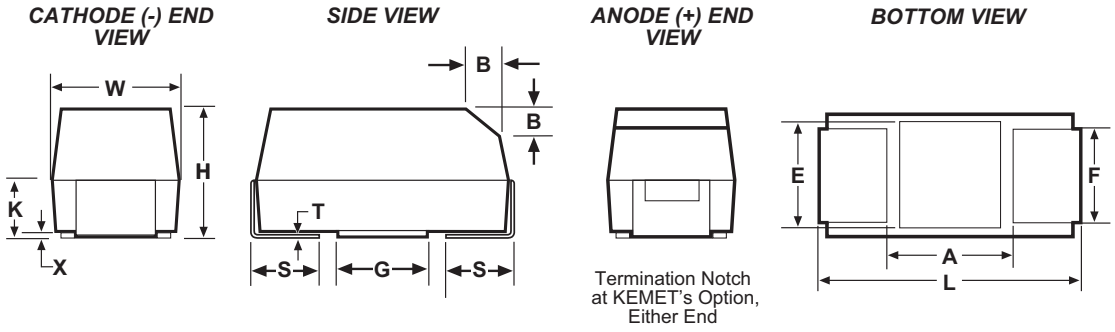
FEATURES

- Standard Cases Sizes A - X per EIA535BAAC
- Termination Finishes offered per MIL-PRF-55365: Gold Plated, Hot Solder Dipped, Solder Plated, Solder Fused, 100% Tin
- Weibull Grading Available: B (0.1%/1000hrs) and C (0.01%/1000hrs)
- Surge Current Testing Available per MIL-PRF-55365: 10 cycles @ +25°C; 10 cycles @ -55°C and +85°C
- Standard and Low ESR Options
- Operating Temperature Range: -55°C to +125°C
- Capacitance: 0.1 to 330µF
- Voltage: 4 to 50 Volts

OUTLINE DRAWING

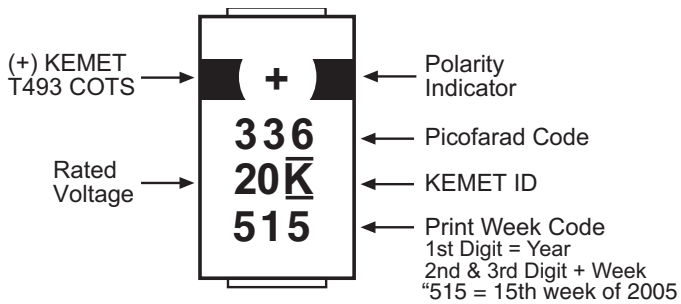


DIMENSIONS- MILLIMETERS (INCHES)

Case Size		L	W	H	K ±0.20	F ±0.1	S ±0.3	B ±0.15 (Ref) ±(.006)	X (Ref)	P (Ref)	R (Ref)	A (Min)	G (Ref)	E (Ref)
KEMET	EIA													
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)	1.4 (.055)	1.1 (.043)	1.3 (.051)
B	3528-21	3.5 ± 0.2 (.138 ± .008)	2.8 ± 0.2 (.110 ± .008)	1.9 ± 0.1 (.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)	2.1 (.083)	1.8 (.071)	2.2 (.087)
C	6032-28	6.0 ± 0.3 (.236 ± .012)	3.2 ± 0.3 (.126 ± .12)	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 (.0235)	1.0 (.039)	3.1 (.122)	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 (.0235)	1.0 (.039)	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)	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)	3.8 (.150)	3.5 (.138)	3.5 (.138)

Notes: 1. Metric dimensions govern.
2. (ref) - Dimensions provided for reference only.

COMPONENT MARKING



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ORDERING INFORMATION

T 493 D 227 K 006 C H 6120

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
First 2 Numbers
61 = Surge - None
62 = Surge - 10 Cycles, +25°C
64 = Surge - 10 cycles, -55°C and +85°C

Second 2 Numbers
10 = ESR - Standard
20 = ESR - Low
30 = ESR - Ultra-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
T - 100% Tin

