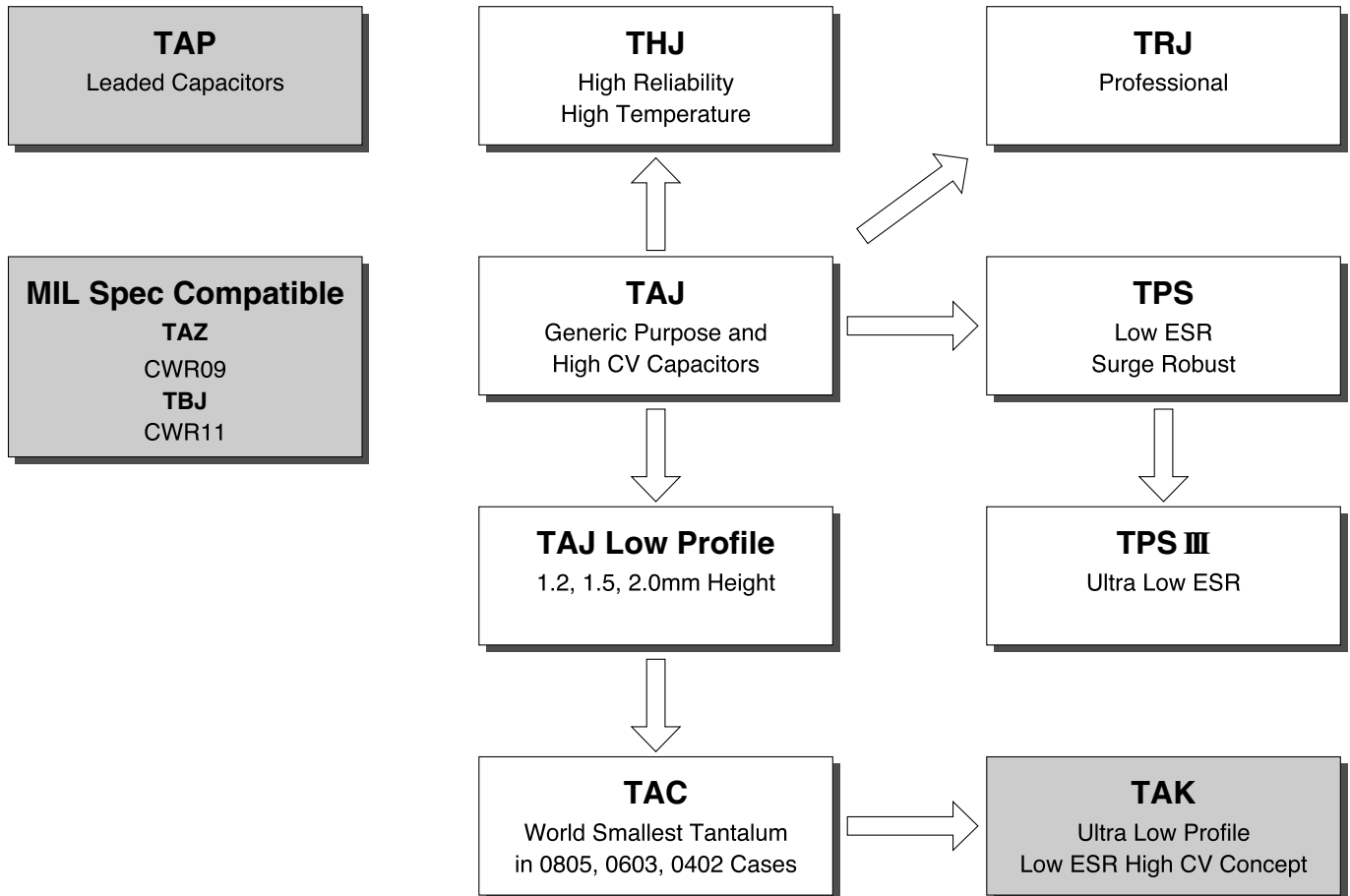
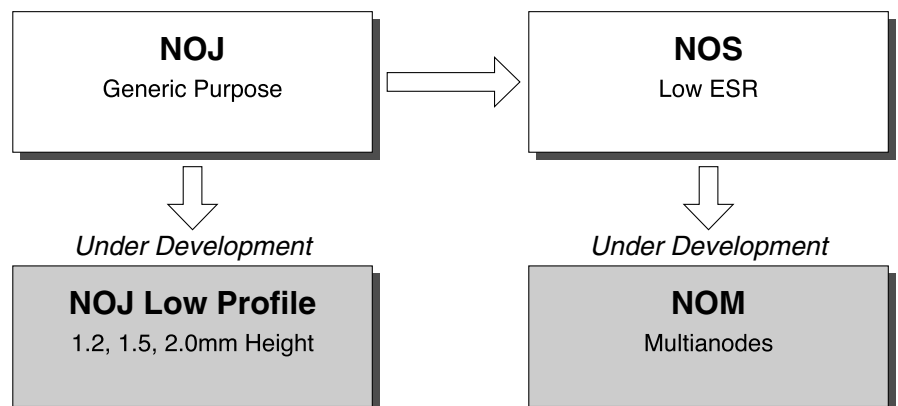


