

# TANTALUM CHIP CAPACITORS

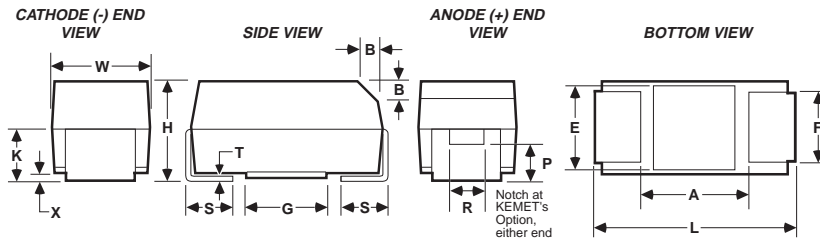
## T491 SERIES - Precision Molded Chip



### FEATURES

- Meets or Exceeds EIA Standard 535BAAC
- Taped and Reeled per EIA 481-1
- Symmetrical, Compliant Terminations
- Optional Gold-plated Terminations
- Laser-marked Case
- 100% Surge current test on C, D, U, V, X sizes
- Capacitance: 0.1  $\mu$ F to 470  $\mu$ F
- Tolerance:  $\pm$ 10%,  $\pm$ 20%
- Voltage: 3-50 VDC
- Extended Range Values
- New Low Profile Case Sizes

### CAPACITOR OUTLINE DRAWING



### STANDARD T491 DIMENSIONS

Millimeters (inches)

CASE SIZE	EIA/IECQ	COMPONENT													
		L*	W*	H*	K* $\pm$ 0.20 $\pm$ (.008)	F* $\pm$ 0.1 $\pm$ (.004)	S* $\pm$ 0.3 $\pm$ (.012)	B $\pm$ 0.15 (Ref) $\pm$ (.006)	X (Ref)	P (Ref)	R (Ref)	T (Ref)	A (Min)	G (Ref)	E (Ref)
A	3216	3.2 $\pm$ 0.2 (.126 $\pm$ .008)	1.6 $\pm$ 0.2 (.063 $\pm$ .008)	1.6 $\pm$ 0.2 (.063 $\pm$ .008)	0.9 (.035)	1.2 (.047)	0.8 (.031)	0.4 (.016)	0.10 $\pm$ 0.10 (.004 $\pm$ .004)	0.4 (.016)	0.4 (.016)	0.13 (.005)	0.8 (.031)	1.1 (.043)	1.3 (.051)
B	3528	3.5 $\pm$ 0.2 (.138 $\pm$ .008)	2.8 $\pm$ 0.2 (.110 $\pm$ .008)	1.9 $\pm$ 0.2 (.075 $\pm$ .008)	1.1 (.043)	2.2 (.087)	0.8 (.031)	0.4 (.016)	0.10 $\pm$ 0.10 (.004 $\pm$ .004)	0.5 (.020)	1.0 (.039)	0.13 (.005)	1.1 (.043)	1.8 (.071)	2.2 (.087)
C	6032	6.0 $\pm$ 0.3 (.236 $\pm$ .012)	3.2 $\pm$ 0.3 (.126 $\pm$ .012)	2.5 $\pm$ 0.3 (.098 $\pm$ .012)	1.4 (.055)	2.2 (.087)	1.3 (.051)	0.5 (.020)	0.10 $\pm$ 0.10 (.004 $\pm$ .004)	0.9 (.035)	1.0 (.039)	0.13 (.005)	2.5 (.098)	2.8 (.110)	2.4 (.094)
D	7343	7.3 $\pm$ 0.3 (.287 $\pm$ .012)	4.3 $\pm$ 0.3 (.169 $\pm$ .012)	2.8 $\pm$ 0.3 (.110 $\pm$ .012)	1.5 (.059)	2.4 (.094)	1.3 (.051)	0.5 (.020)	0.10 $\pm$ 0.10 (.004 $\pm$ .004)	0.9 (.035)	1.0 (.039)	0.13 (.005)	3.8 (.150)	3.5 (.138)	3.5 (.138)
X	7343H	7.3 $\pm$ 0.3 (.287 $\pm$ .012)	4.3 $\pm$ 0.3 (.169 $\pm$ .012)	4.0 $\pm$ 0.3 (.157 $\pm$ .012)	2.3 (.091)	2.4 (.094)	1.3 (.051)	0.5 (.020)	0.10 $\pm$ 0.10 (.004 $\pm$ .004)	1.7 (.067)	1.0 (.039)	0.13 (.005)	3.8 (.150)	3.5** (.138)	3.5** (.138)

- Notes: 1. Metric dimensions govern.  
 2. (Ref) - Dimensions provided for reference only.  
 \* Mil-C-55365/8 Specified Dimensions  
 \*\* Round Glue Pad: 2.9  $\pm$  0.1mm (0.114"  $\pm$  0.004") in diameter at KEMET's option

