Manufacturer's Cross Reference and Tantalum Chip Capacitor Part Numbering Systems

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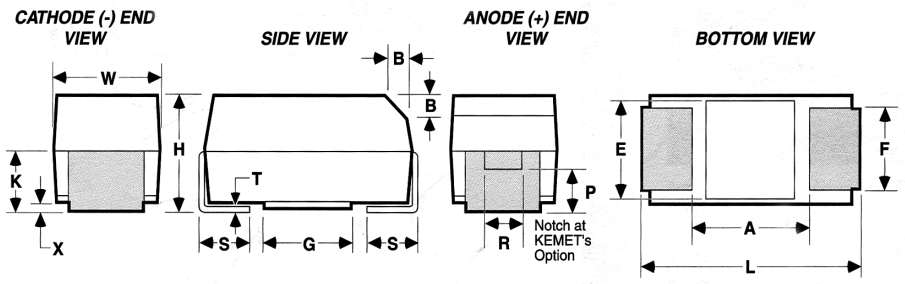
ATTENTION:

When crossing another manufacturers' part number to KEMET T491 part number, you must be sure to correctly identify the manufacturers' case size. Some part numbering schemes do not include a case size code, so you must ask the user of the part number to identify dimensions. There are a variety of non - EIA case sizes on the market. There are also multiple case sizes offered for some cap/voltage ratings. Remember that any T491 part offered must not only meet the required cap/voltage requirements, but must also fit the pad layout on the users' board. Complete CV/case size matrices for all manufacturers' series are beyond the scope of this guide and readily become obsolete. If in doubt, ask the user for dimensions or samples.

NOTES:

1. **pF code for Capacitance:** The first two digits specify significant figures. The third digit specifies the number of zeros to follow.
2. **Dimension Tables:** Where necessary, dimension tables are used to describe manufacturers' case code designations. Nominal outline dimensions are provided to show nominal overall Length, Width, Height (L,W,H). All dimensions are in mm. These tables are used to illustrate case size equivalency only and are not intended to represent complete engineering drawings. Therefore, tolerances and other capacitor dimensions are not shown. Equivalent T491/EIA size code designations are listed. Non-EIA case sizes are identified as N/A (not available). Asterisks (*) are used to denote the T491/EIA size code when the manufacturers' footprint (L,W) is equivalent, but not identical to the EIA nominal.
3. **Polarity Orientation in Tape:** Right hand orientation specifies anode away from sprocket holes. Left hand orientation specifies anode toward sprocket holes. (Left Hand orientation is NOT available on KEMET T491 product.)
4. **EIA Standard:** Unless otherwise stated, all references to "EIA" refer to EIA-535 BAAC Standard for fixed Tantalum Chip Capacitors.
5. **KEMET Non-Equivalent** Tantalum Chip series that have no equivalent T491/EIA-535BAAC size or style are footnoted in each manufacturers' section.

KEMET Tantalum Chip Outline Drawings



Standard Dimensions - Millimeters (inches)

Case Size		Component													
KEMET	EIA	L*	W*	H*	K* ± 0.20 ± (.008)	F* ±0.1 ± (.004)	S* ± 0.3 ± (.012)	B (Ref) ± 0.15 ± (.004)	X (Ref)	P (Ref)	R (Ref)	T (Ref)	A (Min)	G (Ref)	E (Ref)
A	3216-18	3.2 ± 0.2 (.126 ± .008)	1.6 ± 0.2 (.063 ± .008)	1.6 ± 0.2 (.063 ± .008)	0.9 (.035)	1.2 (.047)	0.8 (.031)	0.4 (.016)	0.10 ± 0.10 (.004 ± .004)	0.4 (.016)	0.4 (.016)	0.13 (.005)	0.8 (.031)	1.1 (.043)	1.3 (.051)
B	3528-21	3.5 ± 0.2 (.138 ± .008)	2.8 ± 0.2 (.110 ± .008)	1.9 ± 0.2 (.075 ± .008)	1.1 (.043)	2.2 (.087)	0.8 (.031)	0.4 (.016)	0.10 ± 0.10 (.004 ± .004)	0.5 (.020)	1.0 (.039)	0.13 (.005)	1.1 (.043)	1.8 (.071)	2.2 (.087)
C	6032-28	6.0 ± 0.3 (.236 ± .012)	3.2 ± 0.3 (.126 ± .012)	2.5 ± 0.3 .098 ± .012	1.4 (.055)	2.2 (.087)	1.3 (.051)	0.5 (.020)	0.10 ± 0.10 (.004 ± .004)	0.9 (.035)	1.0 (.039)	0.13 (.005)	2.5 (.098)	2.8 (.110)	2.4 (.094)
D	7343-31	7.3 ± 0.3 (.287 ± .012)	4.3 ± 0.3 (.169 ± .012)	2.8 ± 0.3 (.110 ± .012)	1.5 (.059)	2.4 (.094)	1.3 (.051)	0.5 (.020)	0.10 ± 0.10 (.004 ± .004)	0.9 (.035)	1.0 (.039)	0.13 (.005)	3.8 (.150)	3.5 (.138)	3.5 (.138)
Y	7343-40	7.3 ± 0.3 (.287 ± .012)	4.3 ± 0.3 (.169 ± .012)	4.0 max.	1.3 (.051)	2.4 (.094)	1.3 (.051)	– –	0.10 ± 0.10 (.004 ± .004)	– –	– –	0.13 (.005)	3.8 (.150)	3.5 (.138)	3.5 (.138)
X	7343-43	7.3 ± 0.3 (.287 ± .012)	4.3 ± 0.3 (.169 ± .012)	4.0 ± 0.3 (.157 ± .012)	2.3 (.091)	2.4 (.094)	1.3 (.051)	0.5 (.020)	0.10 ± 0.10 (.004 ± .004)	1.7 (.067)	1.0 (.039)	0.13 (.005)	3.8 (.150)	3.5** (.138)	3.5** (.138)
E	7260-38	7.3 ± 0.3 (.287 ± .012)	6.0 ± 0.3 (.236 ± .012)	3.6 ± 0.2 (.142 ± .008)	2.3 (.091)	4.1 (.161)	1.3 (.051)	0.5 (.020)	0.10 ± 0.10 (.004 ± .004)	0.9 (.035)	1.0 (.039)	0.13 (.005)	3.8 (.150)	3.5 (.138)	3.5 (.138)