T493 RATINGS AND PART NUMBER REFERENCE

Capacitance µF	Case Size	KEMET Part Number	DCL µA @ 25ºC Max	DF % @ +25ºC 120 Hz Max	Std. ESR Ohms @+25°C 100 kHz Max	Low ESR Ohms @+25°C 100 kHz Max	Ultra-Low ESR, Ohms @+25°C 100 kHz Max
4 Volt Rating at +85ºC (2.7 Volt Rating at +125ºC)							
2.2	A	T493A225(1)004(2)(3)(4)(5)	0.5	6.0	8.0	6.0	N/A
3.3	A	T493A335(1)004(2)(3)(4)(5)	0.5	6.0	8.0	4.0	N/A
4.7	A	T493A475(1)004(2)(3)(4)(5)	0.5	6.0	8.0	3.5	N/A
6.8	A	T493A685(1)004(2)(3)(4)(5)	0.5	6.0	6.0	3.0	N/A
6.8	B	T493B685(1)004(2)(3)(4)(5)	0.5	6.0	5.5	2.0	N/A
10.0	A	T493A106(1)004(2)(3)(4)(5)	0.5	6.0	6.0	2.0	N/A
10.0	B	T493B106(1)004(2)(3)(4)(5)	0.5	6.0	3.5	1.2	N/A
15.0	A	T493A156(1)004(2)(3)(4)(5)	0.6	6.0	4.0	1.5	N/A
15.0	B	T493B156(1)004(2)(3)(4)(5)	0.6	6.0	3.5	1.2	N/A
22.0	A	T493A226(1)004(2)(3)(4)(5)	0.9	6.0	4.0	1.5	N/A
22.0	B	T493B226(1)004(2)(3)(4)(5)	0.9	6.0	3.5	0.6	N/A
22.0	C	T493C226(1)004(2)(3)(4)(5)	0.9	6.0	1.8	0.5	N/A
33.0	A	T493A336(1)004(2)(3)(4)(5)	1.3	6.0	4.0	3.0	N/A
33.0	B	T493B336(1)004(2)(3)(4)(5)	1.3	6.0	3.5	0.5	N/A
33.0	C	T493C336(1)004(2)(3)(4)(5)	1.3	6.0	1.8	0.5	N/A
47.0	B	T493B476(1)004(2)(3)(4)(5)	1.9	6.0	3.0	0.5	N/A
47.0	C	T493C476(1)004(2)(3)(4)(5)	1.9	6.0	1.8	0.5	N/A
68.0	B	T493B686(1)004(2)(3)(4)(5)	2.7	6.0	3.5	2.0	N/A
68.0	C	T493C686(1)004(2)(3)(4)(5)	2.7	6.0	1.6	0.25	N/A
68.0	D	T493D686(1)004(2)(3)(4)(5)	2.7	6.0	0.8	0.2	N/A
#100.0	B	T493B107(1)004(2)(3)(4)(5)	4.0	8.0	1.0	0.7	0.50
100.0	C	T493C107(1)004(2)(3)(4)(5)	4.0	8.0	1.2	0.2	N/A
100.0	D	T493D107(1)004(2)(3)(4)(5)	4.0	8.0	0.8	0.2	N/A
#150.0	C	T493C157(1)004(2)(3)(4)(5)	6.0	8.0	1.2	0.3	0.25
150.0	D	T493D157(1)004(2)(3)(4)(5)	6.0	8.0	0.8	0.15	N/A
220.0	D	T493D227(1)004(2)(3)(4)(5)	8.8	8.0	0.9	0.7	N/A
330.0	D	T493D337(1)004(2)(3)(4)(5)	13.2	8.0	0.7	0.15	N/A
330.0	X	T493X337(1)004(2)(3)(4)(5)	13.2	8.0	0.5	0.2	N/A
6 Volt Rating at +85ºC (4 Volt Rating at +125ºC)							
1.5	A	T493A155(1)006(2)(3)(4(5)	0.5	6.0	8.0	6.0	N/A
2.2	A	T493A225(1)006(2)(3)(4)(5)	0.5	6.0	8.0	6.0	N/A
3.3	A	T493A335(1)006(2)(3)(4)(5)	0.5	6.0	8.0	6.0	N/A
4.7	A	T493A475(1)006(2)(3)(4)(5)	0.5	6.0	6.0	3.5	N/A
4.7	B	T493B475(1)006(2)(3)(4)(5)	0.5	6.0	5.5	3.5	N/A
6.8	A	T493A685(1)006(2)(3)(4)(5)	0.5	6.0	6.0	2.0	N/A
6.8	B	T493B685(1)006(2)(3)(4)(5)	0.5	6.0	3.5	1.2	N/A
10.0	A	T493A106(1)006(2)(3)(4)(5)	0.6	6.0	4.0	2.0	N/A
10.0	B	T493B106(1)006(2)(3)(4)(5)	0.6	6.0	3.5	1.0	N/A
15.0	A	T493A156(1)006(2)(3)(4)(5)	0.9	6.0	4.0	1.5	N/A
15.0	B	T493B156(1)006(2)(3)(4)(5)	0.9	6.0	3.5	0.7	N/A
15.0	C	T493C156(1)006(2)(3)(4)(5)	0.9	6.0	1.8	0.6	N/A
22.0	A	T493A226(1)006(2)(3)(4)(5)	1.4	6.0	4.0	3.0	N/A
22.0	B	T493B226(1)006(2)(3)(4)(5)	1.4	6.0	3.5	0.6	N/A
22.0	C	T493C226(1)006(2)(3)(4)(5)	1.4	6.0	1.8	0.5	N/A

(1) To complete KEMET part number, insert M for ±20% or K for ±10% capacitance tolerance. To request ±5% tolerance,contact KEMET sales representative.
(2) To complete KEMET part number, insert A for Non-ER; B for 0.1%/1000 Hrs.; or C for 0.01%/1000 Hrs. Reliability Level.
(3) To complete KEMET part number, insert B for Gold Plated (50 µ inch minimum); C for Hot Solder Dipped (60 µ inch minimum); H for Solder Plated (100 µ inch minimum); K for Solder Fused (60 µ inch minimum Termination Finish or T for 100% Tin.
(4) To complete KEMET part number for Surge Current testing, insert 61 for none; 62 for 10 cycles +25°C; or 64 for 10 cycles, -55°C & +85°C.
(5) To complete KEMET part number, insert 10 for Standard ESR; 20 for Low ESR or 30 for Ultra-low ESR Option.

