4
TWAE567*100□BSZ0*00	560	100	1.0	25	200	10	-60	45	110	4100	E	T4
TWAE757*100□BEZ0*00	750	100	0.6	30	150	5	-60	50	120	4200	E	T4
125 Volt												
TWAA106*125□BSZ0000	10	125	5.5	1	5	175	-15	3	10	1050	A	T1
TWAA106M125□BEZ0*00*	10	125	5.5	1	5	190	-15	10	30	1050	A	T1
TWAB276*125□BSZ0*00	27	125	4	2	10	100	-10	8	15	1200	B	T2
TWAB476*125□B#Z0*00	47	125	2.3	2	10	47	-25	5	12	1650	B	T2
TWAE826*125□BSZ0*00	82	125	1.6	2	10	39	-24	10	20	1900	E	T4
TWAD107*125□B#Z0*00	100	125	1.8	3	25	35	-35	5	12	2100	D	T3
TWAD127*125□BEZ0*00	120	125	1.8	3	25	35	-35	5	12	2100	D	T3
TWAE157*125□B#Z0*00	150	125	1.6	5	50	20	-35	6	12	2750	E	T4
TWAE227*125□BEZ0*00	220	125	1.4	10	50	12	-40	8	15	3600	E	T4
TWAE337*125□B#Z0*00	330	125	1	15	150	20	-60	20	60	2500	E	T4
TWAE477*125□BSZ0*00	470	125	1	30	160	25	-70	30	70	3500	E	T4

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: AVX reserves the rights to supply higher voltage rating in the same case size, to the same reliability standards.

*Not recommended for new designs, for new design use part number with Inspection level "S" – COTS-Plus

DF = $2\pi fC \times \text{ESR}$

$2\pi = 6.28$

$f = 120\text{Hz}$

C = Actual measured capacitance

ESR = Actual measured ESR

IMPORTANT INFORMATION/DISCLAIMER

All product specifications, statements, information and data (collectively, the “Information”) in this datasheet or made available on the website are subject to change. The customer is responsible for checking and verifying the extent to which the Information contained in this publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without guarantee, warranty, or responsibility of any kind, expressed or implied.

Statements of suitability for certain applications are based on AVX’s knowledge of typical operating conditions for such applications, but are not intended to constitute and AVX specifically disclaims any warranty concerning suitability for a specific customer application or use.

ANY USE OF PRODUCT OUTSIDE OF SPECIFICATIONS OR ANY STORAGE OR INSTALLATION INCONSISTENT WITH PRODUCT GUIDANCE VOIDS ANY WARRANTY.

The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by AVX with reference to the use of AVX’s products is given without regard, and AVX assumes no obligation or liability for the advice given or results obtained.

Although AVX designs and manufactures its products to the most stringent quality and safety standards, given the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage.

Unless specifically agreed to in writing, AVX has not tested or certified its products, services or deliverables for use in high risk applications including medical life support, medical device, direct physical patient contact, water treatment, nuclear facilities, weapon systems, mass and air transportation control, flammable environments, or any other potentially life critical uses. Customer understands and agrees that AVX makes no assurances that the products, services or deliverables are suitable for any high-risk uses. Under no circumstances does AVX warrant or guarantee suitability for any customer design or manufacturing process.

Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated or that other measures may not be required.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

AVX:

TWAE108K060CBSZ0000	TWAE687K050CBSZ0000	TWAA156K100CBSZ0000	TWAB227K050CBSZ0000
TWAD107K125CBSZ0000	TWAB567K025CBSZ0000	TWAA476K060CBSZ0000	TWAE157K125CBSZ0000
TWAB157K060CBSZ0000	TWAD108K030CBSZ0000	TWAB477K030CBSZ0000	TWAE228K025CBSZ0000
TWAE158K030CBSZ0000	TWAD477K050CBSZ0000	TWAE227K100CBSZ0000	TWAB117K075CBSZ0000
TWAB686K100CBSZ0000	TWAB476K125CBSZ0000	TWAD157K100CBSZ0000	TWAD128K025CBSZ0000
TWAD337K075CBSZ0000	TWAE567K060CBSZ0000	TWAA686K050CBSZ0000	TWAE188K025CBSZ0000
TWAE477K075CBSZ0000	TWAA336K075CBSZ0000	TWAD397K060CBSZ0000	TWAA106K125CBSZ0000
TWAA107K030CBSZ0000	TWAA127K025CBSZ0000	TWAE687K050CBDZ0000	TWAE227K100CBDZ0000
TWAD157K100CBDZ0000	TWAB157K060SBDZ0000	TWAA476K060SBDZ0000	TWAE567K060CBDZ0000
TWAA127K025CBDZ0000	TWAA686K050SBDZ0000	TWAB476K125CBDZ0000	TWAE477K075CBDZ0000
TWAE157K125SBDZ0000	TWAD337K075CBDZ0000	TWAE157K125CBDZ0000	TWAB117K075CBDZ0000
TWAB567K025SBDZ0000	TWAB227K050CBDZ0000	TWAE157M125CBSZ0000	TWAE158K050CBSZ0000
TWAE567K060SBDZ0000	TWAA336K075SBDZ0000	TWAE477K075SBDZ0000	TWAA107K030SBDZ0000
TWAA336K075SBSZ0000	TWAA336M075SBDZ0000	TWAA686M050SBDZ0000	TWAB157K060SBSZ0000
TWAB227M050SBDZ0000	TWAB476K125SBDZ0000	TWAB686K100SBDZ0000	TWAD107K125SBSZ0000
TWAD108K030SBDZ0000	TWAD337M075SBDZ0000	TWAD397K060SBDZ0000	TWAD397K060SBSZ0000
TWAE108K050SBSZ0000	TWAE108K060SBDZ0000	TWAE108M060CTSZ0000	TWAE109K010SBSZ0000
TWAE157M125SBDZ0000	TWAE158K030SBDZ0000	TWAE227M100SBSZ0000	TWAE477K075SBSZ0000
TWAE687K050SBDZ0000	TWAE227M100SBDZ0000	TWAD477M050SBDZ0000	TWAB117K075SBDZ0000
TWAB227K050SBDZ0000	TWAD107K125SBDZ0000	TWAD128K025SBDZ0000	TWAD157K100SBDZ0000
TWAD337K075SBDZ0000	TWAE227K100SBDZ0000	TWAE108K060SBSZ0000	TWAB117M075CBSZ0000
TWAB686M100CBSZ0000	TWAD108M060CBSZ0000	TWAD397M060CBSZ0000	TWAE108M060CBSZ0000
TWAE228M025CBSZ0000	TWAE687M050CBSZ0000	TWAD337M075CBSZ0000	TWAB157M060CBSZ0000
TWAB567M025CBSZ0000	TWAD157M100CBSZ0000	TWAE128K050CBSZ0000	TWAA106M125CBSZ0000
TWAA476M060CBSZ0000	TWAB476M125CBSZ0000	TWAE757K075SBSZ0000	TWAE227K100SBSZ0000