Low Profile Dimensions

Case Size		Component										
KEMET	EIA	L*	W*	H Max.	K Min.	F* ±0.1	S* ± 0.3	X (Ref)	T (Ref)	A (Min)	G (Ref)	E (Ref)
R	2012-12	2.0 ± 0.2 (.079 ± .008)	1.3 ± 0.2 (.051 ± .008)	1.2 (.047)	0.3 (.012)	0.9 (.035)	0.5 (.020)	0.05 (.002)	0.13 (.005)	0.8 (.031)	0.5 (.020)	0.8 (.031)
S	3216-12	3.2 ± 0.2 (.126 ± .008)	1.6 ± 0.2 (.063 ± .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	3528-12	3.5 ± 0.2 (.138 ± .008)	2.8 ± 0.2 (.110 ± .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)
U	6032-15	6.0 ± 0.3 (.236 ± .012)	3.2 ± 0.3 (.126 ± .012)	1.5 (.059)	0.5 (.020)	2.2 (.087)	1.3 (.051)	0.05 (.002)	0.13 (.005)	2.5 (.098)	2.8 (.110)	2.4 (.094)
V	7343-20	7.3 ± 0.3 (.287 ± .012)	4.3 ± 0.3 (.169 ± .012)	2.0 (.079)	0.09 (.035)	2.4 (.094)	1.3 .051)	0.05 (.002)	0.13 (.005)	3.8 (.150)	3.5 (.138)	3.5 (.138)

KEMET

T 491 A 104 M 035 A S

Tantalum

Series
491 - Industrial: EIA 535 BAAC
492 - CWR11 per Mil-C 55365/8
494 - Low ESR Industrial
495 - Low ESR, Surge Robust
496 - Fused
499 - High Temperature
510 - Multi Anode, Ultra Low ESR
520 - Low ESR, Organic Polymer
525 - High Temperature, Organic Polymer
530 - Multiple Anode, Organic Polymer

Case Code

A/3216-16	E/7260-38	T/3528-12
B/3528-21	X/7343-43	U/6032-15
C/6032-28	R/2012-12	V/7343-20
D/7343-31	S/3216-12	

Capacitance Code
Expressed in pF Code
See Note 1

Lead Material
S = 100% Tin
Tin Coated
G = Gold
T = 100% Tin
H = Sn Pb

Failure Rate
A = N/A
B = 0.1%/kHrs
C = 0.01%/kHrs
D = 0.001%/kHrs
B, C, D T492 Only

Rated Voltage
As Shown
035 = 35V
6 = 6.3V

Capacitance Tolerance
K = ± 10%
M = ± 20%

KEMET COTS

T 493 D 227 K 006 C H 6XXX

Tantalum

Series
T493 Military Commercial Off-The-Shelf

Case Size
A, B, C, D, X

Capacitance Picofarad Code
First two digits represent significant figures.
Third digit specifies number of zeros to follow.

Capacitance Tolerances
M = ±10%
K = ±10%
J = ±5% (For 5% tolerance contact KEMET sales rep.)

Voltage
As shown

Reliability Level
A - Non-ER
B - 0.1%/K hrs.
C - 0.01%/K hrs.

ESR/Surge Designator

6110	Surge = None	ESR = Standard
6120	Surge = None	ESR = Low
6210	Surge = 10 Cycles, +25ºC	ESR = Standard
6220	Surge + 10 Cycles, +25ºC	ESR = Low
6410	Surge = 10 Cycles, -55ºC and +85ºC	ESR = Standard
6420	Surge = 10 Cycles, -55ºC and +85ºC	ESR = Low

Note: For order entry purposes the last 4-digits of the part number will be entered in the KEMET Customer Specification (C-Spec)Field.