* Extended Values #Maximum Capacitance Change @ 125°C = +15%

T493 RATINGS AND PART NUMBER REFERENCE

Capacitance µF	Case Size	KEMET Part Number	DCL µA @ 25ºC Max	DF % @ +25ºC 120 Hz Max	Std. ESR Ohms @+25°C 100 kHz Max	Low ESR Ohms @+25°C 100 kHz Max	Ultra-Low ESR, Ohms @+25°C 100 kHz Max
6 Volt Rating at +85ºC (4 Volt Rating at +125ºC) cont.							
33.0	B	T493B336(1)006(2)(3)(4)(5)	2.0	6.0	3.0	0.6	N/A
33.0	C	T493C336(1)006(2)(3)(4)(5)	2.0	6.0	1.8	0.3	N/A
47.0	B	T493B476(1)006(2)(3)(4)(5)	2.9	6.0	3.5	2.0	N/A
47.0	C	T493C476(1)006(2)(3)(4)(5)	2.9	6.0	1.6	0.25	0.25
47.0	D	T493D476(1)006(2)(3)(4)(5)	2.9	6.0	0.8	0.22	N/A
68.0	B	T493B686(1)006(2)(3)(4)(5)	4.1	8.0	1.0	0.65	N/A
68.0	C	T493C686(1)006(2)(3)(4)(5)	4.1	6.0	1.2	0.2	N/A
68.0	D	T493D686(1)006(2)(3)(4)(5)	4.1	6.0	0.8	0.2	0.18
#100.0	B	T493B107(1)006(2)(3)(4)(5)	6.3	15.0	10.0	8.0	0.70
100.0	C	T493C107(1)006(2)(3)(4)(5)	6.0	8.0	1.2	0.3	0.15
100.0	D	T493D107(1)006(2)(3)(4)(5)	6.0	8.0	0.8	0.15	N/A
#150.0	C	T493C157(1)006(2)(3)(4)(5)	9.0	8.0	1.2	0.3	0.20
150.0	D	T493D157(1)006(2)(3)(4)(5)	9.0	8.0	0.7	0.15	N/A
#220.0	C	T493C227(1)006(2)(3)(4)(5)	13.2	10.0	1.2	0.3	0.23
220.0	D	T493D227(1)006(2)(3)(4)(5)	13.2	8.0	0.7	0.1	0.10
220.0	X	T493X227(1)006(2)(3)(4)(5)	13.2	8.0	0.7	0.15	0.07
330.0	D	T493D337(1)006(2)(3)(4)(5)	19.8	8.0	0.5	0.15	0.10
330.0	X	T493X337(1)006(2)(3)(4)(5)	19.8	8.0	0.5	0.1	0.07
1.0	A	T493A105(1)010(2)(3)(4)(5)	0.5	4.0	10.0	6.0	N/A
1.5	A	T493A155(1)010(2)(3)(4)(5)	0.5	6.0	8.0	6.0	N/A
2.2	A	T493A225(1)010(2)(3)(4)(5)	0.5	6.0	8.0	6.0	N/A
3.3	A	T493A335(1)010(2)(3)(4)(5)	0.5	6.0	6.0	4.0	N/A
3.3	B	T493B335(1)010(2)(3)(4)(5)	0.5	6.0	5.5	3.5	N/A
4.7	A	T493A475(1)010(2)(3)(4)(5)	0.5	6.0	6.0	3.0	N/A
4.7	B	T493B475(1)010(2)(3)(4)(5)	0.5	6.0	3.5	1.5	1.3
6.8	A	T493A685(1)010(2)(3)(4)(5)	0.7	6.0	6.0	3.0	N/A
6.8	B	T493B685(1)010(2)(3)(4)(5)	0.7	6.0	3.5	1.2	0.90
10.0	A	T493A106(1)010(2)(3)(4)(5)	1.0	6.0	4.0	1.8	N/A
10.0	B	T493B106(1)010(2)(3)(4)(5)	1.0	6.0	3.5	0.8	0.75
10.0	C	T493C106(1)010(2)(3)(4)(5)	1.0	6.0	1.8	0.6	N/A
#15.0	A	T493A156(1)010(2)(3)(4)(5)	1.5	8.0	6.0	4.0	3.2
15.0	B	T493B156(1)010(2)(3)(4)(5)	1.5	6.0	3.5	0.7	N/A
15.0	C	T493C156(1)010(2)(3)(4)(5)	1.5	6.0	1.8	0.5	0.48
22.0	B	T493B226(1)010(2)(3)(4)(5)	2.2	6.0	3.0	0.7	N/A
22.0	C	T493C226(1)010(2)(3)(4)(5)	2.2	6.0	1.8	0.4	0.29
33.0	B	T493B336(1)010(2)(3)(4)(5)	3.3	6.0	3.5	2.0	N/A
33.0	C	T493C336(1)010(2)(3)(4)(5)	3.3	6.0	1.6	0.3	N/A
33.0	D	T493D336(1)010(2)(3)(4)(5)	3.3	6.0	0.8	0.3	N/A
47.0	C	T493C476(1)010(2)(3)(4)(5)	4.7	6.0	1.2	0.3	N/A
47.0	D	T493D476(1)010(2)(3)(4)(5)	4.7	6.0	0.8	0.2	0.08
68.0	C	T493C686(1)010(2)(3)(4)(5)	6.8	6.0	1.2	0.3	0.23
68.0	D	T493D686(1)010(2)(3)(4)(5)	6.8	6.0	0.8	0.2	0.09
68.0	X	T493X686(1)010(2)(3)(4)(5)	5.4	4.0	0.5	0.15	0.15
#100.0	C	T493C107(1)010(2)(3)(4)(5)	10.0	8.0	1.2	0.3	N/A
100.0	D	T493D107(1)010(2)(3)(4)(5)	10.0	8.0	0.7	0.1	0.08
150.0	D	T493D157(1)010(2)(3)(4)(5)	15.0	8.0	0.7	0.1	0.08
150.0	X	T493X157(1)010(2)(3)(4)(5)	15.0	8.0	0.7	0.2	0.09
#220.0	D	T493D227(1)010(2)(3)(4)(5)	22.0	8.0	0.5	0.2	0.08
220.0	X	T493X227(1)010(2)(3)(4)(5)	22.0	8.0	0.5	0.1	0.05
330.0	X	T493X337(1)010(2)(3)(4)(5)	33.0	10.0	0.5	0.1	0.05
16 Volt Rating at +85ºC (10 Volt Rating at +125ºC)							
0.68	A	T493A684(1)016(2)(3)(4)(5)	1.1	6.0	12.0	8.0	N/A
1.0	A	T493A105(1)016(2)(3)(4)(5)	0.5	4.0	10.0	6.0	N/A
1.5	A	T493A155(1)016(2)(3)(4)(5)	0.5	6.0	8.0	6.0	N/A
2.2	A	T493A225(1)016(2)(3)(4)(5)	0.5	6.0	6.0	4.0	N/A
3.3	A	T493A335(1)016(2)(3)(4)(5)	0.5	6.0	6.0	3.5	N/A
3.3	B	T493B335(1)016(2)(3)(4)(5)	0.5	6.0	3.5	2.0	N/A
4.7	A	T493A475(1)016(2)(3)(4)(5)	0.8	6.0	6.0	3.0	N/A
4.7	B	T493B475(1)016(2)(3)(4)(5)	0.8	6.0	3.5	1.5	N/A
#6.8	A	T493A685(1)016(2)(3)(4)(5)	1.1	6.0	7.0	3.0	N/A
6.8	B	T493B685(1)016(2)(3)(4)(5)	1.1	6.0	3.5	1.2	N/A
6.8	C	T493C685(1)016(2)(3)(4)(5)	1.1	6.0	1.9	0.8	0.75
10.0	B	T493B106(1)016(2)(3)(4)(5)	1.6	6.0	3.5	0.8	N/A
10.0	C	T493C106(1)016(2)(3)(4)(5)	1.6	6.0	1.8	0.6	N/A
#15.0	B	T493B156(1)016(2)(3)(4)(5)	2.4	6.0	3.0	0.8	0.80
15.0	C	T493C156(1)016(2)(3)(4)(5)	2.4	6.0	1.8	0.4	N/A
#22.0	B	T493B226(1)016(2)(3)(4)(5)	3.5	6.0	2.2	0.8	N/A
22.0	C	T493C226(1)016(2)(3)(4)(5)	3.6	6.0	1.6	0.4	N/A
22.0	D	T493D226(1)016(2)(3)(4)(5)	3.6	6.0	0.8	0.3	N/A

