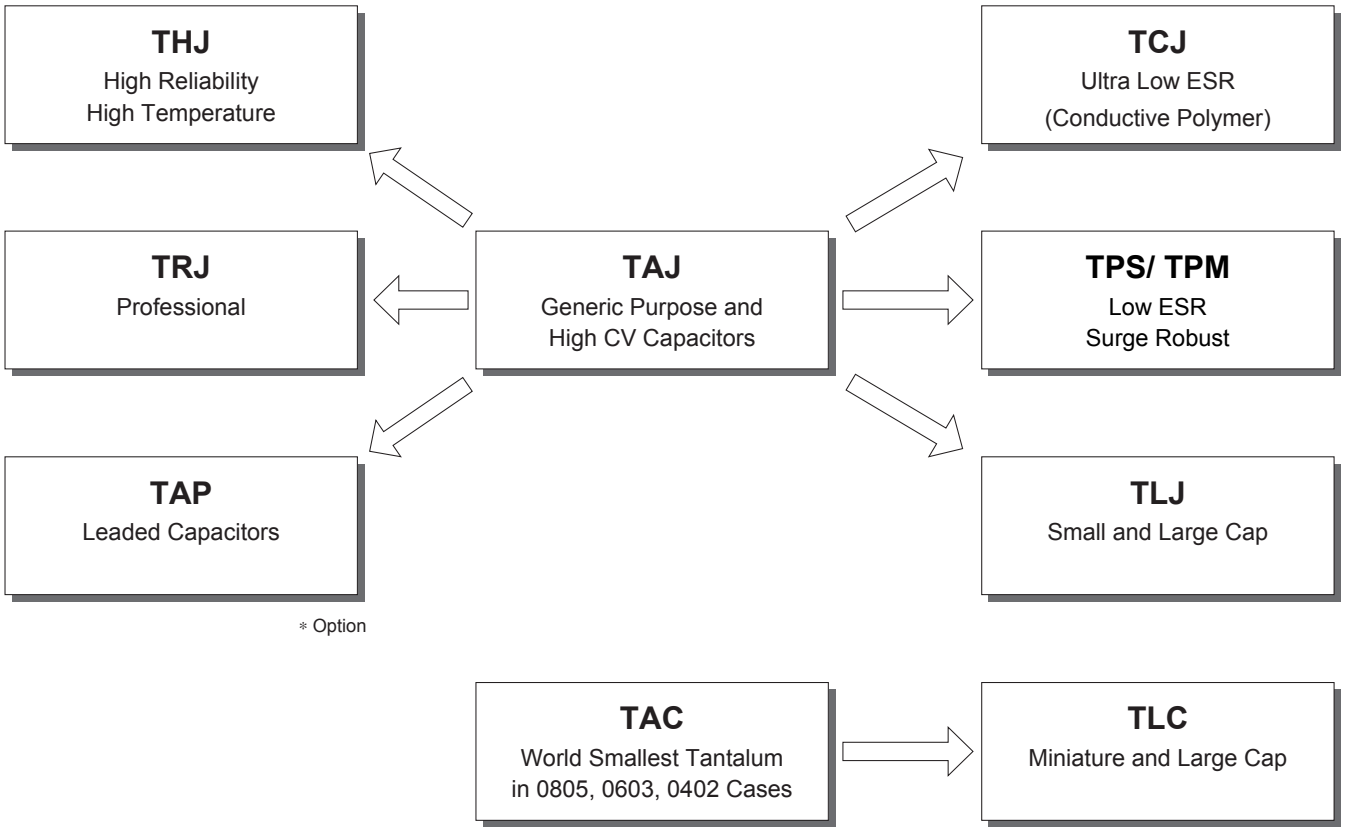
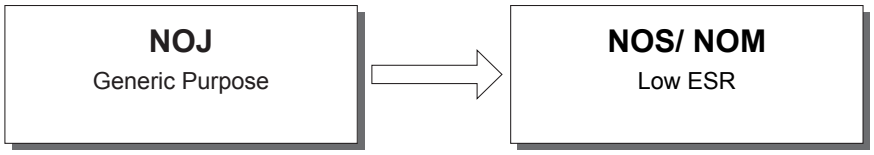
AVX, the world's leading manufacturer of Tantalum capacitors, has now released the world first Niobium Oxide Capacitors. AVX Niobium Oxide Capacitors are drawing worldwide attention because of their non–burn technology and availability and stability of raw materials supply.
AVX is committed to total 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.

