AVX is a leading worldwide manufacturer and supplier of a broad line of passive electronic components and Interconnects.

AVX enjoys significant competitive advantages including the benefit of having research, manufacturing, and customer support facilities in 15 countries around the world. This assures customers of the most efficient balance of delivery and production capability in response to their just-in-time inventory requirements. With major research and development centers in five locations around the world, AVX has fostered customer relationships involving the design and technology for new and advanced products to fulfill their special end product requirements.

AVX research and development has anticipated and adapted products that help fuel the explosive growth in communications technology.

Tantalum Capacitors/ Niobium Oxide Capacitors Series Guide

Resin-Molded

Standard

General (Standard)		Low Profile		Low ESR			Face-Down	
F93	**TAJ**	**F92**	**TAJ**	**F91**	**TPS**	**TPM**	**F98**	**F98-AS1**
Small Case	High Voltage	Small Case	High Voltage	Small Case	High Voltage	Multi anode	Small Case High Capacitance	Fused

High Reliability

General (High Reliability)		Small Case High Capacitance	Low ESR		High Temperature	
F97	**TRJ**	**F93-AJ6**	**F91-AJ6**	**TRM**	**F97-HT3**	**THJ**
Small Case	High Voltage		Small Case High Capacitance	Multi anode	Small Case	High Voltage

Conductive Polymer

Ultra Small Case High Capacitance	Small Case High Capacitance	High Voltage	Low ESR
F38	**TCN**	**TCJ**	**TCM**

Conformal Coated

Small Case Low Profile	Low Profile	High Capacitance
F95-AM1 (AUDIO) **F95**	**F72**	**F75**

Niobium Oxide Capacitors OxiCap®

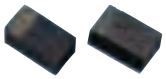
General	Low ESR	Multianode
NOJ	**NOS**	**NOM**

TAP
Leaded

* Option

Tantalum Capacitors Product Line-up

Series	Resin-Molded (Standard)				
	F93	TAJ	F92	TAJ (Low Profile)	F91
Features	•General •Small Case	•General •High Voltage	•Low Profile •Small Case	•Low Profile •High Voltage	•Low ESR •Small Case
Appearance					
Type	Resin-Molded Chip	Resin-Molded Chip	Resin-Molded Chip	Resin-Molded Chip	Resin-Molded Chip
Operating Temperature Range (°C)	–55 to +125	–55 to +125	–55 to +125	–55 to +125	–55 to +125
Voltage Range (V)	4 to 35	2.5 to 50	4 to 35	2.5 to 50	4 to 35
Capacitance (µF)	0.68 to 680	0.1 to 2200	0.22 to 150	0.1 to 1000	6.8 to 680
Tolerance (%)	±20, ±10	±20, ±10	±20	±20, ±10	±20, ±10
Leakage Current (µA)	0.01CV or 0.5 max.	0.5 to 60	0.01CV to 0.1CV or 0.5 max.	0.5 to 28.2	0.01CV or 0.5 max.
Dissipation Factor (%)	4 to 40 max.	4 to 60 max.	4 to 30 max.	4 to 30 max.	6 to 18 max.
Failure Rate Level	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 1% / 1000 hours
Typical applications*	Consumer products, Industrial equipments				