(1) To complete KEMET part number, insert M for ±20% or K for ±10% capacitance tolerance. To request ±5% tolerance,contact KEMET sales representative.
(2) To complete KEMET part number, insert A for Non-ER; B for 0.1%/1000 Hrs.; or C for 0.01%/1000 Hrs. Reliability Level.
(3) To complete KEMET part number, insert B for Gold Plated (50 µ inch minimum); C for Hot Solder Dipped (60 µ inch minimum); H for Solder Plated (100 µ inch minimum); K for Solder Fused (60 µ inch minimum Termination Finish or T for 100% Tin.
(4) To complete KEMET part number for Surge Current testing, insert 61 for none; 62 for 10 cycles +25°C; or 64 for 10 cycles, -55°C & +85°C.
(5) To complete KEMET part number, insert 10 for Standard ESR; 20 for Low ESR or 30 for Ultra-low ESR Option.
* Extended Values #Maximum Capacitance Change @ 125°C = +15%

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T493 RATINGS AND PART NUMBER REFERENCE

Capacitance µF	Case Size	KEMET Part Number	DCL µA @ 25°C Max	DF % @ +25°C 120 Hz Max	Std. ESR Ohms @+25°C 100 kHz Max	Low ESR Ohms @+25°C 100 kHz Max	Ultra-Low ESR, Ohms @+25°C 100 kHz Max
16 Volt Rating at +85°C (10 Volt Rating at +125°C) cont.							
33.0	C	T493C336(1)016(2)(3)(4)(5)	5.3	6.0	1.2	0.3	0.23
33.0	D	T493D336(1)016(2)(3)(4)(5)	5.3	6.0	0.8	0.25	0.15
#47.0	C	T493C476(1)016(2)(3)(4)(5)	7.5	6.0	1.2	0.5	0.35
47.0	D	T493D476(1)016(2)(3)(4)(5)	7.5	6.0	0.8	0.2	0.10
68.0	D	T493D686(1)016(2)(3)(4)(5)	10.9	6.0	0.7	0.2	0.15
#100.0	D	T493D107(1)016(2)(3)(4)(5)	16.0	8.0	0.7	0.125	0.10
100.0	X	T493X107(1)016(2)(3)(4)(5)	16.0	8.0	0.7	0.1	0.08
#150.0	X	T493X157(1)016(2)(3)(4)(5)	24.0	8.0	0.5	0.2	0.10
20 Volt Rating at +85°C (13 Volt Rating at +125°C)							
0.47	A	T493A474(1)020(2)(3)(4)(5)	0.5	4.0	14.0	9.0	N/A
0.68	A	T493A684(1)020(2)(3)(4)(5)	0.5	4.0	12.0	8.0	N/A
1.0	A	T493A105(1)020(2)(3)(4)(5)	0.5	4.0	10.0	5.5	N/A
1.5	A	T493A155(1)020(2)(3)(4)(5)	0.5	6.0	8.0	4.5	N/A
1.5	B	T493B155(1)020(2)(3)(4)(5)	0.5	6.0	6.0	4.0	N/A
2.2	A	T493A225(1)020(2)(3)(4)(5)	0.5	6.0	7.0	4.0	N/A
2.2	B	T493B225(1)020(2)(3)(4)(5)	0.5	6.0	3.5	1.5	N/A
#3.3	A	T493A335(1)020(2)(3)(4)(5)	0.7	6.0	7.0	4.0	N/A
3.3	B	T493B335(1)020(2)(3)(4)(5)	0.7	6.0	3.5	1.3	N/A
#4.7	A	T493A475(1)020(2)(3)(4)(5)	1.0	8.0	6.0	1.8	N/A
4.7	B	T493B475(1)020(2)(3)(4)(5)	1.0	6.0	3.5	1.0	N/A
4.7	C	T493C475(1)020(2)(3)(4)(5)	1.0	6.0	2.4	0.6	N/A
#6.8	B	T493B685(1)020(2)(3)(4)(5)	1.4	6.0	3.5	1.0	N/A
6.8	C	T493C685(1)020(2)(3)(4)(5)	1.4	6.0	1.9	0.6	N/A
#10.0	B	T493B106(1)020(2)(3)(4)(5)	2.0	6.0	3.0	1.0	1.0
10.0	C	T493C106(1)020(2)(3)(4)(5)	2.0	6.0	1.8	0.5	0.48
15.0	C	T493C156(1)020(2)(3)(4)(5)	3.0	6.0	1.7	0.4	0.38
15.0	D	T493D156(1)020(2)(3)(4)(5)	3.0	6.0	1.0	0.35	0.28
#22.0	C	T493C226(1)020(2)(3)(4)(5)	4.4	6.0	1.2	0.4	N/A
22.0	D	T493D226(1)020(2)(3)(4)(5)	4.4	6.0	0.8	0.3	0.18
33.0	D	T493D336(1)020(2)(3)(4)(5)	6.6	6.0	0.8	0.2	0.15
47.0	D	T493D476(1)020(2)(3)(4)(5)	9.4	6.0	0.7	0.2	0.10
47.0	X	T493X476(1)020(2)(3)(4)(5)	7.5	4.0	0.7	0.15	0.10
#68.0	D	T493D686(1)020(2)(3)(4)(5)	13.6	8.0	0.7	0.2	0.15
68.0	X	T493X686(1)020(2)(3)(4)(5)	13.6	6.0	0.7	0.15	0.12
25 Volt Rating at +85°C (17 Volt Rating at +125°C)							
0.33	A	T493A334(1)025(2)(3)(4)(5)	0.5	4.0	15.0	10.0	N/A
0.47	A	T493A474(1)025(2)(3)(4)(5)	0.5	4.0	14.0	9.0	N/A
0.68	A	T493A684(1)025(2)(3)(4)(5)	0.5	4.0	10.0	6.0	N/A
0.68	B	T493B684(1)025(2)(3)(4)(5)	0.5	4.0	7.5	5.5	N/A
1.0	A	T493A105(1)025(2)(3)(4)(5)	0.5	4.0	8.0	4.0	N/A
1.0	B	T493B105(1)025(2)(3)(4)(5)	0.5	4.0	5.0	2.0	N/A
1.5	A	T493A155(1)025(2)(3)(4)(5)	0.5	6.0	10.0	3.0	N/A
1.5	B	T493B155(1)025(2)(3)(4)(5)	0.5	6.0	5.0	1.5	N/A
2.2	B	T493B225(1)025(2)(3)(4)(5)	0.6	6.0	4.5	1.2	N/A
2.2	C	T493C225(1)025(2)(3)(4)(5)	0.6	6.0	3.5	2.2	1.30
3.3	B	T493B335(1)025(2)(3)(4)(5)	0.9	6.0	3.5	2.0	N/A
3.3	C	T493C335(1)025(2)(3)(4)(5)	0.9	6.0	2.5	1.2	0.75
#4.7	B	T493B475(1)025(2)(3)(4)(5)	1.2	6.0	1.5	1.0	N/A
4.7	C	T493C475(1)025(2)(3)(4)(5)	1.2	6.0	2.4	0.6	0.58
6.8	C	T493C685(1)025(2)(3)(4)(5)	1.7	6.0	1.9	0.6	0.49
6.8	D	T493D685(1)025(2)(3)(4)(5)	1.7	6.0	1.4	1.0	N/A
10.0	C	T493C106(1)025(2)(3)(4)(5)	2.5	6.0	1.5	0.5	0.45
10.0	D	T493D106(1)025(2)(3)(4)(5)	2.5	6.0	1.0	0.4	N/A
#15.0	C	T493C156(1)025(2)(3)(4)(5)	3.8	6.0	1.5	0.9	N/A
15.0	D	T493D156(1)025(2)(3)(4)(5)	3.8	6.0	1.0	0.35	0.28
15.0	X	T493X156(1)025(2)(3)(4)(5)	3.0	6.0	0.7	0.2	0.20
22.0	D	T493D226(1)025(2)(3)(4)(5)	5.5	6.0	0.8	0.2	0.20
22.0	X	T493X226(1)025(2)(3)(4)(5)	4.4	4.0	0.7	0.23	0.23
33.0	D	T493D336(1)025(2)(3)(4)(5)	8.3	6.0	0.7	0.4	0.09
33.0	X	T493X336(1)025(2)(3)(4)(5)	8.3	6.0	0.7	0.3	0.18
†47.0	D	T493D476(1)025(2)(3)(4)(5)	11.8	10.0	0.7	0.2	0.12
†47.0	X	T493X476(1)025(2)(3)(4)(5)	11.8	6.0	0.7	0.3	0.15