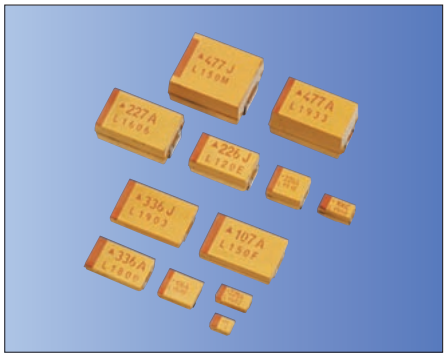
Tantalum Series Guide



Niobium Oxide Series Guide



TAJ Series (Standard), TPS/ TPM Series (Low ESR) Tantalum Capacitors



Pb Free RoHS Compliant

Features

- 50V type is available
- 2200µF/ 2.5V (V case) is available
- 25mΩESR type is available
  50 for TPS series

Applications

- Electronic Equipment in General
- CPU's
- Power Supply Circuit

How to Order

TAJ	B	107	M	010	Y	
①	②	③	④	⑤	⑥	
TPS	B	107	M	010	Y	0400
①	②	③	④	⑤	⑥	⑦
TPM	E	108	M	004	R	0018
①	②	③	④	⑤	⑥	⑦

① Series
② Case Size (See Table)
③ Capacitance (pF)
(Code: 2 Significant Digits and Number of Zeros)
④ Tolerance

K*	±10%	**M**	±20%

*Optional
⑤ Rated DC Voltage

ex.		**006**	6.3VDC
002	2.5VDC	**016**	16VDC

⑥ Packaging
TAJ/ TPS Series

Y	Plastic Tape (7" Reel)

TPM Series

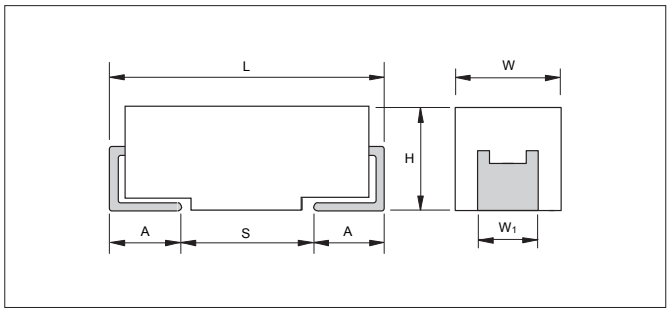
R	Plastic Tape (7" Reel)

⑦ ESR

ex.	**0100**	100mΩ

Case Dimensions

(Unit: mm)