Termination Finish
B - Gold plated
C - Hot solder dipped
H - Solder plated
K - Solder fused

ARCO

ARCO Part No.	Kemet Equivalent
ACT 35D475M/TR	T491B475M035AS

ACT 35 D 475 M /TR

ARCO Series
ACT = T491

Rated Voltage
As shown 35 = 35V

Case Code

Mfr's Case Code	T491/EIA Equivalent
A	A/3216
B	B/3528
C	C/6032
D	D/7343

See Note 2.

Packaging

	T491
/TR = Tape and Reel	Standard
Blank = Bulk	N/A

Capacitance Tolerance
K = ± 10%
M = ± 20%

Capacitance Code
Expressed in pF Code
See Note 1

AVX

AVX Part No.	Kemet Equivalent
TAJB335M016R	T491B335M016AS

TAJ B 335 M 016 R XXXX

Series

TAJ = T491
TBJ = T492*, T493*
TPS = T495
**TCJ=T525
TAZ = Non EIA = T497
THJ = T499
TPM = T510
TRJ = T492, T493

** See AVX COTS*

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A	3.2	1.6	1.6	A/3216
B	3.5	2.8	1.9	B/3528
C	6.0	3.2	2.6	C/6032
D	7.3	4.3	2.9	D/7343
E	7.3	4.3	4.1	X/7343H
M	4.7	2.6	2.1	N/A
N	5.8	4.6	3.2	N/A
R	2.0	1.3	1.2	R/2012
S	3.2	1.6	1.2	S/3216L
T	3.5	2.8	1.2	T/3528L
V	7.3	6.1	3.5	E/7260
W	6.0	3.2	1.5	U/6032L
X	7.3	4.3	1.5	N/A
Y	7.3	4.3	2.0	V/7343L

See note 2

Other AVX Tantalum Chip Series that have no T491/EIA 535 - BAAC equivalent.
- TAK = Non molded - TPC = Non molded
- TRC = Non molded - TAC = Non molded

Max. ESR in mΩ
TPS, TPM Series only

Packaging

	T491
R = 7" Reel	Standard
S = 13" Reel	N/A
A = 7" Reel Au Plated	
B = 13" Reel Au Plated	
Y = Leadfree 7"	
P = Leadfree 13"	

Rated Voltage
As shown
016 = 16V
002 = 2.5V
006 = 6.3V

Capacitance Tolerance
M = ± 20%
K = ± 10%

Capacitance Code
Expressed in pF Code
See Note 1

Note: In Europe, part numbers may show capacitance in µF instead of pF (3R3 or 3.3 instead of 335)

** Refer to F3110 for complete polymer cross reference information.

AVX COTS

AVX Cots Part No.	Kemet Equivalent
TBJD227M006CRSB	T493D227M006BH6110

TBJ D 227 M 006 C R S B 00 00

Style
TBJ = T492, T493
TAZ = Non EIA = T497
(Refer to AVX Website for Case Sizes)

Case Size

Mfr's Case Code	Nominal Outline L	W	H	T493/EIA Equivalent
A	3.2	1.6	1.6	A/3216
B	3.5	2.8	1.9	B/3528
C	6.0	3.2	2.6	C/6032
D	7.3	4.3	2.9	D/7343
E	7.3	4.3	4.1	X/7343H
V	7.3	6.1	3.5	E/7260

Capacitance Code
Expressed in pF Code
See Note 1

Capacitance Tolerance
M = ± 20%
K = ± 10%
J = ± 5% (Special order only)

Voltage Code
As Shown
Note: 006 = 6.3V

Standard or Low ESR Range
C = Standard
L = Low ESR

Packaging
B = Bulk
R = 7" T&R
S = 13" T&R

Reliability
Reliability Failure Rate Level
Weibull B = .1%/1K HR
Weibull C = .01%/1K HR
Commercial Z = Non-ER

Qualification
Qualification Inspection Level
S = Standard
L = Group A

Termination Finish
00 = Solder Fused
08 = Hot Solder Dipped
09 = Gold

Surge Test Option
00 = None
23 = 10 Cycles, +25°C
24 = 10 Cycles, -55°C & + 85°C
45 = 10 Cycles, -55°C & + 85°C before Weibull

CAL-CHIP

Cal-Chip Part No.	Kemet Equivalent
TCM1C105AT	T491A105M016AS

TC M IC 105 A T

Series
TC = T491

Capacitance Tolerance
M = ± 20%
K = ± 10%

Voltage Code

0D = 2V	ID = 20V
0G = 4V	IE = 25V
0J = 6.3V	IV = 35V
IA = 10V	IX = 50V
IC = 16V	

Case Size

Mfr's Case Code	T491/EIA Equivalent
A	A/3216
B	B/3528
C	C/6032
D	D/7343
E	X/7343H

Capacitance Code
Expressed in pF Code
See Note 1

Packaging
T = Tape and Reel
= T491 std

DAEWOO/PARTSNIC

Daewoo Part No.	Kemet Equivalent
TCM1C105ASSR	T491A105M016AS

TC M 1C 105 A S S R

Series
TC = T491
TS = T491
TL = T491
TE = T495
TK = T520

Capacitance Tolerance
M = ± 20%
K = ± 10%
J = ± 5%
V = -10 ~ + 20%
Q = -10 ~ + 30%
T = -10 ~ + 50%