Series	Resin-Molded (Standard)		Resin-Molded (High Reliability)		
	TPS/ TPM	F98/ F98-AS1	F97	TRJ	F93-AJ6
Features	•Low ESR •High Voltage •Multianode (TPM)	•Face-Down Terminal •Small Case •High Capacitance •Fused type (F98-AS1)	•General •Small Case	•General •High Voltage	•Small Case •High Capacitance
Appearance					
Type	Resin-Molded Chip	Resin-Molded Chip	Resin-Molded Chip	Resin-Molded Chip	Resin-Molded Chip
Operating Temperature Range (°C)	–55 to +125	–55 to +125	–55 to +125	–55 to +125	–55 to +125
Voltage Range (V)	2.5 to 50	4 to 25 (F98) 10 to 35 (F98-AS1)	6.3 to 35	6.3 to 50	4 to 35
Capacitance (µF)	0.15 to 2200	1 to 220 (F98) 1 to 47 (F98-AS1)	0.33 to 150	0.1 to 680	1 to 680
Tolerance (%)	±20, ±10	±20	±20, ±10	±20, ±10	±20, ±10
Leakage Current (µA)	0.5 to 63	0.01CV to 0.2CV or 0.5 max.	0.01CV or 0.5 max.	0.3 to 39	0.01CV or 0.5 max.
Dissipation Factor (%)	4 to 60 max.	6 to 80 max. (F98) 18 to 30 max. (F98-AS1)	4 to 15 max.	4 to 30 max.	4 to 30 max.
Failure Rate Level	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 0.5% / 1000 hours	at 85°C Rated Voltage Applied 0.5% / 1000 hours	at 85°C Rated Voltage Applied 1% / 1000 hours
Typical applications*	Consumer products, Industrial equipments		Automotive products, Industrial equipments		

Series	Resin-Molded (High Reliability)			
	F91-AJ6	TRM	F97-HT3	THJ
Features	•Low ESR •Small Case •High Capacitance	•Low ESR •Multianode	•Temperature 135°C •Small Case •High Capacitance	•Temperature 175°C, 200°C •High Voltage
Appearance				
Type	Resin-Molded Chip	Resin-Molded Chip	Resin-Molded Chip	Resin-Molded Chip
Operating Temperature Range (°C)	–55 to +125	–55 to +125	–55 to +135	–55 to +175, +200
Voltage Range (V)	6.3 to16	2.5 to 50	6.3 to 35	6.3 to 50
Capacitance (µF)	10 to 47	4.7 to 1500	0.33 to 100	0.1 to 220
Tolerance (%)	±20, ±10	±20, ±10	±20, ±10	±20, ±10
Leakage Current (µA)	0.01CV or 0.5 max.	1.8 to 30	0.01CV or 0.5 max.	0.5 to 22
Dissipation Factor (%)	6 to 12 max.	6 to 8 max.	4 to 15 max.	3 to 10 max.
Failure Rate Level	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 0.5% / 1000 hours	at 95°C Rated Voltage Applied 0.5% / 1000 hours	at 85°C Rated Voltage Applied 0.5% / 1000 hours
Typical applications*	Automotive products, Industrial equipments			

* This table is not intended to limit the applications. Please see each page of products for detailed specifications.

Tantalum Capacitors Product Line-up

Series	Conductive Polymer			
	F38	TCN	TCJ	TCM
Features	•Ultra Small case •High Capacitance •Face-Down Terminal •Low ESR •High Ripple	•Small case •High Capacitance •Face-Down Terminal •Low ESR •High Ripple	•High Voltage •Low ESR •High Ripple	•Ultra Low ESR •High Ripple •Multianode
Appearance				
Type	Conductive Polymer Resin Molded Chip	Conductive Polymer Resin Molded Chip	Conductive Polymer Resin Molded Chip	Conductive Polymer Resin Molded Chip
Operating Temperature Range (°C)	–55 to +105	–55 to +105	–55 to +85, +105, +125	–55 to +105
Voltage Range (V)	6.3 to 10	6.3 to 35	2.5 to 125	4 to 100
Capacitance (µF)	2.2 to 68	4.7 to 1000	0.47 to 470	10 to 1000
Tolerance (%)	±20	±20	±20	±20
Leakage Current (µA)	0.2CV or 10 max.	35 to 600	2.5 to 282	77 to 408
Dissipation Factor (%)	6 to 15 max	6 to 30 max.	6 to 12 max.	8 max.
Failure Rate Level	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 1% / 1000 hours
Typical applications*	Consumer products, Industrial equipments			