(1) To complete KEMET part number, insert M for ±20% or K for ±10% capacitance tolerance. To request ±5% tolerance,contact KEMET sales representative.
(2) To complete KEMET part number, insert A for Non-ER; B for 0.1%/1000 Hrs.; or C for 0.01%/1000 Hrs. Reliability Level.
(3) To complete KEMET part number, insert B for Gold Plated (50 µ inch minimum); C for Hot Solder Dipped (60 µ inch minimum); H for Solder Plated (100 µ inch minimum); K for Solder Fused (60 µ inch minimum Termination Finish or T for 100% Tin.
(4) To complete KEMET part number for Surge Current testing, insert 61 for none; 62 for 10 cycles +25°C; or 64 for 10 cycles, -55°C & +85°C.
(5) To complete KEMET part number, insert 10 for Standard ESR; 20 for Low ESR or 30 for Ultra-low ESR Option.

* Extended Values #Maximum Capacitance Change @ 125°C = +15% † Maximum Capacitance Change @ 125°C = +20%

T493 RATINGS AND PART NUMBER REFERENCE

Capacitance µF	Case Size	KEMET Part Number	DCL µA @ 25ºC Max	DF % @ +25ºC 120 Hz Max	Std. ESR Ohms @+25°C 100 kHz Max	Low ESR Ohms @+25°C 100 kHz Max	Ultra-Low ESR, Ohms @+25°C 100 kHz Max
35 Volt Rating at +85ºC (23 Volt Rating at +125ºC)							
0.10	A	T493A104(1)035(2)(3)(4)(5)	0.5	4.0	20.0	10.0	N/A
0.15	A	T493A154(1)035(2)(3)(4)(5)	0.5	4.0	19.0	6.0	N/A
0.22	A	T493A224(1)035(2)(3)(4)(5)	0.5	4.0	18.0	6.0	N/A
0.33	A	T493A334(1)035(2)(3)(4)(5)	0.5	4.0	15.0	6.0	N/A
0.47	A	T493A474(1)035(2)(3)(4)(5)	0.5	4.0	14.0	4.0	N/A
0.47	B	T493B474(1)035(2)(3)(4)(5)	0.5	4.0	8.0	2.5	1.5
0.68	A	T493A684(1)035(2)(3)(4)(5)	0.5	4.0	10.0	6.0	N/A
0.68	B	T493B684(1)035(2)(3)(4)(5)	0.5	4.0	6.5	2.5	N/A
1.0	A	T493A105(1)035(2)(3)(4)(5)	0.5	4.0	10.0	6.0	N/A
1.0	B	T493B105(1)035(2)(3)(4)(5)	0.5	4.0	5.0	2.0	1.5
1.5	B	T493B155(1)035(2)(3)(4)(5)	0.5	6.0	5.0	3.0	N/A
1.5	C	T493C155(1)035(2)(3)(4)(5)	0.5	6.0	4.5	2.5	N/A
2.2	B	T493B225(1)035(2)(3)(4)(5)	0.8	6.0	4.0	2.5	1.5
2.2	C	T493C225(1)035(2)(3)(4)(5)	0.8	6.0	3.5	1.5	0.75
#3.3	B	T493B335(1)035(2)(3)(4)(5)	1.2	6.0	3.5	1.3	N/A
3.3	C	T493C335(1)035(2)(3)(4)(5)	1.2	6.0	2.5	0.8	0.60
4.7	C	T493C475(1)035(2)(3)(4)(5)	1.7	6.0	2.5	0.6	0.45
4.7	D	T493D475(1)035(2)(3)(4)(5)	1.7	6.0	1.5	0.7	N/A
6.8	C	T493C685(1)035(2)(3)(4)(5)	2.4	6.0	2.0	0.9	N/A
6.8	D	T493D685(1)035(2)(3)(4)(5)	2.4	6.0	1.3	0.5	0.40
#10.0	C	T493C106(1)035(2)(3)(4)(5)	3.5	6.0	2.0	1.2	N/A
10.0	D	T493D106(1)035(2)(3)(4)(5)	3.5	6.0	1.0	0.3	0.25
10.0	X	T493X106(1)035(2)(3)(4)(5)	2.8	4.0	0.9	0.25	0.18
15.0	D	T493D156(1)035(2)(3)(4)(5)	5.3	6.0	0.8	0.3	0.23
15.0	X	T493X156(1)035(2)(3)(4)(5)	5.3	6.0	0.9	0.3	0.20
#22.0	D	T493D226(1)035(2)(3)(4)(5)	7.7	6.0	0.7	0.4	0.20
22.0	X	T493X226(1)035(2)(3)(4)(5)	7.7	6.0	0.7	0.3	0.20
#33.0	X	T493X336(1)035(2)(3)(4)(5)	11.6	6.0	0.6	0.3	0.18
#47.0	E	T493E476(1)035(2)(3)(4)(5)	16.5	10.0	0.5	0.3	N/A
50 Volt Rating at +85ºC (33 Volt Rating at +125ºC)							
0.10	A	T493A104(1)050(2)(3)(4)(5)	0.5	4.0	20.0	10.0	N/A
0.15	A	T493A154(1)050(2)(3)(4)(5)	0.5	4.0	19.0	10.0	N/A
0.15	B	T493B154(1)050(2)(3)(4)(5)	0.5	4.0	16.0	10.0	N/A
0.22	B	T493B224(1)050(2)(3)(4)(5)	0.5	4.0	14.0	10.0	N/A
0.33	B	T493B334(1)050(2)(3)(4)(5)	0.5	4.0	10.0	2.5	N/A
0.47	B	T493B474(1)050(2)(3)(4)(5)	0.5	4.0	9.0	2.0	N/A
0.47	C	T493C474(1)050(2)(3)(4)(5)	0.5	4.0	8.0	1.8	N/A
0.68	C	T493C684(1)050(2)(3)(4)(5)	0.5	4.0	7.0	1.6	N/A
1.0	C	T493C105(1)050(2)(3)(4)(5)	0.5	4.0	5.5	1.6	1.3
1.5	C	T493C155(1)050(2)(3)(4)(5)	0.8	6.0	4.5	1.5	N/A
1.5	D	T493D155(1)050(2)(3)(4)(5)	0.8	6.0	3.5	1.0	N/A
2.2	C	T493C225(1)050(2)(3)(4)(5)	1.1	6.0	3.5	1.5	N/A
2.2	D	T493D225(1)050(2)(3)(4)(5)	1.1	6.0	2.5	0.8	0.60
3.3	D	T493D335(1)050(2)(3)(4)(5)	1.7	6.0	2.0	0.8	0.70
4.7	D	T493D475(1)050(2)(3)(4)(5)	2.4	6.0	1.5	0.6	0.28
4.7	X	T493X475(1)050(2)(3)(4)(5)	1.9	4.0	0.9	0.3	0.30
6.8	X	T493X685(1)050(2)(3)(4)(5)	3.5	6.0	1.0	0.5	N/A