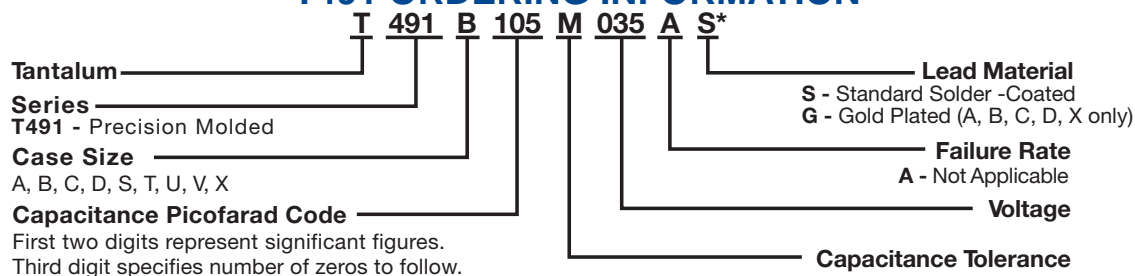
### LOW PROFILE T491 DIMENSIONS

Millimeters (inches)

CASE SIZE	EIA/IECQ	COMPONENT										
		L	W	H Max.	K Min.	F $\pm$ 0.1	S $\pm$ 0.3	X (Ref)	T (Ref)	A (Min)	G (Ref)	E (Ref)
S	3216L	3.2 $\pm$ 0.2 (.126 $\pm$ .008)	1.6 $\pm$ 0.2 (.063 $\pm$ .008)	1.2 (.047)	0.3 (.012)	1.2 (.047)	0.8 (.031)	0.05 (.002)	0.13 (.005)	0.8 (.031)	1.1 (.043)	1.3 (.051)
T	3528L	3.5 $\pm$ 0.2 (.138 $\pm$ .008)	2.8 $\pm$ 0.2 (.110 $\pm$ .008)	1.2 (.047)	0.3 (.012)	2.2 (.087)	0.8 (.031)	0.05 (.002)	0.13 (.005)	1.1 (.043)	1.8 (.071)	2.2 (.087)
*Q		6.0 $\pm$ 0.3 (.236 $\pm$ .012)	3.2 $\pm$ 0.3 (.126 $\pm$ .012)	1.0 (0.039)	0.5 (0.020)	2.2 (.087)	1.3 (.051)	0.05 (.002)	0.13 (.005)	2.5 (.098)	2.8 (.110)	2.4 (.094)
U	6032L	6.0 $\pm$ 0.3 (.236 $\pm$ .012)	3.2 $\pm$ 0.3 (.126 $\pm$ .012)	1.5 (0.059)	0.5 (0.020)	2.2 (.087)	1.3 (.051)	0.05 (.002)	0.13 (.005)	2.5 (.098)	2.8 (.110)	2.4 (.094)
V	7343L	7.3 $\pm$ 0.3 (.287 $\pm$ .012)	4.3 $\pm$ 0.3 (.169 $\pm$ .012)	2.0 (0.079)	1.1 (0.043)	2.4 (.094)	1.3 (.051)	0.05 (.002)	0.13 (.005)	3.8 (.150)	3.5 (.138)	3.5 (.138)

- 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 a notch.  
 \* Under development

### T491 ORDERING INFORMATION



\*Part number example: T491B105M035AS (14 digits - no spaces)  
 M -  $\pm$  20%  
 K -  $\pm$  10%