Series	Conformal Coated		
	F95-AM1/ F95	F72	F75
Features	•For Audio Equipment (F95-AM1) •Small Rectangular •Low ESR/ impedance, Excellent High Frequency Characteristics	•Low Profile •High Capacitance •Low ESR/ impedance, Excellent High Frequency Characteristics	•High Capacitance •Low ESR/ impedance, Excellent High Frequency Characteristics
Appearance			
Type	Coformal Coated Chip	Coformal Coated Chip	Coformal Coated Chip
Operating Temperature Range (°C)	–55 to +125	–55 to +125	–55 to +125
Voltage Range (V)	4 to 10 (F95-AM1) / 4 to 35 (F95)	4 to 16	4 to 16
Capacitance (µF)	68 to 470 (F95-AM1) / 1 to 470 (F95)	33 to 1500	68 to 2200
Tolerance (%)	±20, ±10	±20, ±10	±20, ±10
Leakage Current (µA)	0.01CV to 0.02CV or 0.5 max.	0.01CV to 0.02CV or 0.5 max.	0.01CV to 0.02CV or 0.5 max.
Dissipation Factor (%)	10 to 40 max. (F95-AM1) / 4 to 40 max (F95)	6 to 45 max.	10 to 45 max.
Failure Rate Level	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 1% / 1000 hours	at 85°C Rated Voltage Applied 1% / 1000 hours
Typical applications*	Consumer products, Industrial equipments		

Niobium Oxide Capacitors OxiCap® Product Line-up

Series	Niobium Oxide Capacitors OxiCap®	
	NOJ	NOS/ NOM
Features	•Non burn safe technology •General	•Non burn safe technology •Low ESR •Multianode (NOM)
Appearance		
Type	Resin-Molded Chip	Resin-Molded Chip
Operating Temperature Range (°C)	–55 to +105	–55 to +125
Voltage Range (V)	1.8 to 10	1.8 to 6.3
Capacitance (µF)	4.7 to 1000	10 to 1000
Tolerance (%)	±20	±20
Leakage Current (µA)	1.1 to 80	1.1 to 56.4
Dissipation Factor (%)	6 to 20 max.	6 to 16 max.
Failure Rate Level	at 85°C Rated Voltage Applied 0.5% / 1000 hours	at 85°C Rated Voltage Applied 0.2% / 1000 hours
Typical applications*	Automotive products, Industrial equipments, Consumer products	

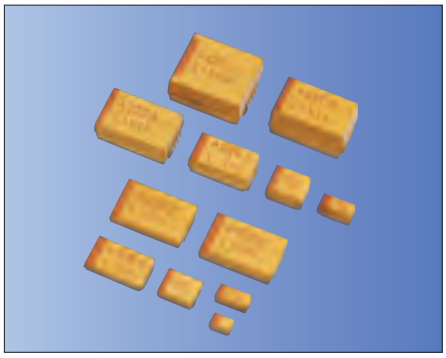
* This table is not intended to limit the applications. Please see each page of products for detailed specifications.

Compliance with RoHS Directive

Compliance with RoHS Directive	Compliant
Leaded (Pb)	Dose not contain
Chromium(VI)	
Mercury	
Cadmium	
PBB	
PBDE	
MSL (IPC/ JEDC J-STD-020)	* LEVEL 1 to LEVEL 3

* If you need detailed information about MSL LEVEL, please contact us.

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



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%

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

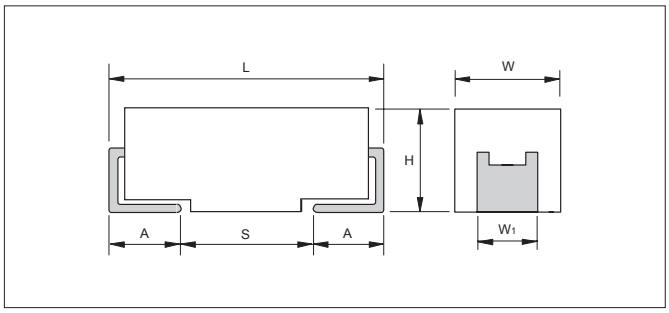
R	Plastic Tape (7" Reel)