Case size	L	W	H	W_1	A	S min.
A	3.2±0.2	1.6 $^{+0.2}_{-0.1}$	1.6 $^{+0.2}_{-0.1}$	1.2±0.2	0.8 $^{+0.3}_{-0.2}$	1.1
B	3.5±0.2	2.8 $^{+0.2}_{-0.1}$	1.9 $^{+0.2}_{-0.1}$	2.2±0.2	0.8 $^{+0.3}_{-0.2}$	1.4
C	6.0±0.2	3.2 $^{+0.2}_{-0.1}$	2.6 $^{+0.2}_{-0.1}$	2.2±0.2	1.3 $^{+0.3}_{-0.2}$	2.9
D	7.3±0.2	4.3 $^{+0.2}_{-0.1}$	2.9 $^{+0.2}_{-0.1}$	2.4±0.2	1.3 $^{+0.3}_{-0.2}$	4.4
E	7.3±0.2	4.3 $^{+0.2}_{-0.1}$	4.1 $^{+0.2}_{-0.1}$	2.4±0.2	1.3 $^{+0.3}_{-0.2}$	4.4
V	7.3±0.2	6.1 $^{+0.2}_{-0.1}$	3.45±0.3	3.1±0.2	1.4 $^{+0.3}_{-0.2}$	4.4
J	1.6±0.2	0.8 $^{+0.2}_{-0.1}$	0.9 max.	0.6±0.2	0.3 $^{+0.3}_{-0.2}$	0.55
K	3.2±0.2	1.6 $^{+0.2}_{-0.1}$	1.0 max.	1.2±0.2	0.8 $^{+0.3}_{-0.2}$	1.1
R	2.05±0.2	1.3 $^{+0.2}_{-0.1}$	1.2 max.	1.0±0.2	0.5 $^{+0.3}_{-0.2}$	0.85
S	3.2±0.2	1.6 $^{+0.2}_{-0.1}$	1.2 max.	1.2±0.2	0.8 $^{+0.3}_{-0.2}$	1.1
T	3.5±0.2	2.8 $^{+0.2}_{-0.1}$	1.2 max.	2.2±0.2	0.8 $^{+0.3}_{-0.2}$	1.4
P	2.05±0.2	1.35 $^{+0.2}_{-0.1}$	1.5 max.	1.0±0.2	0.5 $^{+0.3}_{-0.2}$	0.85
W	6.0±0.2	3.2 $^{+0.2}_{-0.1}$	1.5 max.	2.2±0.2	1.3 $^{+0.3}_{-0.2}$	2.9
X	7.3±0.2	4.3 $^{+0.2}_{-0.1}$	1.5 max.	2.4±0.2	1.3 $^{+0.3}_{-0.2}$	4.4
F	6.0±0.2	3.2 $^{+0.2}_{-0.1}$	2.0 max.	2.2±0.2	1.3 $^{+0.3}_{-0.2}$	2.9
Y	7.3±0.2	4.3 $^{+0.2}_{-0.1}$	2.0 max.	2.4±0.2	1.3 $^{+0.3}_{-0.2}$	4.4

Specifications

Rated Voltage (V_R) ≤+ 85°C	2.5	4	6.3	10	16	20	25	35	50
Category Voltage (V_C) ≤+125°C	1.7	2.7	4	7	10	13	17	23	33
Surge Voltage (V_S) ≤+ 85°C	3.3	5.2	8	13	20	26	32	46	65
Surge Voltage (V_S) ≤+125°C	2.2	3.4	5	8	13	16	20	28	40
Operating Temperature Range	–55°C to +125°C								
Failure Rate	1%/ 1000H (85°C, Rated Voltage, 0.1Ω/ V)								

