THE DATASHEET OF

T491A335K016AS

Type T491 Solid Tantalum Chip Capacitors

Solid Tantalum Chip Capacitors for Surface Mount Applications

The T491 Series' physical outline and dimensions conform to the global standard for tantalum capacitor chips, and the T491 exceeds the requirements of EIA standard 535BAAC. T491 chips are specifically for automated surface mount processes and equipment. The terminations are 100% Matte-Tin. Reliability and thermal stability are assured by lead-frame attachments to the tantalum pellet made by microprocessor-controlled welding and a high temperature silver epoxy adhesive. Standard packaging is compatible with all tape-fed placement units and with EIA RS- 481-1 tape and reel specification.

Highlights

- Low DF and DC Leakage
- Temperature Stable
- 260 ºC for 10 Seconds Soldering
- Meets IECQ Standard QC300801/US0001
- Meets EIA Standard 535BAAC

Specifications

Capacitance Range:	0.10 µF to 330 µF
Voltage Range:	4 Vdc to 50 VDC
Tolerance:	±10% standard, ±20% available
Operating Temperature:	–55 ºC to +125 ºC (with proper derating)
Cap Change From Initial Limit:	–10% @ –55 ºC; +10% @ +85 ºC; +12% @ +125 ºC
DC Leakage:	At 25 ºC — See Ratings At 85 ºC — 10 x 25 ºC limit At 125 ºC — 12 x 25 ºC limit
Dissipation Factor:	0.1 µF to 1.0 µF — 4% 1.5 µF to 68 µF — 6% 100 µF to 330 µF — 8%
Standard Packaging Tape and Reel:	EIA RS-481-1

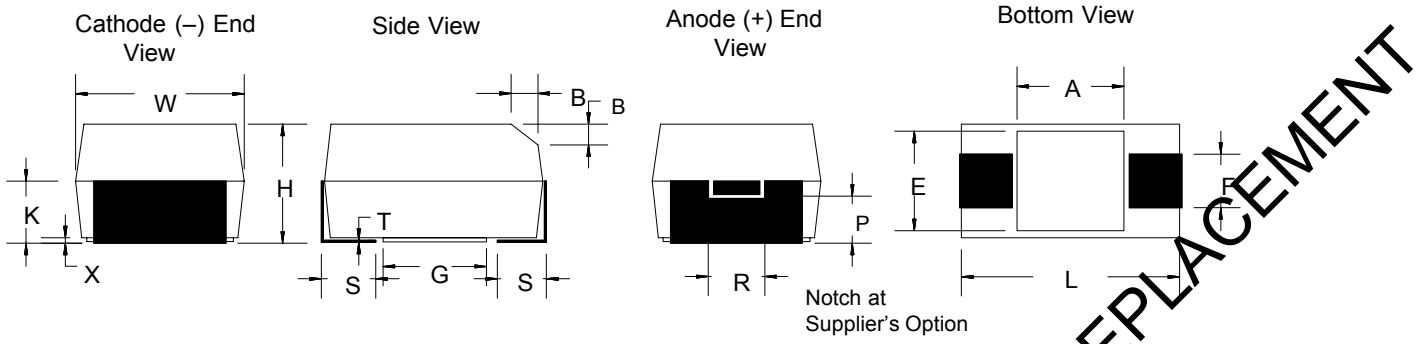
Case Code	EIA IECQ	Qty per 7" Reel	Tape Width	Tape Pitch
S	3216L	2,500	8mm	4mm
T	3528L	2,500	8mm	4mm
A	3216	2,000	8mm	4mm
B	3528	2,000	8mm	4mm
C	6032	500	12mm	8mm
D	7343	500	12mm	8mm
X	7343H	500	12mm	8mm

13" Reels Available on Special Order

RoHS Compliant

Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

Capacitor Outline Drawing



Dimensions — Millimeters (Inches)