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
U	7.3±0.2	6.1 $^{+0.2}_{-0.1}$	4.1 $^{+0.2}_{-0.1}$	3.1±0.2	1.3 $^{+0.3}_{-0.2}$	4.4
V	7.3±0.2	6.1 $^{+0.2}_{-0.1}$	3.55 $^{+0.2}_{-0.1}$	3.1±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
H	3.5±0.2	2.8 $^{+0.2}_{-0.1}$	1.5 max.	2.2±0.2	0.8 $^{+0.3}_{-0.2}$	1.4
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
P	2.05±0.2	1.35 $^{+0.2}_{-0.1}$	1.5 max.	1.0±0.1	0.5 $^{+0.3}_{-0.2}$	0.85
R	2.05±0.2	1.3 $^{+0.2}_{-0.1}$	1.2 max.	1.0±0.1	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
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
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), 60% confidence level								

Capacitance and Voltage Range

µF	V / CODE	2.5 / e	4 / G	6.3 / J	10 / A	16 / C	20 / D	25 / E	35 / V	50 / T
0.10	104								A	A
0.15	154								A	A/ B
0.22	224								A	A/ B
0.33	334								A	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	B/ C/ D
2.2	225					A	A/ B	A/ B	A/ B/ C	B/ 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	B/ 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	C/ 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	C/ D/ E	D/ E/ V	V	
100	107	A/ B	A/ B	B/ C	B/ C/ D	C/ D/ E	D/ E/ V	E/ V		
150	157	B	B/ C	B/ C/ D	C/ D/ E	D/ E/ V	E/ V	V		
220	227	B/ D	B/ C/ D	C/ D/ E	C/ D/ E	E/ V				
330	337	D	C/ D	C/ D/ E	D/ E/ V	E				
470	477	C/ D	C/ D/ E	D/ E/ V	E/ U/ V					
680	687	C/ D/ E	D/ E	E/ V						
1000	108	D/ E	D/ E/ V	E/ 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.
Only M tolerance available for underlined parts.

Capacitance and Voltage Range (Low Profile)

µF	V / CODE	2.5 / e	4 / G	6.3 / J	10 / A	16 / C	20 / D	25 / E	35 / V	50 / T
0.10	104						R/ S		R/ S	S
0.15	154						R/ S	R	R/ S	S
0.22	224						R/ S	R	R/ S	P/ R/ S
0.33	334						R/ S	R	R/ S	P/ R/ 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				R/ S	R/ S/ T	R/ S/ T	P/ R/ S	P/ S/ T	W
1.5	155			R/ S	R/ S	R/ S	P/ R/ S/ T	P/ S/ T	T	W
2.2	225		R/ S	R/ S	R/ S	R/ S/ T	P/ R/ S/ T	T	T	W
3.3	335		R/ S	R/ S	R/ S/ T	R/ S/ T	T	T/ W	W	Y
4.7	475	R	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	W/ Y	X/ Y	Y		
47	476	P/ S	T/ W	T/ W	H/ W/ Y	W/ X/ Y	X/ Y	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	W/ Y	W/ X/ Y	F/ X/ Y	Y				
220	227	W/ Y	W/ X/ Y	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.
Only M tolerance available for underlined parts.