Voltage Code
0G = 4V
0J = 6.3V
1A = 10V
1C = 16V
1D = 20V
1E = 25V
1V = 35V
1H = 50V

Capacitance Code
Expressed in pF code.
**See note 1*

Packaging
R = Tape and Reel
B = Bulk

Lead
S = Standard

Design
S = Standard

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A	3.2	1.6	1.7	A/3216
B2(or T)	3.5	2.8	1.9	B/3528
B	4.7	2.6	1.8	N/A
C	6.0	3.2	2.5	C/6032
D2(or K)	5.8	4.6	3.2	N/A
D	7.3	4.3	2.8	D/7343

ELNA

ELNA Part No.	Kemet Equivalent
SKIE334MRA	T491A334M025AS

SK -- 1E 334 M R A

Series
SK = T491
SKF = T491
SK_ = T491
SL = T495
SL_ = T495
TPM = T510

Voltage Code
e = 2.5V
0G = 4V
0J = 6.3V
1A = 10V
1C = 16V
1D = 20V
1E = 25V
1V = 35V

Capacitance Code
Expressed in pF Code
See Note 1
Note: In Europe, part numbers may show capacitance in µF instead of pF

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A	3.2	1.6	1.6	A/3216
B	3.4	2.8	1.9	*B/3528
C	6.0	3.2	2.5	C/6032
D	7.3	4.3	2.8	D/7343
P	2.0	1.2	1.2	R/2012
S(A2)	3.2	1.6	1.2	S/3216L

**See note 2*

Polarity
R = Standard

Capacitance Tolerance
M = ± 20%
K = ± 10%

Note: Case code is not included in part number. Elna case size must be identified prior to determination of equivalent KEMET P/N.

EPCOS

Epcos Part No. B45196-E3105-M109

Kemet Equivalent T491A105M016AS

B 45 192 E 3 226 M 30 *

Passive Component

Solder Plated	Gold Plated	Type	KEMET
B45196E	B45198E	Standard	T491
B45196H	B45198H	High cap.	T491
B45196P	B45198P	Performance	T491
B45197A	B45198R	Low ESR	T495
B45194E	B45195E	Low Profile/Std.	T491V
B45194R	B45195R	Low Profile/Low ESR	T495V
B45194A	–	P Case/Z Case	T491S/NA
B45192E	–	W Case/X Case	T491U/NA
B45192R	–	Low ESR W Case Low ESR X Case	T491 N/A
B45292R*	–	Polymer 1.5mm	T520
B45294R*	–	Polymer	T520
B45496R*	–	Poly Multi	T530
B45396R	–	MnO_2 Multi	T510

Tantalum Capacitor

Series
192 = tinned terminals
E = Standard
R = Low ESR

Voltage Code

0 = 4V	3 = 16V	6 = 35V
1 = 6V	4 = 20V	7 = 50V
2 = 10V	5 = 25V	9 = 2.5V

Capacitance Code
Expressed in pF Code
See Note 1

Capacitance Tolerance
J = ± 5% upon request
K = ± 10%
M = ± 20%

Case Code

Mfr's Letter Code	Mfr's P/N Code	T491/EIA Equivalent
A	10	A/3216
B	20	B/3528
C	30	C/6032
D	40	D/7343
E	50	X/7343H
P	-	S/3216L
V	40	V/7343L
Z	-	P/2012
W	30	U/6032
X	40	N/A

Packaging

	T491
9 = 7" Reel	Std
6 = 13" Reel	C7280

* Refer to F3110 for complete polymer cross reference information.

FUJITSU/TOWA

Fujitsu/Towa Part No. TA010TCM1R5M-AR

Kemet Equivalent T491A155M010AS

TA 010 TCM 1R5 M A R ***

Code
TA = Tantalum
*FP = Functional Polymer

Voltage Code
as Shown

010 = 10V	6R3 = 6v
4R0 = 4V	020 = 20V

Series
TCM, TCML, TCMS, TCMH = T491
TCR = T495, CS = T520
TNC, TNCF = T496

Capacitance Code
Expressed in µF Code
R = Decimal point

Capacitance Tolerance
M = ± 20%

Optional ESR Specication

Packaging

	T491
R = Right Hand 7"	Std.
L = Left Hand, 7"	N/C
M = Right Hand, 13"	C7280
H = Left Hand, 13"	N/A

See note 3.

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A	3.2	1.6	1.6	A/3216
B2	3.5	2.8	1.9	B/3528
C1	6.0	3.2	2.5	C/6032
E	7.3	4.3	2.9	X/7343H
J	1.6	0.8	0.8	N/A/1608
P	2.0	1.2	1.2	R/2012
EO	7.3	4.3	1.8	V/7343-20

* Refer to F3110 for complete polymer cross reference information.