CDE	EIA/ IECQ	L	W	H	K	F	S	B (Ref)	X (Ref)	P (Ref)	R (Ref)	T (Ref)	A (Min)	G (Ref)	E (Ref)
A	3216-18	3.2 ± 0.2	1.6 ± 0.2	1.6 ± 0.2	0.9 ± 0.2	1.2 ± 0.1	0.8 ± 0.3	0.4 ± 0.15	0.10 ± 0.10	0.4	0.4	0.13	0.8	1.1	1.3
		(.126 ± .008)	(.063 ± .008)	(.063 ± .008)	(.035 ± .008)	(.047 ± .004)	(.031 ± .012)	(.016 ± .006)	(.004 ± .004)	(0.016)	(0.016)	(0.005)	(0.031)	(0.043)	(0.051)
B	3528-21	3.5 ± 0.2	2.8 ± 0.2	1.9 ± 0.2	1.1 ± 0.2	2.2 ± 0.1	0.8 ± 0.3	0.4 ± 0.15	0.10 ± 0.10	0.5	1	0.13	1.1	1.8	2.2
		(.138 ± .008)	(.110 ± .008)	(.075 ± .008)	(.043 ± .008)	(.087 ± .004)	(.031 ± .012)	(.016 ± .006)	(.004 ± .004)	(0.02)	(0.039)	(0.005)	(0.043)	(0.071)	(0.087)
C	6032-28	6.0 ± 0.3	3.2 ± 0.3	2.5 ± 0.3	1.4 ± 0.2	2.2 ± 0.1	1.3 ± 0.3	0.5 ± 0.15	0.10 ± 0.10	0.9	1	0.13	2.5	2.8	2.9
		(.236 ± .012)	(.126 ± .012)	(.098 ± .012)	(.055 ± .008)	(.087 ± .004)	(.051 ± .012)	(.020 ± .006)	(.004 ± .004)	(0.035)	(0.039)	(0.005)	(0.098)	(0.11)	(0.114)
D	7343-31	7.3 ± 0.3	4.3 ± 0.3	2.8 ± 0.3	1.5 ± 0.2	2.4 ± 0.1	1.3 ± 0.3	0.5 ± 0.15	0.10 ± 0.10	0.9	1	0.13	3.8	3.5	3.5
		(.287 ± .012)	(.169 ± .012)	(.110 ± .012)	(.059 ± .008)	(.094 ± .004)	(.051 ± .012)	(.020 ± .006)	(.004 ± .004)	(0.035)	(0.039)	(0.005)	(0.15}	(0.138)	(0.138}
X	7343-43	7.3 ± 0.3	4.3 ± 0.3	4.0 ± 0.3	2.3 ± 0.2	2.4 ± 0.1	1.3 ± 0.3	0.5 ± 0.15	0.10 ± 0.10	1.7	1	0.13	3.8	3.5**	3.5**
		(.287 ± .012)	(.169 ± .012)	(.157 ± .012)	(.091 ± .008)	(.094 ± .004)	(.051 ± .012)	(.020 ± .006)	(.004 ± .004)	(0.067)	(0.039)	(0.005)	(0.15)	(0.138}	(0.138)

Notes: 1 Metric dimensions govern
2 (Ref) - Dimensions provided for reference only
** Round Glue Pad 2.9 ±0.1mm (.114 ±.004) in diameter at Supplier's option

Low Profile Capacitor Dimensions — Millimeters (Inches)

CDE	EIA/ IECQ	L	W	H Max.	K Min.	F	S	B (Ref)	X (Ref)	P (Ref)	R (Ref)	T (Ref)	A (Min)	G (Ref)	E (Ref)
S	3216-12	3.2 ± 0.2	1.6 ± 0.2	1.2	0.3	1.2 ± 0.1	0.8 ± 0.3	Note	0.05	Note	Note	0.13	0.8	1.1	1.3
		(.126 ± .008)	(.063 ± .008)	(0.047)	(0.012)	(.047 ± .004)	(.031 ± .012)	3	(0.002)	3	3	(0.005)	(0.031)	(0.043)	(0.051)
T	3528-12	3.5 ± 0.2	2.8 ± 0.2	1.2	0.3	2.2 ± 0.1	0.8 ± 0.3	Note	0.05	Note	Note	0.13	1.1	1.8	2.2
		(.138 ± .008)	(.110 ± .008)	(0.047)	(0.012)	(.087 ± .004)	(.031 ± .012)	3	(0.002)	3	3	(0.005)	(0.043)	(0.071)	(0.087)