Capacitance and Voltage Range

Capacitance		Capacitance Range (letter denotes case code)								
		Rated Voltage								
µF	CODE	2.5V	4V	6.3V	10V	16V	20V	25V	35V	50V
0.1	104								A	A
0.15	154								A	A/ B
0.22	224								A	A/ B
0.33	334								A	B
0.47	474							A	A/ B	A/ B/ C
0.68	684							A	A/ B	A/ B/ C
1.0	105						A	A	A/ B	A/ B/ C
1.5	155						A	A/ B	A/ B/ C	C/ D
2.2	225					A	A/ B	A/ B	A/ B/ C	C/ D
3.3	335					A/ B	A/ B	A/ B	B/ C	C/ D
4.7	475				A	A/ B	A/ B	A/ B	B/ C/ D	C/ D
6.8	685				A	A/ B	A/ B/ C	B/ C	C/ D	C/ D
10	106			A	A	A/ B/ C	B/ C	C/ D	C/ D/ E	D/ E/ V
15	156			A	A/ B	A/ B/ C	B/ C	C/ D	C/ D	D/ E/ V
22	226			A	A/ B	B/ C/ D	B/ C/ D	C/ D	D/ E	V
33	336	A	A	A	A/ B/ C	B/ C/ D	C/ D	D/ E	D/ E/ V	
47	476	A	A	A/ B/ C	B/ C	C/ D	C/ D/ E	D/ E	E/ V	
68	686	A	A/ B	B/ C	B/ C	C/ D	D/ E	E/ V	V	
100	107	A/ B	A/ B	B/ C	B/ C/ D	D/ E	D/ E/ V	V		
150	157	B	B/ C	B/ C/ D	C/ D/ E	D/ E/ V	E/ V			
220	227	B/ D	B/ C/ D	C/ D/ E	D/ E	E/ V				
330	337	D	C/ D	D/ E	D/ E/ V					
470	477	C/ D	D/ E	D/ E/ V	E/ V					
680	687	D/ E	D/ E	E/ V						
1000	108	D/ E	D/ E/ V	V						
1500	158	D/ E/ V	E/ V							
2200	228	V								

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher voltage ratings in the same case size, to the same reliability standards.

Capacitance and Voltage Range (Low Profile)

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

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher voltage ratings in the same case size, to the same reliability standards.

Capacitance and Voltage Range (ESR)