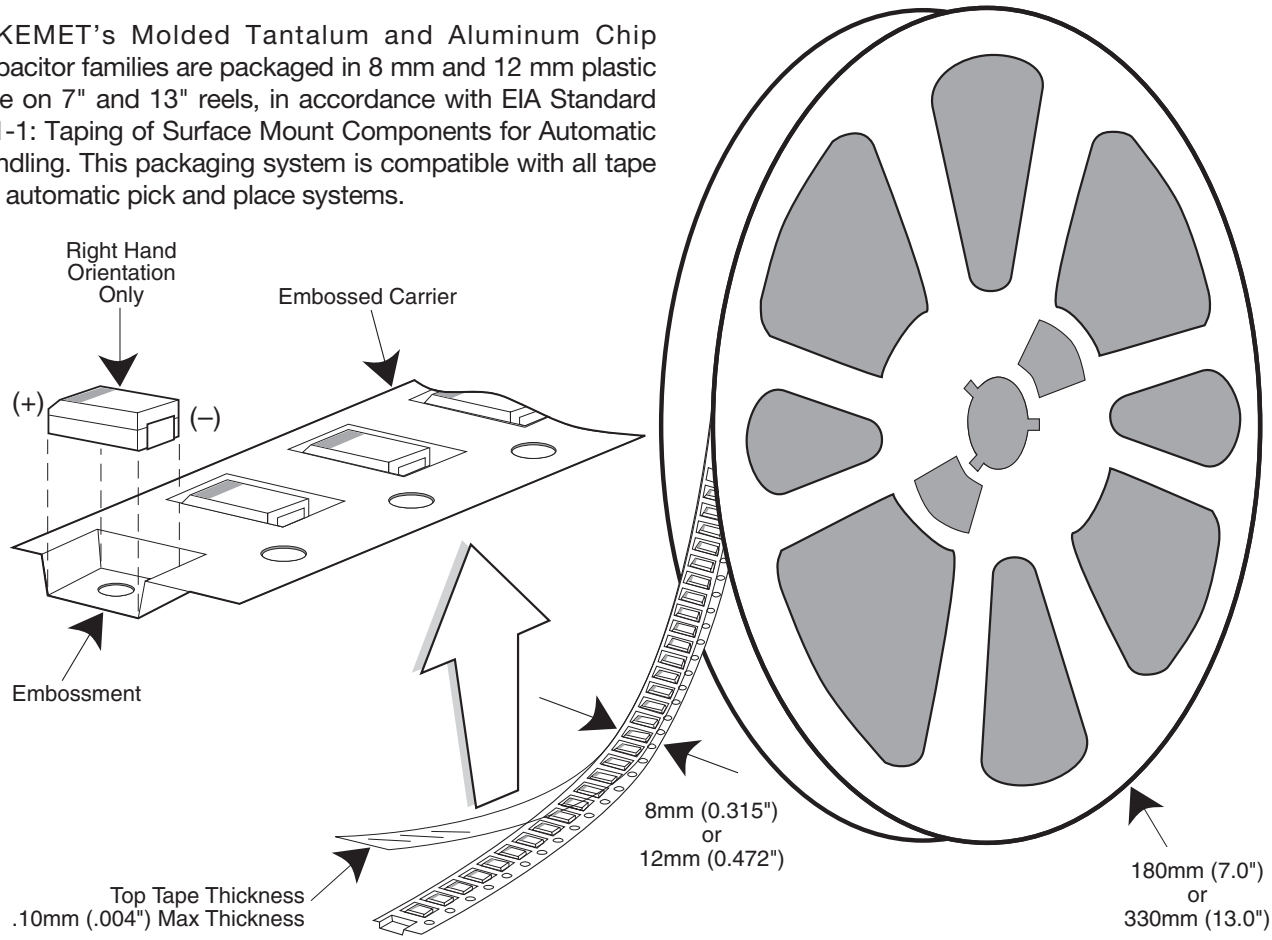
(1) To complete KEMET part number, insert M for ±20% or K for ±10% capacitance tolerance. To request ±5% tolerance,contact KEMET sales representative.
(2) To complete KEMET part number, insert A for Non-ER; B for 0.1%/1000 Hrs.; or C for 0.01%/1000 Hrs. Reliability Level.
(3) To complete KEMET part number, insert B for Gold Plated (50 µ inch minimum); C for Hot Solder Dipped (60 µ inch minimum); H for Solder Plated (100 µ inch minimum); K for Solder Fused (60 µ inch minimum Termination Finish or T for 100% Tin.
(4) To complete KEMET part number for Surge Current testing, insert 61 for none; 62 for 10 cycles +25°C; or 64 for 10 cycles, -55°C & +85°C.
(5) To complete KEMET part number, insert 10 for Standard ESR; 20 for Low ESR or 30 for Ultra-low ESR Option.