AVX, the world's leading manufacturer of Tantalum capacitors, has now released the world's first Niobium Oxide Capacitors. AVX Niobium Oxide Capacitors are drawing worldwide attention because of their non-burn technology and availability and stability of raw materials supply. AVX is committed to total customer satisfaction by delivering products of the highest quality, providing strong technical support, and at competitive prices. With one of the fullest lineups in the capacitor business, AVX can satisfy a broad range of customer needs in a myriad of applications.

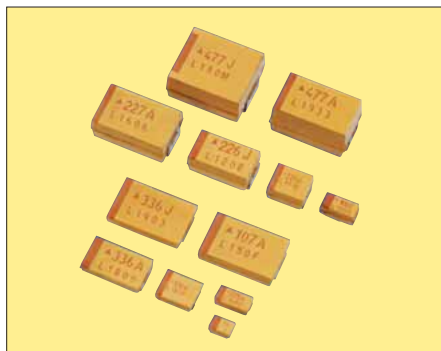
## Tantalum Series Guide



## Niobium Oxide Series Guide



: Please contact your nearest AVX / Kyocera sales office.



**Pb Free**

**RoHS Compliant**

## Features

- 50V type is Available
- 1500 $\mu$ F/4V(V case) is available

## Applications

- Electronic equipment in general

## How to Order

TAJ A 106 M 010 Y  
① ② ③ ④ ⑤ ⑥

- ① Series
- ② Case size (See Table)
- ③ Capacitance ( $\mu$ F)  
(Code : 2 significant digits and number of zeros)
- ④ Tolerance

<b>K</b>	$\pm 10\%$	<b>M</b>	$\pm 20\%$
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- ⑤ Rated DC voltage

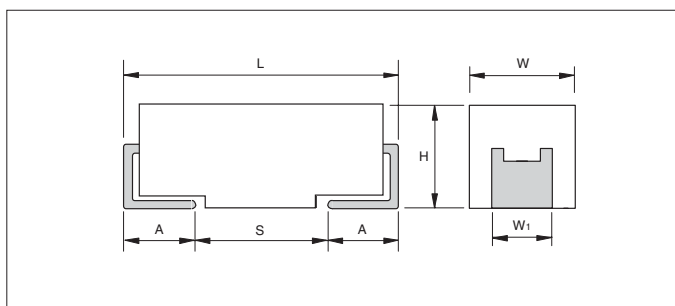
<b>ex.</b>		<b>006</b>	6.3VDC
<b>004</b>	4VDC	<b>016</b>	16VDC

- ⑥ Packaging

<b>NIL</b>	Bulk
<b>Y*</b>	7" reel taping (Lead-Free Products)

\*Contact your local AVX sales office for Lead-Free Products.