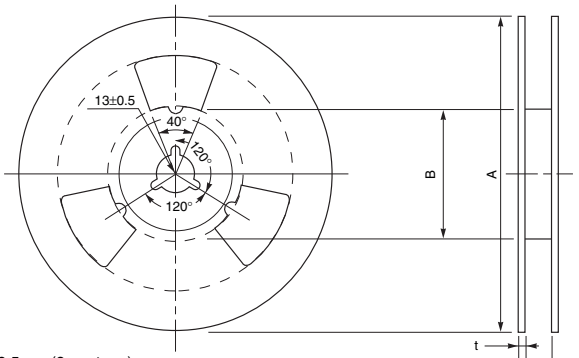
Capacitance		Capacitance and Voltage Range (Letter Denotes Case Code) Rated Voltage D C (VR) at 85°C								
µF	CODE	2.5V	4V	6.3V	10V	16V	20V	25V	35V	50V
0.15	154									A (9000)
0.22	224								A (6000)	A (7000)
0.33	334								A (6000)	
0.47	474							A (7000)	A (6000) B (4000)	
0.68	684							A (6000)	A (6000)	
1.0	105				R (9000)		A (3000) R (6000) S (6000) T (2000)	R (2500, 4000)	A (3000) B (2000)	C (2500)
1.5	155							A (3000) B (1800)	B (2500)	C (1500, 2000)
2.2	225			R (7000)	A (1800)	A (1800, 3500) T (2000)	A (3000)	B (900, 1200, 2500)	A (1500) B (750, 1500, 2000) C (1000)	D (1200)
3.3	335				T (1500)	A (3500)	A (2500) B (1300)	A (1000, 1500) B (750, 1500, 2000)	B (1000) C (700)	D (800)
4.7	475			S (4000)	A (1400) R (3000, 5000)	A (2000) B (800, 1500)	A (1800) B (750, 1000)	B (700, 900, 1500)	B (700, 1500) C (600) D (700)	D (300, 500, 700)
6.8	685			A (1800)	A (1800) T (1800)	A (1500) B (600, 1200)	A (1000) B (600, 1000) C (700)	B (700) C (500, 600, 700)	C (350) D (150, 400, 500)	D (200, 300, 500, 600)
10	106		R (3000)	A (1500) R (1000, 1500, 3000)	A (900, 1800) P (2000) T (1000, 2000)	B (500, 800) C (500) T (800, 1000) W (500, 600)	B (500, 1000) C (500, 700) W (500)	C (300, 500)	D (125, 300) E (200) Y (250)	E (400, 500) E (120)
15	156			A (700, 1500)	A (1000) B (450, 600) T (1200)	B (500, 800)	B (500) C (400, 450)	C (220, 300) D (100, 300)	C (350, 450) D (100, 300) Y (250)	E (250) E (75, 100)
22	226			A (500, 900) B (375, 600) S (900)	A (900) B (400, 500, 700) C (300), T (800)	B (400, 600) C (150, 250, 300, 375) W (500)	B (400, 600) C (100, 150, 400) D (200, 300)	C (275, 400) D (100, 200, 300)	D (125, 200, 300, 400) E (125, 200, 300) Y (200) E (60, 100)	E (75, 100)
33	336			A (600) B (250, 350, 450, 600) T (800)	A (700) B (250, 425, 500, 650) C (150, 375, 500) W (350)	B (350, 500) C (100, 150, 225, 300) D (200) W (140, 175, 250, 400, 500) Y (300, 400)	C (300) D (100, 200)	D (100, 200, 300) E (100, 175, 200, 300) Y (200)	D (200, 300) E (100, 250, 300) V (200) E (50, 65)	
47	476		A (500)	A (800) B (250, 350, 500) C (300) T (1200)	B (250, 350, 500, 650) C (200, 350) D (100) W (125, 150, 250)	C (110, 350) D (80, 100, 150, 200) W (200) X (180) Y (250)	D (75, 100, 200) E (70, 125, 150, 200, 250)	D (125, 150, 250) E (80, 100, 125)	E (200, 250) V (150, 200) E (55, 65)	
68	686			B (250, 350, 500) C (150, 200) W (110, 125, 250)	B (600) C (80, 100, 200, 300) D (100, 150) Y (100, 200) W (100, 150)	C (125, 200) D (70, 100, 150) F (200) Y (150, 200, 250) X (150)	D (70, 150, 200, 300) E (125, 150, 200)	E (125.200) V (80, 95, 150, 200) E (45, 55)	V (150, 200)	
100	107	B (200)	B (200, 250, 350, 500) W (100)	B (250, 400) C (75, 150) Y (100) W (100, 150)	B (400) C (75, 100, 150, 200) D (50, 65, 80, 100, 125, 150) E (125) Y (100, 150, 200) X (85, 150, 200) W (150)	D (60, 100, 125, 150) E (55, 100, 125, 150) F (150, 200) Y (100, 150, 200)	D (85, 100, 150) E (100, 150, 200) V (60, 85, 100, 200) E (35, 45)	V (100)		
150	157	B (150)	B (250) C (70, 80)	C (50, 90, 150, 200, 250) D (50, 125) Y (40, 50)	D (50, 85, 100) E (100) F (200) X (100) Y (100, 150, 200)	D (60, 85, 100, 125, 150) E (100) V (45, 75) Y (200) E (30, 40)	V (80)			
220	227	B (150, 200, 600) D (45)	D (40, 50, 100) Y (40, 50, 75)	C (70, 100, 125, 250) D (50, 100, 125) E (100) F (200) Y (100, 150)	D (40, 50, 100, 150) E (50, 60, 70, 100, 125, 150) Y (150, 200) D (35)	E (100, 150) V (50, 75, 100, 150) E (25, 40)				
330	337	Y (40)	C (100) D (35, 45, 100) F (200) X (100) D (25, 35)	D (45, 50, 70, 100) E (50, 100, 125, 150) V (100) Y (100, 150) D (25, 35)	D (50, 65, 100, 150) E (40, 50, 60, 100) V (40, 60, 100) D (35) E (23, 35)					
470	477	D (35) F (200) Y (100)	D (45, 100) E (35, 45, 100) D (25, 35)	D (45, 60, 100, 200) E (45, 50, 60, 100, 200) V (40, 55, 100) Y (150) D (30) E (18, 23, 30)	E (45, 50, 60, 100, 200) V (40, 60, 100) E (23, 30)					
680	687	D (35, 50) E (35, 50) Y (100)	D (45, 60, 100) E (40, 60, 100) D (25) E (18, 23)	E (45, 60, 100) V (35, 40, 50) E (18, 23), V (23)						
1000	108	E (30, 40) Y (100) D (25)	E (40, 60) V (25, 35, 40, 50) E (18, 23), V (18)	V (40, 50)						
1500	158	D (100) E (50) V (30, 40) E (12, 15, 18)	E (50, 75) V (50, 75) E (15, 18)							
2200	228	E (18)								