## T491 TANTALUM CHIP CAPACITANCE VALUES

### Case Size by Capacitance and Voltage

#### Standard Capacitance Values

#### Extended Capacitance Values

Capacitance		Rated Voltage @ +85°C								Capacitance		Rated Voltage @ +85°C									
μF	Code	4	6	10	16	20	25	35	50	μF	Code	3	4	6	10	16	20	25	35	50	
0.10	104							A	A	0.10	104										
0.15	154							A	B	0.15	154										A
0.22	224							A	B	0.22	224										
0.33	334							A	A	B	0.33	334									
0.47	474							A	B	C	0.47	474								A	B
0.68	684					A	A	B	C	0.68	684									A	B
1.0	105				A	A	B	B	C	1.0	105						S	A	A		
1.5	155			A	A	A	B	C	D	1.5	155						S	A	B	C	
2.2	225		A	A	A	A/B	C	C	D	2.2	225					S		B	B	C	
3.3	335	A	A	A	A/B	B	C	C	D	3.3	335				S		T/A	B			
4.7	475	A	A	A/B	B	B/C	C	D	D	4.7	475			S	S	T/A				C	
6.8	685	A	A/B	B	B/C	C	C	D		6.8	685		S	S	T/A		U/B			C	X
10.0	106	A/B	B	B/C	C	C	D	D		10.0	106		S	T/A	T/A	U/B	U/B	C			
15.0	156	B	B/C	C	C	D	D			15.0	156		T/A	T/A	U/B	U/B	C			D/X	
22.0	226	B/C	C	C	D	D	D			22.0	226		T/A	U/B/A	U/B	U/C/B	V/C			X/D	
33.0	336	C	C	D	D	D				33.0	336	A	U/B/A	U/B	U/V C/B	C/U			X/D		
47.0	476	C	D	D	D					47.0	476		U/B	U/C/B	V/C/U	V	D				
68.0	686	D	D	D						68.0	686		U/C/B	C/U	V/C	D	X				
100.0	107	D	D							100.0	107		C/U	V/C	V/D	D/X	X				
150.0	157	D								150.0	157		V/C	V/D	D/X	X					
220.0	227									220.0	227		V	D/X	D/X						
330.0	337									330.0	337		D	D/X	X						
470.0	477									470.0	477		D/X	X	X						

Note that standard values are preferred. Extended values are available for use where size constraints exist. Note that standard values demonstrate inherently lower failure rates than extended values, especially in low impedance applications.



### T491 RATINGS & PART NUMBER REFERENCE

Capacitance μF	Case Size	KEMET Part Number	DC Leakage μA @ 25°C Max	DF % @ +25°C 120 Hz Max	ESR Ω @ +25°C 100 kHz Max
<b>20 Volt Rating at +85°C (13 Volt Rating at +125°C) cont'd</b>					
1.5	A	T491A155(1)020AS	0.5	6.0	8.0
#1.5	*S	T491S155(1)020AS	0.5	6.0	15.0
2.2	B	T491B225(1)020AS	0.5	6.0	3.5
2.2	A	T491A225(1)020AS	0.5	6.0	7.0
3.3	B	T491B335(1)020AS	0.7	6.0	3.5
#3.3	*A	T491A335(1)020AS	0.7	6.0	7.0
#3.3	*T	T491T335(1)020AS	0.7	6.0	5.0
4.7	C	T491C475(1)020AS	1.0	6.0	2.4
4.7	B	T491B475(1)020AS	1.0	6.0	3.5
6.8	C	T491C685(1)020AS	1.4	6.0	1.9
#6.8	*B	T491B685(1)020AS	1.4	6.0	3.5
#6.8	*U	T491U685(1)020AS	1.4	6.0	1.9
10.0	C	T491C106(1)020AS	2.0	6.0	1.8
#10.0	*B	T491B106(1)020AS	2.0	6.0	3.0
#10.0	*U	T491U106(1)020AS	2.0	6.0	1.8
15.0	D	T491D156(1)020AS	3.0	6.0	1.0
15.0	*C	T491C156(1)020AS	3.0	6.0	1.7
22.0	D	T491D226(1)020AS	4.4	6.0	0.8
#22.0	*C	T491C226(1)020AS	4.4	6.0	1.2
#22.0	*V	T491V226(1)020AS	4.4	6.0	0.7
33.0	D	T491D336(1)020AS	6.6	6.0	0.8
47.0	*D	T491D476(1)020AS	9.4	6.0	0.7
68.0	*X	T491X686(1)020AS	13.6	6.0	0.7
#100.0	*X	T491X107(1)020AS	20.0	8.0	0.5
<b>25 Volt Rating at +85°C (17 Volt Rating at +125°C)</b>					
0.33	A	T491A334(1)025AS	0.5	4.0	15.0
0.47	A	T491A474(1)025AS	0.5	4.0	14.0
0.68	A	T491A684(1)025AS	0.5	4.0	10.0
1.0	B	T491B105(1)025AS	0.5	4.0	5.0
1.0	*A	T491A105(1)025AS	0.5	4.0	8.0
1.5	B	T491B155(1)025AS	0.5	6.0	5.0
1.5	*A	T491A155(1)025AS	0.5	6.0	10.0
2.2	C	T491C225(1)025AS	0.6	6.0	3.5
2.2	*B	T491B225(1)025AS	0.6	6.0	4.5
3.3	C	T491C335(1)025AS	0.9	6.0	2.5
3.3	*B	T491B335(1)025AS	0.9	6.0	3.5
4.7	C	T491C475(1)025AS	1.2	6.0	2.4
6.8	C	T491C685(1)025AS	1.7	6.0	1.9
10.0	D	T491D106(1)025AS	2.5	6.0	1.0
10.0	*C	T491C106(1)025AS	2.5	6.0	1.5
15.0	D	T491D156(1)025AS	3.8	6.0	1.0
22.0	*D	T491D226(1)025AS	5.5	6.0	0.8
33.0	*X	T491X336(1)025AS	8.3	6.0	0.7
#33.0	*D	T491D336(1)025AS	8.3	6.0	0.7