HITACHI

Hitachi Part No.	Kemet Equivalent
TMCMB1E155MTRF	T491B155M02SAT

TMCM B 1E 155 M T R F

Series
- TMCM/TMCS = T491
- TMCU or TMU = Low Profile = T491
- TMCTX or TMX = Fused = T496
- TMCR = Low ESR = T494 or T495
- TMCH = Hi Rel/Auto = T491...AUTO
- **TMCN = T520

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A	3.2	1.6	1.6	A/3216
B	3.5	2.8	1.9	B/3528
C	5.8	3.2	2.5	*C/6032
E	7.3	4.3	2.8	D/7343
J	1.6	0.8	0.9	N/A
P	2.0	1.2	1.2	R/2012
UA	3.2	1.6	1.2	S/3216L
UB	3.5	2.8	1.2	T3628L
UC	5.8	3.2	1.5	*U/6032L
UE	7.3	4.3	1.9	V/7343L

*See note 2 ** Refer to F3110 for complete polymer cross reference information

Termination Code
F = Sn 100

Polarity Orientation (T491: Std.)
R = Right Hand
L = Left Hand
N/A

Packaging (T491: Std. N/A)
T = Tape and Reel
Blank = Bulk

Capacitance Tolerance
M = ± 20%, K = ± 10%

Capacitance Code
Expressed in pF Code
See Note 1

Voltage Code

OG = 4V	1C = 16V	1V = 35V
OJ = 7V	1D = 20V	1H = 50V
1A = 10V	1E = 25V	

KOA SPEER

KOA Speer	Kemet Equivalent
TMC1ECTTE475MP	T491C475M025AS

TMC 1E C T TE 475 M P

Type

TMX = T496	TMC = T491
TMU = T491	TMR = T495
TMH = T491	

Voltage Code

OE = 2.5V	1A = 10V	1E = 25V
OG = 4V	1C = 16V	1V = 35V
OJ = 7V	1D = 20V	1H = 50V

Case Size
P = 2012 A = 3216 B = 3528
C = 6032 E = EIA-D

Polarity

Tolerance
M = ± 20%, K = ± 10%

Nominal Capacitance
Expressed in pF code
See Note 1

Packaging
TE = 7" Embossed Plastic

Termination Material
T = Sn L = Sn Pb

MALLORY

Mallory Part No.	Kemet Equivalent
T491A104M035AS	T491A104M035AS

T 491 A 104 M 035 A S

Tantalum

Series
491 - Industrial: EIA 535 BAAC
492 - CWR11 per Mil-C 55365/8
493 - COTS
494 - Low ESR Industrial
495 - Low ESR, Surge Robust
496 - Fused
499 - High Temperature
510 - Multi Anode, Ultra Low ESR
520 - Low ESR Organic
525 - High Temperature Organic
530 - Multiple Anode, Low ESR Organic

Case Code

A/3216	E/7260	T/3528L
B/3528	X/7343H	U/6032L
C/6032	R/2012L	V/7343L
D/7343	S/3216L	

Lead Material
S = Standard Tin Coated
G = Gold, T = 100% Tin
H = Sn Pb

Failure Rate
A = N/A B = 0.1%/kHrs
C = 0.01%/kHrs D = 0.001%/kHrs
B, C, D T492 Only

Rated Voltage
As Shown 035 = 35V

Capacitance Tolerance
K = ± 10% M = ± 20%

Capacitance Code
Expressed in pF Code
See Note 1

MATSUO

Matsuo Part No.	Kemet Equivalent
267L3502685MR-720	T491D685M035AS

267 L 3502 685 M R 720

Series
251 = Ultraminiature = T491
267 = T491
269 = Fused = T496
277 = Low Profile T491
271 = Automotive = T491...AUTO
281 = Low ESR = T495

Failure Rate
L: 2%/1000 hrs.
M:1%/1000 hrs.
E: Extended

Voltage Code

4001 = 4V	1602 = 16V	3502 = 35V
6301 = 6.3V	2002 = 20V	5002 = 50V
1002 = 10V	2502 = 25V	

Note: Case code is not included in part number. (SIZE CODE SUFFIX may not always be available). Matsua case size must be identified prior to determination of equivalent KEMET P/N.

Size/Range Code
- 720: Denotes EIA case sizes (Cs/6032 and D3/7343)
- 533: Denotes extended range values

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A	3.2	1.6	1.6	A/3216
B	3.5	2.8	1.9	B/3528
C3	6.0	3.2	2.5	C/6032
D3	7.3	4.4	2.8	D/7343
H	7.3	4.3	4.1	X/7343H
E	7.3	5.8	3.5	E/7260
251M	1.6	0.8	0.9	N/A
277A	3.2	1.6	1.2	S/3216L
277B	3.5	2.8	1.2	T/3528L
278S	2.0	1.2	1.2	R/2012

Polarity Orientation **T491**
R = Right Hand Std.
L = Left Hand N/A

Capacitance Tolerance
M = ±20%
K = ±10%
J = ± 5%

Capacitance Code
Expressed in pF Code
See Note 1

NEC/TOKIN

NEC/Tokin Part No.	Kemet Equivalent
ESVA1A155M25R	T491A155M010AS

ESV A 1A 155 M 25 R

Series
E/SV = T491
F/SV = Facedown = N/A
SV/H = T491
SV/F = T496
*PS/L = T520
*PS/G = T520
SV/Z = Low ESR = T494 or T495

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A2(U)	3.2	1.6	1.6	S/3216L
A	3.2	1.6	1.6	A/3216
B3(W)	3.5	2.8	1.1	T/3528L
C	6.0	3.2	2.5	C/6032
C2	6.0	3.2	1.4	U/6032L
D	7.3	4.3	2.8	D/7343
J	1.6	0.8	0.8	N/A
V	7.3	4.3	1.9	V/7343L
S(B2)	3.5	2.8	1.9	B/3528
P	2.0	1.2	1.2	R/2012

See note 2.