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher voltage ratings in the same case size, to the same reliability standards.
Figures of parentheses shows the ESR.
Shaded portion indicates TPM series products.

Packaging

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

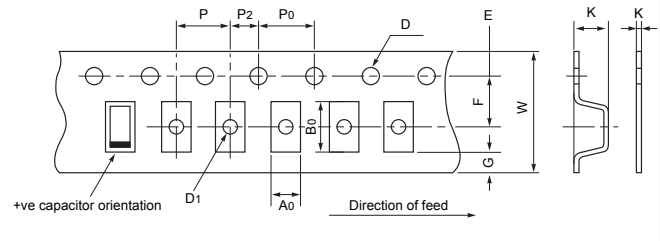
• Reel (Unit: mm)



A : 9.5mm (8mm tape)
13.0mm (12mm tape)
Cover TapeThickness : 75±25µm
Cover Tape Width : 5.5±0.2mm (8mm tape)
9.5±0.2mm (12mm tape)

Reel Size	Tape width (mm)	A	B	C	W	t
180mm (7")	12	178±2.00	50 min.	13.0±0.50	12.4+1.5/ −0	1.50±0.50
180mm (7")	8	178±2.00	50 min.	13.0±0.50	8.4+1.5/ −0	1.50±0.50

• Carrier Tape



Tape dimensions comply to EIA 481 A.
Dimensions A_0 and B_0 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.

(Unit: mm)

Code	8mm tape	12mm tape
P	4±0.1	8±0.1
G	0.75 min.	0.75 min.
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_2	2±0.05	2±0.05
P_0	4±0.1	4±0.1
D	1.5 $^{+0.2}_{-0.0}$	1.5 $^{+0.2}_{-0.0}$
D_1	1.0 min.	1.5 min.

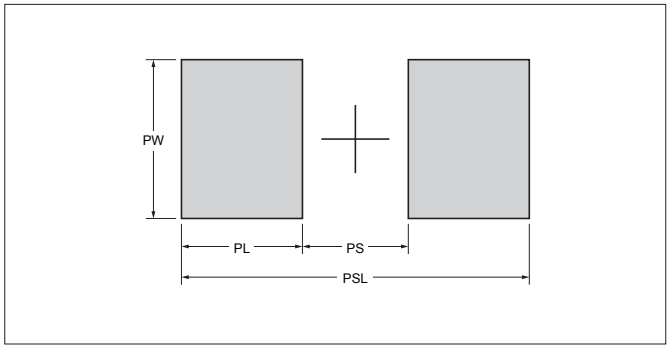
• Taping

Series	Case Size	Tape Width (mm)	P (mm)	7" Reel (pcs.)
TAJ TPS TPM TCJ TLJ TRJ THJ NOJ NOS NOM	A	8	4	2000
	B	8	4	2000
	C	12	8	500
	D	12	8	500
	E	12	8	400
	F	12	8	1000
	G	8	4	2500
	H	8	4	2500
	J	8	4	4000
	K	8	4	3000
	P	8	4	2500
	R	8	4	2500
	S	8	4	2500
	T	8	4	2500
	V	12	8	400
	W	12	8	1000
	X	12	8	1000
	Y	12	8	1000
TAC TLC	K	8	2	10000
	L	8	4	3500
	R	8	4	2500
	H	8	4	3500
	U	8	4	3500
	A	8	4	2000
	T	8	4	2500

• Carrier Tape (Unit: mm)