Capacitance and Voltage Range <TPS Series>

µF	V / CODE	2.5 e	4 G	6.3 J	10 A	16 C	20 D	25 E	35 V	50 T
0.15	154									A (9000)
0.22	224								A (6000)	A (7000)
0.33	334								A (6000)	A (7000)
0.47	474							A (7000)	A (6000) B (4000)	A (6500) B (6000) C (2300)
0.68	684							A (6000)	A (6000)	B (4000)
1.0	105				R (9000)		A (3000) R (6000) S (6000) T (2000)	A (4000) R (2500, 4000)	A (3000) B (2000)	B (3000) C (2500)
1.5	155						A (3000)	A (3000) B (1800)	A (3000) B (2500)	C (1500, 2000)
2.2	225			R (7000)	A (1800)	A (1800, 3500) T (2000)	A (3000) B (1700)	A (2500) B (900, 1200, 2500)	A (1500) B (750, 1500, 2000) C (1000)	C (1500) D (1200)
3.3	335				T (1500)	A (3500) B (2500)	A (2500) B (1300)	A (1000, 1500) B (750, 1500, 2000)	B (1000) C (700)	C (1000) 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) C (700)	B (700, 1500) C (600) D (700)	C (800) D (250, 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) T (1000)	A (900, 1800) B (1000) P (2000) S (900) T (1000, 2000)	A (1000) B (500, 800) C (500) T (800, 1000) W (500, 600)	B (500, 1000) C (500, 700) W (250, 500)	B (1800) C (300, 500) D (500)	C (600) D (125, 300) E (200) Y (250)	D (500) E (250, 300, 400, 500)
15	156			A (700, 1500)	A (1000) B (450, 600) T (1200)	B (500, 800) C (300, 700)	B (500) C (400, 450)	C (220, 300) D (100, 300)	C (350, 450) D (100, 300) Y (250)	E (250) V (250)
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)	
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)	C (400) D (100, 200, 300) E (100, 175, 200, 300) Y (200)	D (200, 300) E (100, 250, 300) V (200)	
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) X (200)	D (125, 150, 250) E (80, 100, 125) Y (250)	E (200, 250) V (150, 200)	
68	686			B (250, 350, 500) C (150, 200) W (110, 125, 250)	B (600) C (80, 100, 200, 300) D (100, 150) W (100, 150) Y (100, 200)	C (125, 200) D (70, 100, 150) F (200) X (150) Y (150, 200, 250)	D (70, 150, 200, 300) E (125, 150, 200) Y (200)	D (150, 200, 300) E (125, 200) V (80, 95, 150, 200)	V (150, 200)	
100	107	B (200)	B (200, 250, 350, 500) W (100)	B (250, 400) C (75, 150) D (300) W (100, 150) Y (100)	B (400) C (75, 100, 150, 200) D (50, 65, 80, 100, 125, 150) E (125) W (150) X (85, 150, 200) Y (100, 150, 200)	C (200) 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 (150) V (100)		
150	157	B (150)	B (250) C (70, 80)	C (50, 90, 150, 200, 250) D (50, 125) Y (40, 50)	C (150) D (50, 85, 100) E (100) F (200) X (100) Y (100, 150, 200)	C (60, 85, 100, 125, 150) E (100) V (45, 75) Y (200)	V (80)	V (150)		
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 (100, 150, 200)	E (100, 150) V (50, 75, 100, 150)				
330	337	Y (40)	C (100) D (35, 45, 100) F (200) X (100)	C (80, 100) D (45, 50, 70, 100) E (50, 100, 125, 150) V (100) Y (75, 100, 150)	D (50, 65, 100, 150) E (40, 50, 60, 100) V (40, 60, 100)	E (200)				
470	477	D (35) F (200) Y (100)	D (45, 100) E (35, 45, 100)	D (45, 60, 100, 200) E (45, 50, 60, 100, 200) V (40, 55, 100) Y (150)	E (45, 50, 60, 100, 200) V (40, 60, 100)					
680	687	D (35, 50) E (35, 50) Y (100)	D (45, 60, 100) E (40, 60, 100)	E (45, 60, 100) V (35, 40, 50)						
1000	108	E (30, 40) Y (100)	E (40, 60) V (25, 35, 40, 50)	E (100) V (40, 50)						
1500	158	D (100) E (50) V (30, 40)	E (50, 75) V (50, 75)							