* Extended Values #Maximum Capacitance Change @ 125°C = +15%

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Tape & Reel Packaging

KEMET's Molded Tantalum and Aluminum Chip Capacitor families are packaged in 8 mm and 12 mm plastic tape on 7" and 13" reels, in accordance with EIA Standard 481-1: Taping of Surface Mount Components for Automatic Handling. This packaging system is compatible with all tape fed automatic pick and place systems.



Labeling: Bar code labeling (standard or custom) shall be on the side of the reel opposite the sprocket holes. Refer to EIA-556.

QUANTITIES PACKAGED PER REEL

Case Code		Tape Width-mm	7" Reel*	13" Reel*
KEMET	EIA			
R	2012-12	8	2,500	10,000
S	3216-12	8	2,500	10,000
T	3528-12	8	2,500	10,000
U	6032-15	12	1,000	5,000
W	7343-15	12	1,000	3,000
V	7343-20	12	1,000	3,000
A	3216-18	8	2,000	9,000
B	3528-21	8	2,000	8,000
C	6032-28	12	500	3,000
D	7343-31	12	500	2,500
Y	7343-40	12	500	2,000
X	7343-43	12	500	2,000
E	7260-38	12	500	2,000

* No c-spec required for 7" reel packaging. C-7280 required for 13" reel packaging.

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Performance Notes

1. **Cover Tape Break Force:** 1.0 Kg Minimum.
2. **Cover Tape Peel Strength:** The total peel strength of the cover tape from the carrier tape shall be:

Tape Width	Peel Strength
8 mm	0.1 Newton to 1.0 Newton (10g to 100g)
12 mm	0.1 Newton to 1.3 Newton (10g to 130g)

   The direction of the pull shall be opposite the direction of the carrier tape travel. The pull angle of the carrier tape shall be 165° to 180° from the plane of the carrier tape. During peeling, the carrier and/or cover tape shall be pulled at a velocity of 300 ±10 mm/minute.
3. **Reel Sizes:** Molded tantalum capacitors are available on either 180 mm (7") reels (standard) or 330 mm (13") reels (with C-7280). Note that 13" reels are preferred.
4. **Labeling:** Bar code labeling (standard or custom) shall be on the side of the reel opposite the sprocket holes. Refer to EIA-556.

Embossed Carrier Tape Configuration: Figure 1

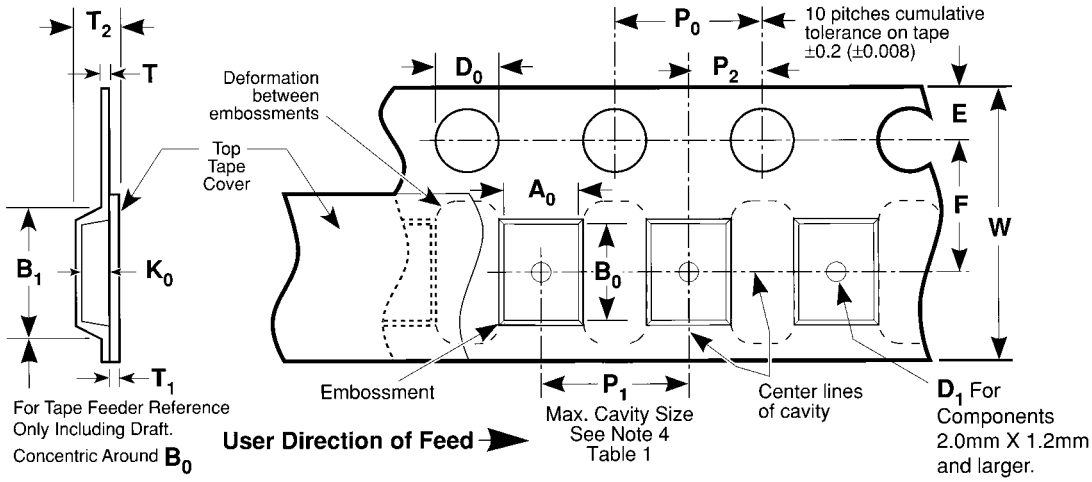


Table 1 — EMBOSSED TAPE DIMENSIONS (Metric will govern)

Constant Dimensions — Millimeters (Inches)							
Tape Size	**D_0**	**E**	**P_0**	**P_2**	**T Max**	**T_1 Max**	
8 mm and 12 mm	1.5 +0.10 -0.0 (0.059 +0.004, -0.0)	1.75 ±0.10 (0.069 ±0.004)	4.0 ±0.10 (0.157 ±0.004)	2.0 ±0.05 (0.079 ±0.002)	0.600 (0.024)	0.100 (0.004)	

Variable Dimensions — Millimeters (Inches)									
Tape Size	**Pitch**	**B_1 Max. Note 1**	**D_1 Min. Note 2**	**F**	**P_1**	**R Min. Note 3**	**T_2 Max**	**W**	**$A_0B_0K_0$ Note 4**
8 mm	Single (4 mm)	4.4 (0.173)	1.0 (0.039)	3.5 ±0.05 (0.138 ±0.002)	4.0 ±0.10 (0.157 ±0.004)	25.0 (0.984)	2.5 (0.098)	8.0 ±0.30 (.315 ±0.012)	
12 mm	Double (8 mm)	8.2 (0.323)	1.5 (0.059)	5.5 ±0.05 (0.217 ±0.002)	8.0 ±0.10 (0.315 ±0.004)	30.0 (1.181)	4.6 (0.181)	12.0 ±0.30 (0.472 ±0.012)	

NOTES

1. B1 dimension is a reference dimension for tape feeder clearance only.
2. The embossment hole location shall be measured from the sprocket hole controlling the location of the embossment. Dimensions of embossment location and hole location shall be applied independent of each other.
3. Tape with components shall pass around radius "R" without damage (see sketch A). The minimum trailer length (Fig. 2) may require additional length to provide R min. for 12 mm embossed tape for reels with hub diameters approaching N min. (Table 2)
4. The cavity defined by A_0, B_0, and K_0 shall be configured to surround the part with sufficient clearance such that the chip does not protrude beyond the sealing plane of the cover tape, the chip can be removed from the cavity in a vertical direction without mechanical restriction, rotation of the chip is limited to 20 degrees maximum in all 3 planes, and lateral movement of the chip is restricted to 0.5 mm maximum in the pocket (not applicable to vertical clearance.)