Notes: 1 Metric dimensions govern
2 (Ref) - Dimensions provided for reference only
3 No dimensions provided for B, P or R because low profile cases do not have a bevel or notch

Part Numbering System

T491	A	106	K	025	A	S	–F
Series	Case	Capacitance	Tolerance	Voltage	Failure Rate Level		RoHS Compliant

T491 **S, D** **105** = 1.0 µF **K** = ±10% **004** = 4 Vdc **A** = Not Applicable
T, X **226** = 22 µF **M** = ±20% **035**= 35 Vdc
A, B, C **227** = 220 µF

(100% Matte Tin finish on terminals)

Type T491 Solid Tantalum Chip Capacitors

Ratings

Cap (µF)	Case Code CDE	Case Code EIA IECQ	Catalog Part Number	Max. DC Leakage µA @ 25 °C	Max. DF % @ 25 °C 120 Hz
4 WVdc @ +85 °C (2.7 WVdc @ 125 °C)					
15	T	3528L	T491T156K004AS-F	0.6	6
33	B	3528	T491B336K004AS-F	1.3	6
68	C	6032	T491C686K004AS-F	2.7	6
100	C	6032	T491C107K004AS-F	4	8
100	D	7343	T491D107K004AS-F	4	8
150	D	7343	T491D157K004AS-F	6	8
6 WVdc @ +85 °C (4 WVdc @ 125 °C)					
4.7	A	3216	T491A475K006AS-F	0.5	6
4.7	S	3216L	T491S475K006AS-F	0.5	6
6.8	A	3216	T491A685K006AS-F	0.5	6
6.8	B	3528	T491B685K006AS-F	0.5	6
10	A	3216	T491A106K006AS-F	0.6	6
10	B	3528	T491B106K006AS-F	0.6	6
10	T	3528L	T491T106K006AS-F	0.6	6
22	B	3528	T491B226K006AS-F	1.4	6
22	C	6032	T491C226K006AS-F	1.4	6
33	C	6032	T491C336K006AS-F	2	6
47	C	6032	T491C476K006AS-F	2.9	6
47	D	7343	T491D476K006AS-F	2.9	6
68	C	6032	T491C686K006AS-F	4.1	6
100	D	7343	T491D107K006AS-F	6	8
150	D	7343	T491D157K006AS-F	9	8
220	X	7343H	T491X227K006AS-F	13.2	8
220	D	7343	T491D227K006AS-F	13.2	8
330	X	7343H	T491X337K006AS-F	19.8	8
10 WVdc @ +85 °C (7 WVdc @ 125 °C)					
2.2	A	3216	T491A225K010AS-F	0.5	6
3.3	A	3216	T491A335K010AS-F	0.5	6
3.3	S	3216L	T491S335K010AS-F	0.5	6
4.7	A	3216	T491A475K010AS-F	0.5	6
4.7	B	3528	T491B475K010AS-F	0.5	6
6.8	A	3216	T491A685K010AS-F	0.7	6
6.8	B	3528	T491B685K010AS-F	0.7	6
6.8	T	3528L	T491T685K010AS-F	0.7	6
10	B	3528	T491B106K010AS-F	1	6
10	C	6032	T491C106K010AS-F	1	6
15	B	3528	T491B156K010AS-F	1.5	6
22	C	6032	T491C226K010AS-F	2.2	6
33	C	6032	T491C336K010AS-F	3.3	6
47	C	6032	T491C476K010AS-F	4.7	6
47	D	7343	T491D476K010AS-F	4.7	6
68	D	7343	T491D686K010AS-F	6.8	6
100	D	7343	T491D107K010AS-F	10	8
150	X	7343H	T491X157K010AS-F	15	8
220	X	7343H	T491X227K010AS-F	22	8