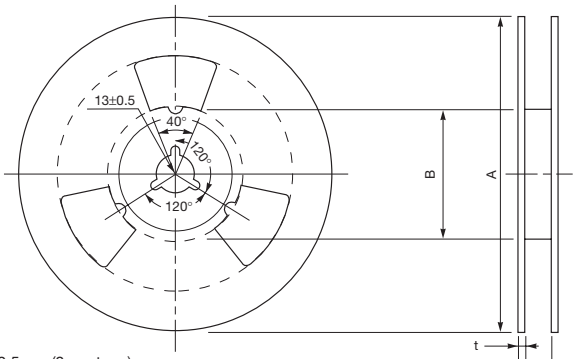
Note: Voltage ratings are minimum values. AVX reserves the right to supply higher voltage ratings in the same case size, to the same reliability standards.
Only M tolerance available for underlined parts.

Capacitance and Voltage Range <TPM Series>

μF	V / CODE	2.5 / e	4 / G	6.3 / J	10 / A	16 / C	20 / D	25 / E	35 / V	50 / T
10	106									D (140) E (120)
15	156									E (75, 100)
22	226								D (70) E (60, 100)	E (75, 100)
33	336							D (65)	E (50, 65)	
47	476					D (100)	D (45, 55)	D (55) E (65)	E (55, 65)	
68	686					D (40, 50)		E (45, 55)		
100	107				Y (45)	D (40, 50)	E (35, 45)			
150	157				Y (45)	E (30, 40)	E (35)			
220	227			Y (30)	D (35)	E (25, 40)				
330	337		D (25, 35)	D (25, 35)	D (35) E (23, 35)					
470	477		D (25, 35)	D (30) E (18, 23, 30)	E (23, 30)					
680	687		D (25) E (18, 23)	E (18, 23) V (23)						
1000	108	D (25)	D (25, 45) E (18, 23) V (18)	E (25) V (20)						
1500	158	E (12, 15, 18)	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.
Only M tolerance available for underlined parts.

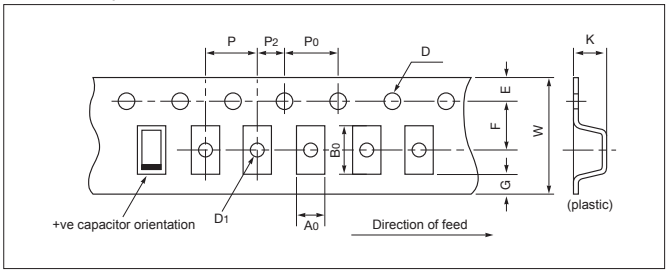
• Reel (Unit: mm)



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	180±2.00	50 min.	13.0±0.50	12.4+1.5/ −0	2.0±0.50
180mm (7")	8	180±2.00	50 min.	13.0±0.50	8.4+1.5/ −0	2.0±0.50

• Carrier Tape



Tape dimensions comply to EIA 481 A.
Dimensions Ao and Bo 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
For 16mm tape and 24mm tape, please contact factory.

(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.)
	A	8	4	2000
	B	8	4	2000
	C	12	8	500
	D	12	8	500
TAJ	E	12	8	400
TPS	U	16	8	400
TPM	V	12	8	400
TCJ	F	12	8	1000
TRJ	G	8	4	2500
THJ	H	8	4	2500
TRM	K	8	4	3000
TCN	L	8	4	2500
TCM	N	8	4	3000
NOJ	P	8	4	2500
NOS	R	8	4	2500
NOM	S	8	4	2500
	T	8	4	2500
	W	12	8	1000
	X	12	8	1000
	Y	12	8	1000

• Carrier Tape (Unit: mm)