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Embossed Carrier Tape Configuration (cont.)

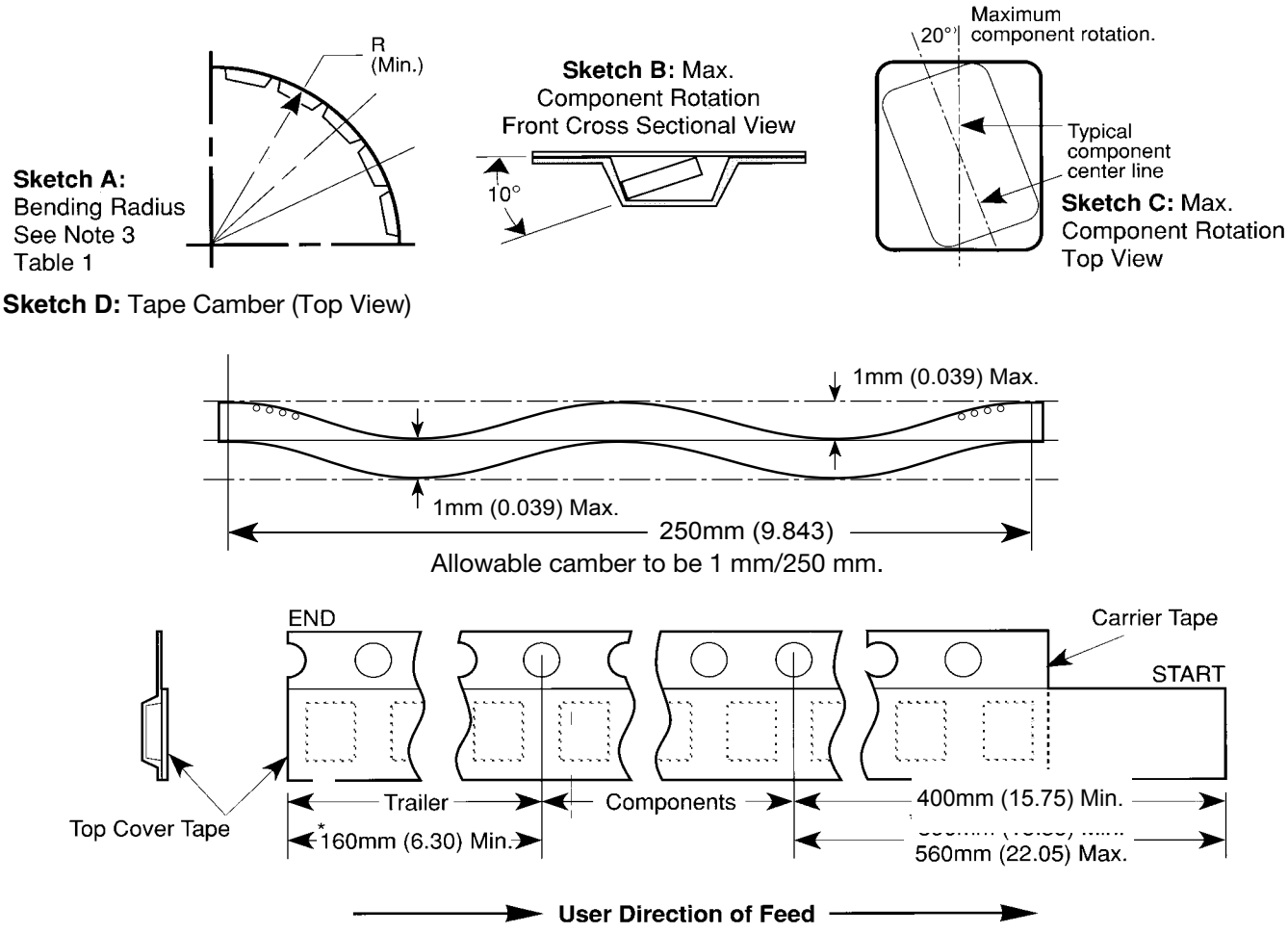


Figure 2: Tape Leader & Trailer Dimensions (Metric Dimensions Will Govern)

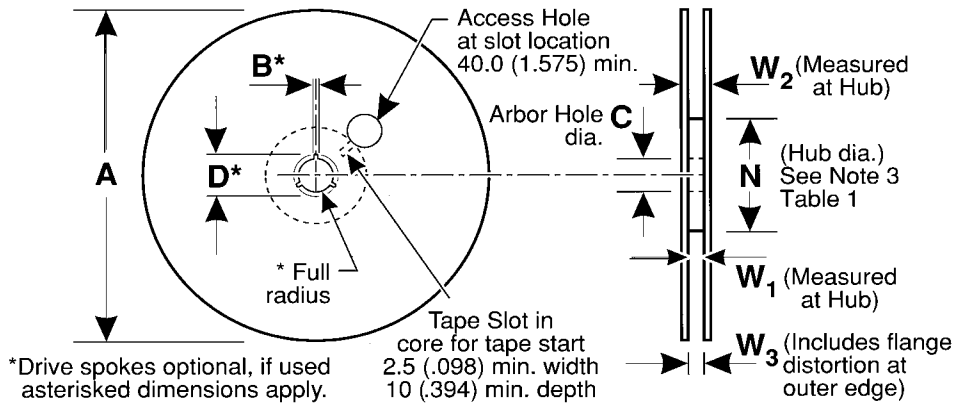


Figure 3: Reel Dimensions (Metric Dimensions will govern)

Table 2 – REEL DIMENSIONS (Metric will govern)

Tape Size	A Max	B* Min	C	D* Min	N Min	W_1	W_2 Max	W_3
8 mm	330.0 (12.992)	1.5 (0.059)	13.0 ± 0.20 (0.512 ± 0.008)	20.2 (0.795)	50.0 (1.969) See Note 3 Table 1	8.4 +1.5, -0.0 (0.331 +0.059, -0.0)	14.4 (0.567)	7.9 Min (0.311) 10.9 Max (0.429)
12 mm	330.0 (12.992)	1.5 (0.059)	13.0 ± 0.20 (0.512 ± 0.008)	20.2 (0.795)		12.4 +2.0, -0.0 (0.488 +0.078, -0.0)	18.4 (0.724)	11.9 Min (0.469) 15.4 Max (0.606)