## Case Dimensions



(Unit : mm)

Case size	L	W	H	W <sub>1</sub>	A	S min
<b>TAJ A</b>	3.2 $\pm 0.2$	1.6 $^{+0.2}_{-0.1}$	1.6 $^{+0.2}_{-0.1}$	1.2 $\pm 0.2$	0.8 $^{+0.3}_{-0.2}$	1.1
<b>B</b>	3.5 $\pm 0.2$	2.8 $^{+0.2}_{-0.1}$	1.9 $^{+0.2}_{-0.1}$	2.2 $\pm 0.2$	0.8 $^{+0.3}_{-0.2}$	1.4
<b>C</b>	6.0 $\pm 0.2$	3.2 $^{+0.2}_{-0.1}$	2.6 $^{+0.2}_{-0.1}$	2.2 $\pm 0.2$	1.3 $^{+0.3}_{-0.2}$	2.9
<b>D</b>	7.3 $\pm 0.2$	4.3 $^{+0.2}_{-0.1}$	2.9 $^{+0.2}_{-0.1}$	2.4 $\pm 0.2$	1.3 $^{+0.3}_{-0.2}$	4.4
<b>E</b>	7.3 $\pm 0.2$	4.3 $^{+0.2}_{-0.1}$	4.1 $^{+0.2}_{-0.1}$	2.4 $\pm 0.2$	1.3 $^{+0.3}_{-0.2}$	4.4
<b>V</b>	7.3 $\pm 0.2$	6.1 $^{+0.2}_{-0.1}$	3.45 $^{+0.2}_{-0.1}$	3.1 $\pm 0.2$	1.4 $^{+0.3}_{-0.2}$	4.4
<b>R</b>	2.05 $\pm 0.2$	1.3 $^{+0.2}_{-0.1}$	1.2max	1.2 $\pm 0.2$	0.5 $^{+0.3}_{-0.2}$	0.85
<b>S</b>	3.2 $\pm 0.2$	1.6 $^{+0.2}_{-0.1}$	1.2max	1.2 $\pm 0.2$	0.8 $^{+0.3}_{-0.2}$	1.1
<b>T</b>	3.5 $\pm 0.2$	2.8 $^{+0.2}_{-0.1}$	1.2max	2.2 $\pm 0.2$	0.8 $^{+0.3}_{-0.2}$	1.4
<b>P</b>	2.05 $\pm 0.2$	1.3 $^{+0.2}_{-0.1}$	1.5max	1.2 $\pm 0.2$	0.5 $^{+0.3}_{-0.2}$	0.85
<b>W</b>	6.0 $\pm 0.2$	3.2 $^{+0.2}_{-0.1}$	1.5max	2.2 $\pm 0.2$	1.3 $^{+0.3}_{-0.2}$	2.9
<b>X</b>	7.3 $\pm 0.2$	4.3 $^{+0.2}_{-0.1}$	1.5max	2.4 $\pm 0.2$	1.3 $^{+0.3}_{-0.2}$	4.4
<b>Y</b>	7.3 $\pm 0.2$	4.3 $^{+0.2}_{-0.1}$	2.0max	2.4 $\pm 0.2$	1.3 $^{+0.3}_{-0.2}$	4.4

## Specifications

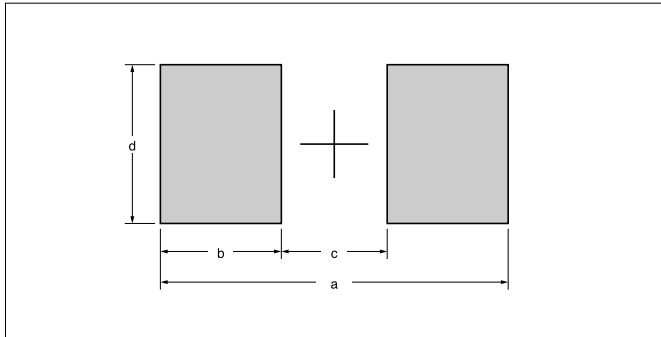
<b>Capacitance Range</b>	0.1 $\mu$ F to 1500 $\mu$ F									
<b>Capacitance Tolerance</b>	$\pm 20\%$ , $\pm 10\%$									
<b>Rated Voltage (V<sub>R</sub>) <math>\leq +85^{\circ}</math>C</b>	2	4	6.3	10	16	20	25	35	50	
<b>Category Voltage (V<sub>C</sub>) <math>\leq +125^{\circ}</math>C</b>	1.3	2.7	4	6.3	10	13	16	23	33	
<b>Surge Voltage (V<sub>S</sub>)</b>	$\leq +85^{\circ}$ C	2.7	5.2	8	13	20	26	32	46	65
	$\leq +125^{\circ}$ C	1.7	3.2	5	8	12	16	20	28	40
<b>Temperature Range</b>	-55 $^{\circ}$ C to +125 $^{\circ}$ C									