Series	Case Size	A0	B0	K
TAJ TPS TPM TCJ TLJ TRJ THJ NOJ NOS NOM	A	1.83±0.1	3.57±0.1	1.87±0.1
	B	3.15±0.1	3.77±0.1	2.22±0.1
	C	3.45±0.1	6.4±0.1	2.92±0.1
	D	4.48±0.1	7.62±0.1	3.22±0.1
	E	4.5±0.1	7.5±0.1	4.5±0.1
	F	3.35±0.1	6.4±0.1	2.2±0.1
	G	1.83±0.1	3.57±0.1	1.65±0.1
	H	3.15±0.1	3.77±0.1	1.66±0.1
	J	1.0±0.05	1.8±0.05	1.0±0.05
	K	1.95±0.1	3.55±0.1	1.15±0.1
	P	1.65±0.1	2.45±0.1	1.6±0.1
	R	1.65±0.1	2.45±0.1	1.3±0.1
	S	1.95±0.1	3.55±0.1	1.3±0.1
	T	3.2±0.1	3.8±0.1	1.3±0.1
	V	6.43±0.1	7.44±0.1	3.84±0.1
	W	3.57±0.1	6.4±0.1	1.65±0.1
	X	4.67±0.1	7.62±0.1	1.65±0.1
	Y	4.67±0.1	7.62±0.1	2.15±0.1
TAC TLC	K	0.75 $^{+0.1}_{-0.05}$	1.35±0.05	0.75±0.05
	L	1.025 $^{+0.025}_{-0.0}$	1.95±0.05	1.1±0.05
	R	1.7 $^{+0.05}_{-0.0}$	2.45±0.05	1.7±0.05
	H	1.7 $^{+0.05}_{-0.0}$	2.45±0.05	1.1±0.05
	U	1.7 $^{+0.05}_{-0.0}$	2.45±0.05	0.8±0.05
	A	1.83 $^{+0.1}_{-0.0}$	3.57±0.1	1.87±0.1
	T	3.2 $^{+0.1}_{-0.0}$	3.8±0.1	1.0±0.1

Recommended Land Pattern

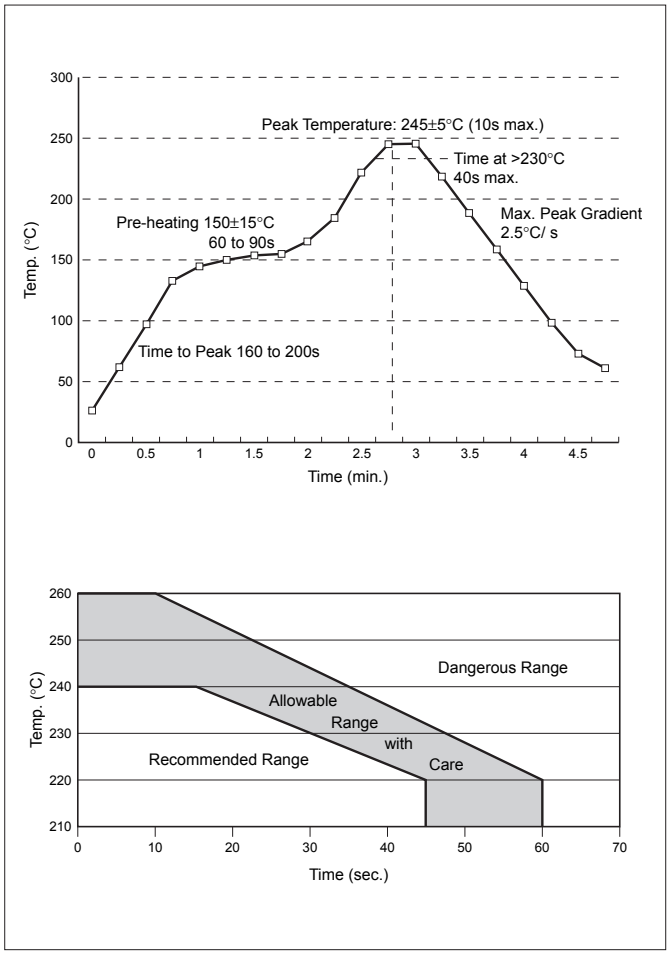


(Unit: mm)