Note: NEC Series PSL, PSM PSN are polymer cathode types similar to KEMET Ko Cap T520 Series.

Packaging **T491**
R: Right Hand, 7" Reel Std.
L: Left Hand, 7" Reel N/A
P: Right, 13" Reel C-7280
N: Left Hand, 13" Reel N/A
See Note 3

Special ESR Number for PS/L & PS/G

Capacitance Tolerance
M = ± 20%
K = ± 10%

Capacitance Code
pF Code
See Note 1

Rated Voltage

OE = 2.5V	1C = 16V
OG = 4V	1D = 20V
OJ = 6.3V	1E = 25V
1A = 10V	1V = 35V

* Refer to F3110 for complete polymer cross reference information

NEMCO

Nemco Part No.	Kemet Equivalent
PCT1.5/10AM	T491A155M010AS

PCT 1.5 10 A M

Series
PCT = T491
LSR = Low ESR = T494, T495, T510

Capacitance Code
Expressed in µF Code, R may be used to designate decimal point

Rated Voltage
as shown 10 = 10V

Case Code

Capacitance Tolerance
M = ± 20%
K = ± 10%

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A	3.2	1.6	1.6	A/3216
B	3.5	2.8	1.9	B/3528
C	6.0	3.2	2.5	C/6032
D	7.3	4.3	2.8	D/7343
Z	7.3	6.1	3.45	N/A
H	7.3	4.3	4.1	X/7343H
P	4.7	2.6	2.1	N/A
AL	3.2	1.6	1.2	S/3216L
BL	3.5	2.8	1.2	T/3528L
CL	6.0	3.2	1.5	U/6032L
DL	7.3	4.3	2.0	V/7343L
XL	2.0	1.2	1.2	R/2012L

NIC

NIC Part No.	Kemet Equivalent
NTC - T335M16TRB	T491B335M016AS

NTC-T 335 M 16 TR B ** F

Series
NTC-T = Molded Tantalum Chip = T491
NTC-P = Low Profile = T491
NTC-L = Low ESR = T494 or T495
*NTP = Polymer = T520
*NTP (ER) = T525

Capacitance Code
Expressed in pF Code
See Note 1

Capacitance Tolerance
K = ± 10%
M = ± 20%

Rated Voltage
As Shown

Packaging
TR = Tape and Reel

Case Code

ESR Code (optional)

Pb Free

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
J	1.6	0.8	0.8	N/A
P	2.0	1.2	1.2	R/2012L
A	3.2	1.6	1.6	A/3216
A2	3.2	1.6	1.2	S/3216L
B	3.5	2.8	1.9	B/3528
B2	3.5	2.8	1.2	T/3528L
C	6.0	3.2	2.5	C/6032
D	7.3	4.3	2.8	D/7343
E	7.3	4.3	4.1	X/7343H

See note 2.

* Refer to F3110 for complete polymer cross reference information

NICHICON

NICHICON Part No.	Kemet Equivalent
F931V105MBA	T491B105M035AS

F93 1V 105 M B A

Series
F91 = T494/T495
F93 = T491
F92 = Low Profile = T491
F94 = Fused = T496
F97 = HiRel = T491
F98 = T491
F72 & F75 = Facedown = N/A

Voltage Code

e = 2.5V	1C = 16V
OG = 4V	1D = 20V
OJ = 6.3V	1E = 25V
1A = 10V	1V = 35V

Capacitance Code
Expressed in pF Code,
See Note 1

Capacitance Tolerance
J = ±5%
K = ±10%
M = ±20%

Packaging

	T491
A = 7”, 8mm	Std
C = 7”, 12mm	Std
E = 13”, 8mm	7280
G = 13”, 12mm	7280

Case Code

Mfr’s Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
(F93)A	3.2	1.6	1.6	A/3216
(F93)B	3.4	2.6	1.9	*B/3528L
C	5.8	3.2	2.3	*C/6032
D	5.8	4.5	3.1	N/A
N	7.3	4.3	2.8	D/7343
P	2.0	1.2	1.2	R/2012
(F92)A	3.2	1.6	1.2	S/3216L
(F92)B	3.5	2.8	1.2	T/3528L
J	1.6	0.8	0.8	N/A
M	1.6	0.85	0.8	N/A

See Note 2

Other Nichicon Tantalum Chip Series that have no T491/EIA-535-BAAC equivalent: F75 & F95: Conformal coated chip