## Capacitance and Voltage Range

Capacitance $\mu\text{F}$	Capacitance Range(letter denotes case code)									
	Rated Voltage									
	CODE	2.5V	4V	6.3V	10V	16V	20V	25V	35V	50V
0.1	104						R/S		A/S	A
0.15	154						R/S		A/S	A/B
0.22	224						R/S		A/S	A/B
0.33	334						R/S		A/S	B
0.47	474						R/S	A/S	A/B/S/T	B/C
0.68	684					R/S	R/S/T	A/S	A/B/S/T	B/C
1.0	105				R/S	R/S/T	A/R/S/T	A/S	A/B/S/T	B/C
1.5	155			R/S	R/S	R/S	A/S/T	A/B/T	A/B/C/T	C/D
2.2	225		R/S	R/S	R/S	R/S	A/R/S/T	A/B/T	A/B/C/T	C/D
3.3	335		R/S	R/S	R/S/T	R/S/T	A/R/S/T	A/B/T	A/B/T	C/D/Y
4.7	475	R	R/S	R/S/T	A/R/S/T	A/R/S/T	A/B/P/S/T	A/B/T	B	B/C/D/W
6.8	685	R	S/T	R/S/T	R/S/T	A/P/S/T	A/B/T	B/C	B/C/W	C/D/Y
10	106	S	R/S/T	A/R/S/T	A/P/S/T	A/P/S/T	A/B/C/W/T	B/C/W	C/D/W	C/D/E/X/Y
15	156		R/S/T	A/P/S/T	A/B/T/W	A/B/T/W	B/C/W	B/C/W	C/D/Y	C/D
22	226	P	P/S/T	A/S/T/W	A/B/T/W	A/B/T/W	B/C/D/W	B/C/D/W/Y	C/D/Y	D/E
33	336	P/S	A/W/T	A/T/W	B/C/W	B/C/D/W/Y	C/D/Y	D/E	D/E	
47	476	A	A/W/T	B/C/T/W	B/C/W/Y	C/D/X/Y	C/D/E/Y	D/E	E	
68	686	A	B/W	B/C/W	C/W/Y	C/D/X/Y	D/E/Y	D/E/Y	E/V	
100	107		B/W	B/C/W/Y	C/D/X/Y	C/D/X/Y	D/E/Y	D/E/V	V	
150	157	B	B/W/Y	C/D/X/Y	C/D/E/X/Y	D/E/Y	D/E/V	E/V		
220	227	B/D	C/D/W/X/Y	C/D/E/X/Y	D/E/Y	E/V				
330	337	D	C/D/X	D/E/Y	D/E/V	EV				
470	477	C/D/Y	D/E/Y	D/E/V	EV					
680	687	D/Y	D/E	E/V						
1000	108	D/E	E/V	V						
1500		V	V							

XXXX

## Recommended Land Pattern



## Case Dimensions

(Unit : mm)

Case size	a	b	c	d
TAJ A	4.0	1.4	1.2	1.8
B	4.0	1.4	1.2	2.8
C	6.5	2.0	2.5	2.8
D	8.0	2.0	4.0	3.0
E	8.0	2.0	4.0	3.0
V	8.3	2.3	3.7	6.2
R	2.7	1.0	1.0	1.6
S	4.0	1.4	1.0	1.8
T	4.0	1.4	1.0	2.8
P	2.7	1.0	1.0	1.6
W	6.5	2.0	2.5	2.8
Y	8.0	2.0	4.0	3.0

## Packaging

Tape and reel packaging for automatic component placement.  
Please enter required suffix code, R or S on order.