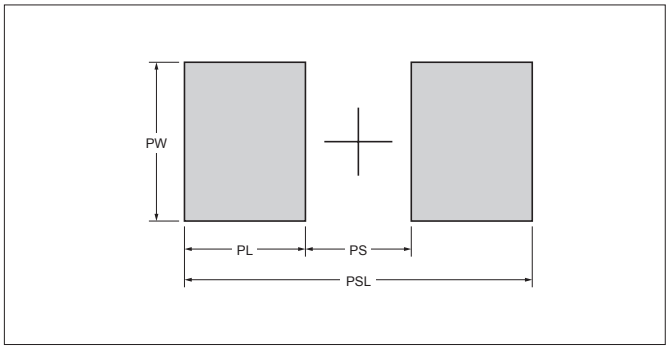
Series	Case Size	A0	B0	K
	A	1.83±0.1	3.57±0.1	1.87±0.1
	B	3.15±0.1	3.77±0.1	2.22±0.1
	C	3.45±0.1	6.4±0.1	2.92±0.1
	D	4.48±0.1	7.62±0.1	3.22±0.1
TAJ	E	4.5±0.1	7.5±0.1	4.5±0.1
TPS	U	6.19±0.1	7.66±0.1	4.72±0.1
TPM	V	6.43±0.1	7.44±0.1	3.84±0.1
TCJ	F	3.35±0.1	6.4±0.1	2.2±0.1
TRJ	G	1.83±0.1	3.57±0.1	1.65±0.1
THJ	H	3.15±0.1	3.77±0.1	1.66±0.1
TRM	K	1.95±0.1	3.55±0.1	1.15±0.1
TCN	L	3.10±0.1	3.80±0.1	1.30±0.1
TCM	N	1.60±0.1	2.30±0.1	1.10±0.1
NOJ	P	1.65±0.1	2.45±0.1	1.6±0.1
NOS	R	1.65±0.1	2.45±0.1	1.3±0.1
NOM	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
	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

• Moisture Sensitive Level (MSL)

Series	MSL
TAJ TPS THJ TRJ	1
NOJ	• For D, E, V, X and Y case sizes : 3 • For the other than the above : 1 (MSL = 3 only for Low ESR)
NOS	• For D, E, V, X and Y case sizes : 3 • For the other than the above : 1

Series	MSL
TPM TCJ TRM TCN TCM NOM	3

Recommended Land Pattern

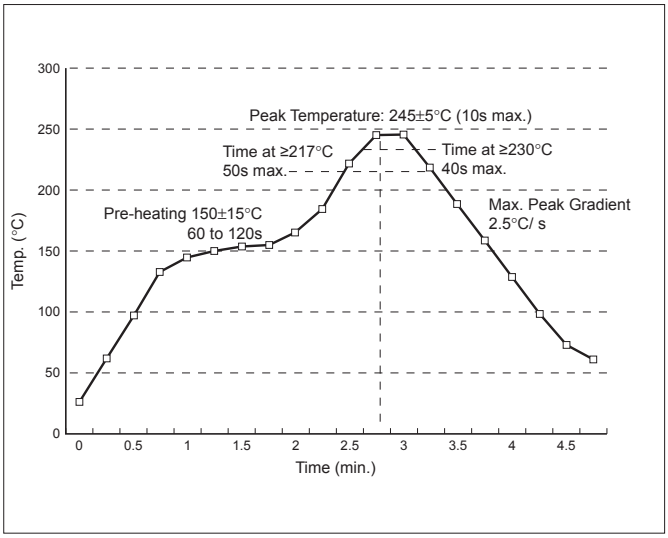


(Unit: mm)

Series	Case Size	PSL	PL	PS	PW
TAJ TPS TPM TCJ TRJ THJ TRM TCM 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
	U	8.00	2.00	4.00	3.70
	V	8.00	2.00	4.00	3.70
	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
	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
	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
TCN	K	4.00	1.40	1.20	1.80
	L	3.50	1.15	1.20	2.40
	S	3.50	1.15	1.20	1.20
	T	3.50	1.15	1.20	2.40
	X	7.20	1.50	4.20	2.50

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/ (0.45 + Catalog ESR)
   So for example for TAJD226M035 (Catalog ESR = 0.9 Ohms)
   This would be :
   Imax = 35/ (0.45 + 0.9) ≒ 25.9A
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 rated DC voltage to a maximum of 0.1V at 105°C.
   d) 1% of category DC voltage to a maximum of 0.1V at 125°C.