Cap (µF)	Case Code CDE	Case Code EIA IECQ	Catalog Part Number	Max. DC Leakage µA @ 25 °C	Max. DF % @ 25 °C 120 Hz
16 WVdc @ +85 °C (10 WVdc @ 125 °C)					
1.0	A	3216	T491A105K016AS-F	0.5	4
2.2	A	3216	T491A225K016AS-F	0.5	6
2.2	S	3216L	T491S225K016AS-F	0.5	6
3.3	A	3216	T491A335K016AS-F	0.5	6
3.3	B	3528	T491B335K016AS-F	0.5	6
4.7	A	3216	T491A475K016AS-F	0.8	6
4.7	B	3528	T491B475K016AS-F	0.8	6
4.7	T	3528L	T491T475K016AS-F	0.8	6
6.8	B	3528	T491B685K016AS-F	1.1	6
6.8	C	6032	T491C685K016AS-F	1.1	6
10	B	3528	T491B106K016AS-F	1.6	6
10	C	6032	T491C106K016AS-F	1.6	6
15	C	6032	T491C156K016AS-F	2.4	6
22	C	6032	T491C226K016AS-F	3.6	6
22	D	7343	T491D226K016AS-F	3.6	6
33	C	6032	T491C336K016AS-F	5.3	6
33	D	7343	T491D336K016AS-F	5.3	6
47	D	7343	T491D476K016AS-F	7.5	6
68	D	7343	T491D686K016AS-F	10.9	6
100	X	7343H	T491X107K016AS-F	16	8
150	X	7343H	T491X157K016AS-F	24	8
20 WVdc @ +85 °C (13 WVdc @ 125 °C)					
1.0	A	3216	T491A105K020AS-F	0.5	4
1.5	A	3216	T491A155K020AS-F	0.5	6
1.5	S	3216L	T491S155K020AS-F	0.5	6
2.2	A	3216	T491A225K020AS-F	0.5	6
2.2	B	3528	T491B225K020AS-F	0.5	6
3.3	A	3216	T491A335K020AS-F	0.7	6
3.3	B	3528	T491B335K020AS-F	0.7	6
3.3	T	3528L	T491T335K020AS-F	0.7	6
4.7	B	3528	T491B475K020AS-F	1	6
4.7	C	6032	T491C475K020AS-F	1	6
6.8	B	3528	T491B685K020AS-F	1.4	6
6.8	C	6032	T491C685K020AS-F	1.4	6
10	C	6032	T491C106K020AS-F	2	6
15	C	6032	T491C156K020AS-F	3	6
15	D	7343	T491D156K020AS-F	3	6
22	C	6032	T491C226K020AS-F	4.4	6
22	D	7343	T491D226K020AS-F	4.4	6
33	D	7343	T491D336K020AS-F	6.6	6
47	D	7343	T491D476K020AS-F	9.4	6
68	X	7343H	T491X686K020AS-F	13.6	6
100	X	7343H	T491X107K020AS-F	20	8

Note: CDE reserves the right to offer higher rated voltage substitutes within the same case size. The marking will indicate the higher voltage.