NIPPON/UNITED CHEMI-CON

Nippon Chemi-Con Part No.	Kemet Equivalent
SMCE4ROR106MB19A00	T491B106M004AS

S MCE 4R0 R 106 M B19 A00

Series
MCE = T491
MCF = T496
PT = T520
*PTB = T520

Voltage

2R5 = 2.5V	160 = 16V
4RO = 4V	200 = 20V
6R3 = 6.3V	250 = 25V
100 = 10V	350 = 35V

Polarity

Capacitance Code
Expressed in pF Code
See Note 1

Packaging

Case Size
J08 = J = N/A
P12 = P = R CASE
A12 = A2 = S CASE
A16 = A = A CASE
B12 = B3 = T CASE
B19 = B2 = B CASE
C25 = C = C CASE
G32 = D2 = N/A
D28 = D = D CASE

Capacitance Tolerance
M = ± 20%
K = ± 10%

* Refer to F3110 for complete polymer cross reference information

PACCOM

Pacco Part No.	Kemet Equivalent
TC3.3M20CT	T491C335M020AS

TC 3.3 M 20 C T

Series
TC = T491
TS = T495

Capacitance Code
Expressed in µF Code as shown

Capacitance Tolerance
M = ± 20%
K = ± 10%

Rated Voltage
as shown
6R3 = 6V

Options
T = Tape and Reel

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A	3.2	1.6	1.5	A/3216
B	3.5	2.8	1.9	B/3528
C	6.0	3.2	2.5	C/6032
D	7.3	4.3	2.8	D/7343

See note 2.

PANASONIC/MATSUSHITA

Panasonic/Matsushita Part No.	Kemet Equivalent
ECST1AY155KR	T491A155K010AS

ECS T 1A Y 155 K R

Type
ECS = T491

Style
T = 491
TE = Std
TES = Low Profile
TEH = Automotive = T491...AUTO

Voltage Code
OG = 4V
OJ = 6.3V
1A = 10V
1C = 16V
1D = 20V
1E = 25V
1V = 35V
1H = 50V

Packaging **T491**
R = Right Hand Std
L = Left Hand N/A

Capacitance Tolerance
K = ± 10%
M = ± 20%

Capacitance Code
Expressed in pF Code
See Note 1

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
Y	3.2	1.6	1.6	A/3216
A	3.8	1.9	1.6	N/A
X	3.5	2.8	1.9	B/3528
B	4.7	2.6	2.1	N/A
C	6.0	3.2	2.5	C/6032
D	7.3	4.3	2.8	D/7343
P	3.2	1.6	1.2	S/3216L
Z	2.0	1.2	1.2	R/2012
V	5.8	4.6	3.2	N/A

See note 2.

ROHM

ROHM Part No.	Kemet Equivalent
TCTPOJ336M8R	T491R336M006AS

TCT P OJ 336 M 8R

Series
TC = T491
TCT = N/A (Face Down)
*TCO = T520
TCFG = T496

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
M	1.6	0.8	0.8	N/A
P	2.0	1.2	1.2	R/2012
A	3.2	1.6	1.6	A/3216
B	3.5	2.8	1.9	B/3528
C	6.0	3.2	2.5	C/6032
D	7.3	4.3	2.8	D/7343

Voltage Code

OG = 4V
OJ = 6.3V
1A = 10V
1C = 16V
1D = 20V

Capacitance Code
Expressed in pF Code,
See Note 1

Capacitance Tolerance
K = ±10%
M = ±20%

Packaging
8 = Tape Width
R = Positive electrode on the side oppisite to sprocket hole

* Refer to F3110 for complete polymer cross reference information

SAMSUNG

Samsung Part No.	Kemet Equivalent
TCSCN1D225MBAR	T491B225M020AS

TC SCN 1D 225 M B A R

Type
TC = Tantalum Capacitor

Series
SCN = Standard = T491
SCS = Miniature = T491
SCM = Ultra Miniature = N/A
SCE = T495
SV_ = N/A

Voltage Code

OF = 3V
OG = 4V
OJ = 6.3V
1A = 10V
1C = 16V
1D = 20V
1E = 25V
1V = 35V
1H = 50V

Capacitance Code
Expressed in pF Code,
See Note 1

Capacitance Tolerance
M = ± 20%
K = ± 10%

Packaging **T491 Polarity**
R = Reel, Right hand — Std.
L = Reel, Left hand — N/A
B = Bulk — N/A
See note 3.

Packing
A = 7" Reel C = 13" Reel

Case Code

Mfr's Case Code	T491/EIA Equivalent
A	A/3216
B	B/3528
C	C/6032
D	D/7343
J	N/A/1608
P	R/2012
E	X/7343H

See note 2.