Capacitance μF	Case Size	KEMET Part Number	DC Leakage μA @ 25°C Max	DF % @ +25°C 120 Hz Max	ESR Ω @ +25°C 100 kHz Max
<b>35 Volt Rating at +85°C (23 Volt Rating at +125°C)</b>					
0.10	A	T491A104(1)035AS	0.5	4.0	20.0
0.15	A	T491A154(1)035AS	0.5	4.0	19.0
0.22	A	T491A224(1)035AS	0.5	4.0	18.0
0.33	A	T491A334(1)035AS	0.5	4.0	15.0
0.47	B	T491B474(1)035AS	0.5	4.0	8.0
0.47	*A	T491A474(1)035AS	0.5	4.0	14.0
0.68	B	T491B684(1)035AS	0.5	4.0	6.5
0.68	*A	T491A684(1)035AS	0.5	4.0	10.0
1.0	B	T491B105(1)035AS	0.5	4.0	5.0
1.0	*A	T491A105(1)035AS	0.5	4.0	10.0
1.5	C	T491C155(1)035AS	0.5	6.0	4.5
1.5	*B	T491B155(1)035AS	0.5	6.0	5.0
2.2	C	T491C225(1)035AS	0.8	6.0	3.5
2.2	*B	T491B225(1)035AS	0.8	6.0	4.0
3.3	C	T491C335(1)035AS	1.2	6.0	2.5
4.7	D	T491D475(1)035AS	1.7	6.0	1.5
4.7	*C	T491C475(1)035AS	1.7	6.0	2.5
6.8	D	T491D685(1)035AS	2.4	6.0	1.3
6.8	*C	T491C685(1)035AS	2.4	6.0	2.0
10.0	*D	T491D106(1)035AS	3.5	6.0	1.0
15.0	*X	T491X156(1)035AS	5.3	6.0	0.9
15.0	*D	T491D156(1)035AS	5.3	6.0	0.8
22.0	*X	T491X226(1)035AS	7.7	6.0	0.7
#22.0	*D	T491D226M035AS	7.7	6.0	0.7
<b>50 Volt Rating at +85°C (33 Volt Rating at +125°C)</b>					
0.10	A	T491A104(1)050AS	0.5	4.0	20.0
0.15	B	T491B154(1)050AS	0.5	4.0	16.0
0.15	*A	T491A154(1)050AS	0.5	4.0	19.0
0.22	B	T491B224(1)050AS	0.5	4.0	14.0
0.33	B	T491B334(1)050AS	0.5	4.0	10.0
0.47	C	T491C474(1)050AS	0.5	4.0	8.0
0.47	*B	T491B474(1)050AS	0.5	4.0	9.0
0.68	C	T491C684(1)050AS	0.5	4.0	7.0
0.68	*B	T491B684(1)050AS	0.5	4.0	8.0
1.0	C	T491C105(1)050AS	0.5	4.0	5.5
1.5	D	T491D155(1)050AS	0.8	6.0	3.5
1.5	*C	T491C155(1)050AS	0.8	6.0	4.5
2.2	D	T491D225(1)050AS	1.1	6.0	2.5
2.2	*C	T491C225(1)050AS	1.1	6.0	3.5
3.3	D	T491D335(1)050AS	1.7	6.0	2.0
4.7	*D	T491D475(1)050AS	2.4	6.0	1.5
6.8	*X	T491X685(1)050AS	3.5	6.0	1.0

(1) To complete KEMET Part Number, insert M for ±20% tolerance or K for ±10% tolerance.

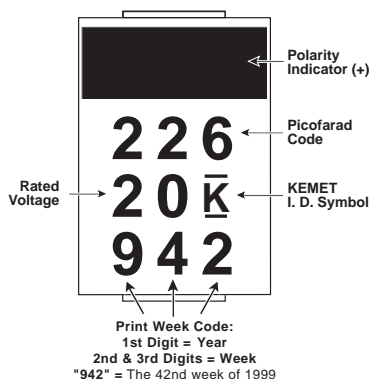
Higher voltage ratings and tighter capacitance tolerance product may be substituted within the same size at KEMET's option. Voltage substitutions will be marked with the higher voltage rating.

\*Extended Values      \*\*6 Volt product equivalent to 6.3 volt product.

#Maximum Capacitance Change @ 125°C=+15%. (All others = +12%)

### CAPACITOR MARKINGS

#### T491 Series — All Case Sizes



### CONSTRUCTION