Cap (µF)	Case Code CDE	Case Code EIA IECQ	Catalog Part Number	Max. DC Leakage µA @ 25 °C	Max. DF % @ 25 °C 120 Hz
25 WVdc @ +85 °C (17 WVdc @ 125 °C)					
0.47	A	3216	T491A474K025AS-F	0.5	4
0.68	A	3216	T491A684K025AS-F	0.5	4
1.0	A	3216	T491A105K025AS-F	0.5	4
1.0	B	3528	T491B105K025AS-F	0.5	4
1.5	B	3528	T491B155K025AS-F	0.5	6
2.2	B	3528	T491B225K025AS-F	0.6	6
2.2	C	6032	T491C225K025AS-F	0.6	6
3.3	C	6032	T491C335K025AS-F	0.9	6
4.7	C	6032	T491C475K025AS-F	1.2	6
6.8	C	6032	T491C685K025AS-F	1.7	6
10	C	6032	T491C106K025AS-F	2.5	6
10	D	7343	T491D106K025AS-F	2.5	6
15	D	7343	T491D156K025AS-F	3.8	6
22	D	7343	T491D226K025AS-F	5.5	6
33	X	7343H	T491X336K025AS-F	8.3	6
35 WVdc @ +85 °C (23 WVdc @ 125 °C)					
0.10	A	3216	T491A104K035AS-F	0.5	4
0.15	A	3216	T491A154K035AS-F	0.5	4
0.22	A	3216	T491A224K035AS-F	0.5	4
0.33	A	3216	T491A334K035AS-F	0.5	4
0.47	A	3216	T491A474K035AS-F	0.5	4
0.47	B	3528	T491B474K035AS-F	0.5	4
0.68	B	3528	T491B684K035AS-F	0.5	4
1.0	B	3528	T491B105K035AS-F	0.5	4
1.5	C	6032	T491C155K035AS-F	0.5	6
2.2	C	6032	T491C225K035AS-F	0.8	6
3.3	C	6032	T491C335K035AS-F	1.2	6
4.7	C	6032	T491C475K035AS-F	1.7	6
4.7	D	7343	T491D475K035AS-F	1.7	6
6.8	D	7343	T491D685K035AS-F	2.4	6
10	D	7343	T491D106K035AS-F	3.5	6
15	X	7343H	T491X156K035AS-F	5.3	6
22	X	7343H	T491X226K035AS-F	7.7	6

Cap (µF)	Case Code CDE	Case Code EIA IECQ	Catalog Part Number	Max. DC Leakage µA @ 25 °C	Max. DF % @ 25 °C 120 Hz
50 WVdc @ +85 °C (33 WVdc @ 125 °C)					
0.10	A	3216	T491A104K050AS-F	0.5	4
0.15	A	3216	T491A154K050AS-F	0.5	4
0.15	B	3528	T491B154K050AS-F	0.5	4
0.22	B	3528	T491B224K050AS-F	0.5	4
0.33	B	3528	T491B334K050AS-F	0.5	4
0.47	B	3528	T491B474K050AS-F	0.5	4
0.47	C	6032	T491C474K050AS-F	0.5	4
0.68	C	6032	T491C684K050AS-F	0.5	4
1.0	C	6032	T491C105K050AS-F	0.5	4
1.5	C	6032	T491C155K050AS-F	0.5	6
1.5	D	7343	T491D155K050AS-F	0.8	6
2.2	D	7343	T491D225K050AS-F	1.1	6
3.3	D	7343	T491D335K050AS-F	1.7	6
4.7	D	7343	T491D475K050AS-F	2.4	6
6.8	X	7343H	T491X685K050AS-F	3.5	6

Note: CDE reserves the right to offer higher rated voltage substitutes within the same case size. The marking will indicate the higher voltage.

Notice and Disclaimer: All product drawings, descriptions, specifications, statements, information and data (collectively, the "Information") in this datasheet or other publication are subject to change. The customer is responsible for checking, confirming and verifying the extent to which the Information contained in this datasheet or other 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 any guarantee, warranty, representation or responsibility of any kind, expressed or implied. Statements of suitability for certain applications are based on the knowledge that the Cornell Dubilier company providing such statements ("Cornell Dubilier") has of operating conditions that such Cornell Dubilier company regards as typical for such applications, but are not intended to constitute any guarantee, warranty or representation regarding any such matter – and Cornell Dubilier specifically and expressly disclaims any guarantee, warranty or representation concerning the suitability for a specific customer application, use, storage, transportation, or operating environment. 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 Cornell Dubilier with reference to the use of any Cornell Dubilier products is given gratis (unless otherwise specified by Cornell Dubilier), and Cornell Dubilier assumes no obligation or liability for the advice given or results obtained. Although Cornell Dubilier strives to apply the most stringent quality and safety standards regarding the design and manufacturing of its products, in light of 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 or other appropriate protective measures) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage. Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated in such warnings, cautions and notes, or that other safety measures may not be required.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- View T491A335K016AS on WIN SOURCE
- Kemet Information

Optimize Your Supply Chain with WIN SOURCE Solutions

- Global Sourcing Solution
- Obsolete Management
- Cost Control Management
- Shortage Management
- Alternative Solution
- Excess Inventory Management