### • Taping (TAJ, TPS, TAC, THJ, NOJ)

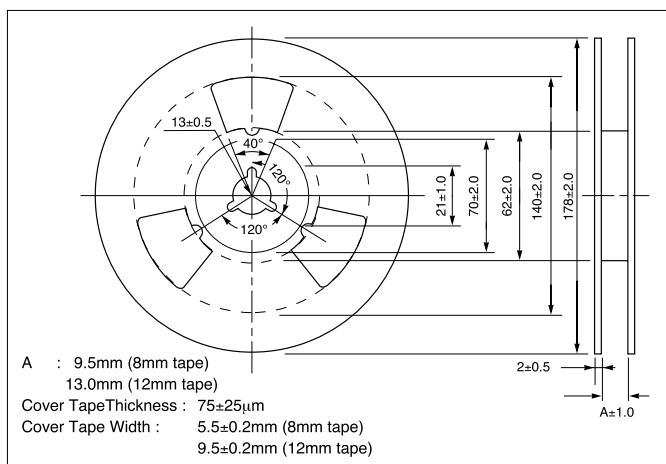
(Unit : mm)

Case size	Tape width (mm)	P (mm)	103mm (4")real		180mm (7")real	
			Code	Quantity	Code	Quantity
A	8	4			R/Y	2000
B	8	4			R/Y	2000
C	12	8			R/Y	500
D	12	8			R/Y	500
E	12	8			R/Y	400
V	12	8			R/Y	400
R	8	4			R/Y	2500
S	8	4			R/Y	2500
T	8	4			R/Y	2500
W	12	8			R/Y	1000
Y	12	8			R/Y	1000
P	8	4			R/Y	2500
TACK	8	2	X	1000	R	10000
TACL	8	4	X	500	R	3500
TACR	8	4	X	500	R	2500
TACA	8	4	X	500	R	2000
TACH	8	4	X	500	R	2500
TACU	8	4	X	500	R	2500
TACX	8	4	X	500	R	2000

Case size	Total Tape thickness-Kmax		
	TAC/TAJ/TPS		
	K(max)	Ao	Bo
A	1.87	1.83	3.57
B	2.22	3.15	3.77
C	2.92	3.45	6.40
D	3.22	4.48	7.62
E	4.50	4.50	7.50
V	3.84	6.43	7.44
R	1.30	1.65	2.45
S	1.30	1.95	3.55
T	1.30	3.20	3.80
W	1.65	3.57	6.40
Y	2.15	4.67	7.62
P	1.60	1.65	2.45
TACK	0.75	0.80	1.35
TACL	1.10	1.025	1.95
TACR	1.70	1.70	2.45
TACA	1.87	1.83	3.57
TACH	1.10	1.70	2.45
TACU	0.80	1.70	2.45
TACX	1.87	1.83	3.57

### • Reel

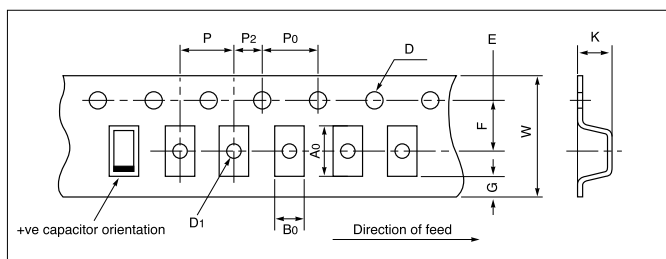
(Unit : mm)



(Unit : mm)