SANYO

Sanyo Part No.	Kemet Equivalent
4TPB100MA	T520B107M004AS

4 TPB 100 M A

Voltage Code

2R5 = 2.5V	12 = 12.5V
4 = 4.0V	16 = 16V
6 = 6.3V	20 = 20V
8 = 8.0V	25 = 25V
10 = 10V	*Embossed taping type only*

Series

TPU = Facedown = N/A
TPL = Facedown = N/A
TPB = Standard = T520B,D,Y
TPE = Lower ESR = T520B,D,Y,V
TPC = Low Profile = T520T,V
TPD = High Cap = T530Y
TQC = High Voltage = T520B,V,D (16-25V)
TH_ = 125° = T525V,D,Y

Case Codes

Sanyo	KEMET	Sanyo	KEMET
M	N/A	C	C/6032
S	R/2012	D2T	N/A
B1	T/3528L	D2E	V/7343L
B2	B/3528	D2	V/7343/L
C1	U/6032	D3L	D/7343
C3	N/A	D4	Y

Special Code

Code	Supplement	Code	Supplement
C	TPB Series C Size	PC	C3 Size ESR 25MΩ max
L	D3L size	IC	ESR 18MΩ max
5	ESR 5MΩ max	ZB	B2 Size ESR 35MΩ max
6	ESR 6MΩ max	AZB	85 CESR 35MΩ max
8	ESR 8MΩ max	A	TPB Series B2 Size 85°C
9	ESR 9MΩ max	V	TQC Series D2 Size ESR 45MΩ max
C	TPE Series ESR 12MΩ max		
F	ESR 15MΩ max		
I	ESR 18MΩ max		

Capacitance Tolerance

M = ±20%

Capacitance Code

5.6 = 5R6	22 = 22	82 = 82	470 = 470
6.8 = 6R8	33 = 33	100 = 100	680 = 680
8.2 = 8R2	47 = 47	150 = 150	1000 = 1000
10 = 10	56 = 56	220 = 220	
15 = 15	68 = 68	330 = 330	

TECATE

Tecate Part No.	Kemet Equivalent
522016101MTRD0125	T491D107M016AS

522 016 101 M TR D 0125

Series

522 = T491
522Z = T494

Voltage Code

as shown

Capacitance Code

First 2 digits reference significant figures third digit is multiplier
(101 = 100µF) (100 = 10µF)

Capacitance Tolerance

M = ± 20%

Max. ESR

0125 = 125 mΩ

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A	3.2	1.6	1.6	A/3216
B	3.5	2.8	1.9	*B/3528
C	6.0	3.2	1.9	*C/6032
D	7.3	4.3	2.9	D/7343
E	7.3	4.3	4.1	X/7343L

See note 2.

Packaging

TR = Tape and Reel

VENKEL

Venkel Part No.	Kemet Equivalent
TA035TCM225MB1R	T491B225M035AS

TA 035 TCM 225 M B1 R

Type
TA = Tantalum, EC = Electrolytic
Cap = Polymer

Rated Voltage
as shown, 035 = 35V

Series
TCM = Molded tantalum chip= T491
TNC = T496, TCR = T495
FPS = T520, FPU = T520

Capacitance Code
Expressed in pF Code
See note 1.

Capacitance Tolerance
M = ± 20%
K = ± 10%

Packaging **T491**
R = Right Hand Std.
N = Bulk" N/A
See note 3.

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A	3.2	1.6	1.7	A/3216
B	3.5	2.8	1.9	B/3528
B1	3.4	2.8	1.9	*B/3528
C	6.0	3.2	2.5	C/6032
C1	5.8	3.2	2.5	*C/6032
D	7.3	4.3	2.8	D/7343
D1	5.8	4.6	3.2	N/A
D2	7.3	5.8	1.2	N/A
D0	7.3	5.8	1.2	N/A
E	7.3	4.3	4.1	X/7343H
R	2.0	1.3	1.2	R/2012

See note 2.

Other Venkel Tantalum Chip Series that have no T491/EIA 535-BAAC equivalents: TCMF, CNC

VISHAY

Vishay Part No.	Kemet Equivalent
293D105X0035B2T	T491B105M035AS

293D 105 X0 035 B 2 T 040

Series
293D = T491
593D = Low ESR = T495
893D = Fused = T496
*255D = T520

Capacitance Code
Expressed in pF Code,
See Note 1

Capacitance Tolerance
X0 = ±20%
X9 = ±10%
X5 = ±5% (special order)

Rated Voltage
As shown Example:
035 = 35V
025 = 25V
GR3 = 6.3V

ESR Value in mΩ
(for 255D only)

Packaging **T491**
T = Right, 7" Reel Std
V = Left, 7" Reel N/A
W = Right, 13" Reel C7280
X= Left, 13" Reel N/A
See Note 3

Termination
2 = Standard

Case Code

Mfr's Case Code	Nominal Outline L	W	H	T491/EIA Equivalent
A	3.2	1.6	1.6	A/3216
B	3.5	3.5	1.9	B/3528
C	6.0	3.2	2.5	C/6032
D	7.3	4.3	2.8	D/7343
E	7.3	4.3	4.0	X/7343H
P	2.0	1.2	1.2	R/2012
V	7.3	4.3	1.9	V/7343L

Other Sprague Tantalum Chip Series that have no T491/EIA 535-BAAC equivalents: 296D: Molded, non-EIA case sizes 194D, 195D, 292D, 591D, 592D, 594D, 595D, 695D, 49BC, 49EC: conformal coated

* Refer to F3110 for complete polymer cross reference information

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