Case size		PSL	PL	PS	PW
TAJ TPS TPM TCJ TLJ TRJ THJ NOJ NOS NOM	A	4.00	1.40	1.20	1.80
	B	4.00	1.40	1.20	2.80
	C	6.50	2.00	2.50	2.80
	D	8.00	2.00	4.00	3.00
	E	8.00	2.00	4.00	3.00
	F	6.50	2.00	2.50	2.80
	G	4.00	1.40	1.20	1.80
	H	4.00	1.40	1.20	2.80
	J	2.80	1.10	0.60	1.00
	K	4.00	1.40	1.20	1.80
	N	2.70	0.95	0.80	1.60
	P	2.70	0.95	0.80	1.60
	R	2.70	0.95	0.80	1.60
	S	4.00	1.40	1.20	1.80
	T	4.00	1.40	1.20	2.80
	V	8.00	2.00	4.00	3.70
	W	6.50	2.00	2.50	2.80
	X	8.00	2.00	4.00	3.00
	Y	8.00	2.00	4.00	3.00
	Z	8.00	2.00	4.00	3.00
TAC TLC	K	2.20	0.90	0.40	0.70
	L	2.80	1.10	0.60	1.00
	R/ H/ U	3.20	1.30	0.60	1.50
	A	4.40	1.60	1.20	1.80
	T	4.70	1.70	1.30	3.00

Recommended Reflow Profile for Lead–Free Product

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



Please contact us for Lead–Free Products.

Manual Soldering Using Soldering Iron

Item	Condition
Max. Tip Temperature	370°C max.
Max. Exposure Time	3 sec. max.

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.
   Imax = Vrated/ (0.65 + Catalog ESR)
   So for example for D case/ 100uF/ 10V capacitor (Catalog ESR = 0.9 Ohms)
   This would be :
   Imax = 10/ (0.65 + 0.9) ≒ 6.45Amps
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.
   a) 10% of rated DC voltage to a maximum of 1V at 25°C.
   b) 3% of rated DC voltage to a maximum of 0.5V at 85°C.
   c) 1% of category DC voltage to a maximum of 0.1V at 125°C.

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Other Similar products are found below :

CWR06HC106KB B45197-A2157-M509 B45197A5226M409 NTC-T476K10TRDF CWR06KC106KP CWR09KB106KCA TCSCS1A336KBAR TCTP0J336M8R B45196-H5106-K309 B45196-H6226-K509 CWR09JC225JBB T83D475K050RCCL TCSCS1A476KBAR T83E107K016RCCL T83D685K035RCCL 595D107X0004B2T CWR11HH105KB 293D155X9020A2DE3 CWR09NC224KB CWR11MC685KCB CWR29FC685KCEC CWR09NC684KM CWR19MH106KCHB CWR29HH155KCBB CWR29HC106KCDC CWR29FC336KDGC CWR09NC225KDB CWR29FC475KDDC CWR29HC225KCAC CWR11KC106KBB CWR09JH105KC 293D476X9035E2TE3 CWR29JC335KDDC CWR29KC226JCGC CWR29FC105KDAC CWR29DC337KCHC NTC-T686K6.3TRBF 595D686X9010B2T 595D106X0025C8T TAZH685K035LBSB0824 TAZG107K010LBSB0800 TAZH475K050LBSB0H23 TAJD107K016KNJ TAZH227K010LBSB0024 TAZH156K025CBSZ0824 TAZH227J010LBSZ0800 TPSE687M006H0045 TBJD156K025CBSZ0824 TMCSA1V154MTRF TMCSA0G335MTRF