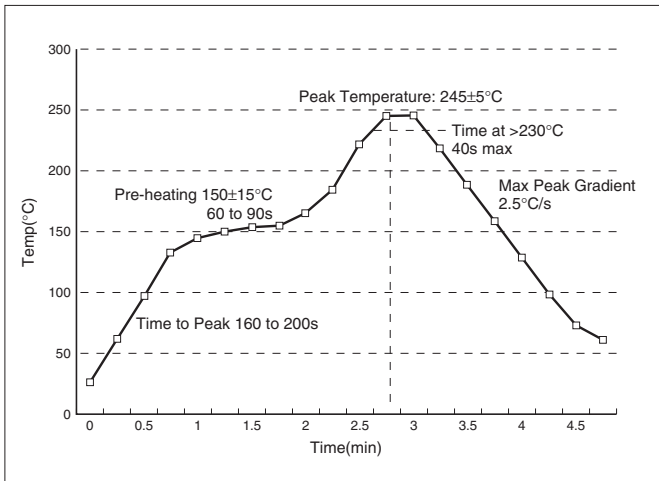
Code	8mm tape	12mm tape
P	4±0.1 or 8±0.1	4±0.1 or 8±0.1
G	1.75min	1.75min
F	3.5±0.05	5.5±0.05
E	1.75±0.1	1.75±0.1
W	8±0.3	12±0.3
P <sub>2</sub>	2±0.05	2±0.05
P <sub>0</sub>	4±0.1	4±0.1
D	1.5 <sup>+0.1</sup> <sub>-0</sub>	1.5 <sup>+0.1</sup> <sub>-0</sub>
D <sub>1</sub>	1.0min	1.5min

### • Carrier Tape Dimensions



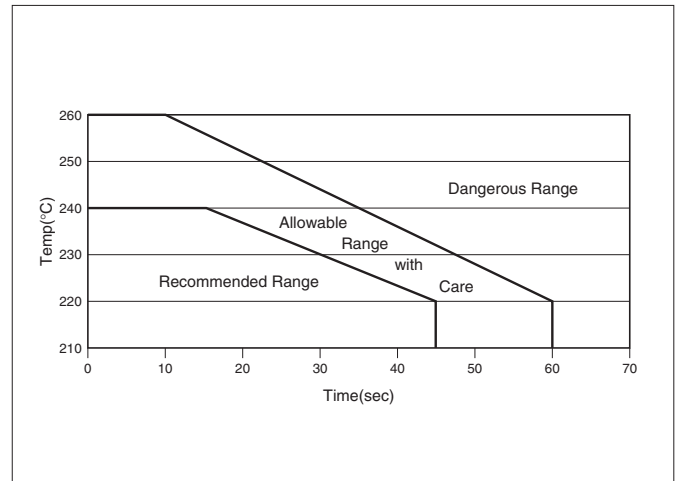
Tape dimensions comply to EIA 481 A.  
Dimensions A<sub>o</sub> and B<sub>o</sub> of the pocket and the tape thickness, K, are dependent on the components size.  
Tape material do not affect component solderability during storage.  
Carrier tape thickness < 0.4mm.

### Recommended Reflow Profile for Lead-Free Product



Please contact us for Lead-Free Products.

### Allowable range of peak temp./time combination for IR reflow



### Technical Summary

#### 1. Voltage Derating

We can offer to use AVX software "Select-a-Cap" to select a part number for safety use.

#### 2. Surge Current

As a general rule of thumb, the maximum current a tantalum capacitor can withstand is given by the following equation.

$$I_{\text{max}} = V_{\text{rated}} / (1 + \text{Catalog ESR})$$

So for example for D case/100uF/10V capacitor (Catalog ESR = 0.9 Ohms)

This would be :

$$I_{\text{max}} = 10 / (1 + 0.9) = 5.2\text{Amps}$$

#### 3. If more aggressive mounting techniques are to be used, please contact AVX Tantalum for guidance.

#### 4. Reverse Voltage

The values quoted are not intended to cover continuous reverse operation.

The peak reverse voltage applied to the capacitor must not exceed.

- 10% of rated DC voltage to a maximum of 1V at  $25^\circ\text{C}$ .
- 3% of rated DC voltage to a maximum of 0.5V at  $85^\circ\text{C}$ .
- 1% of category DC voltage to a maximum of 0.1V at  $125^\circ\text{C}$ .