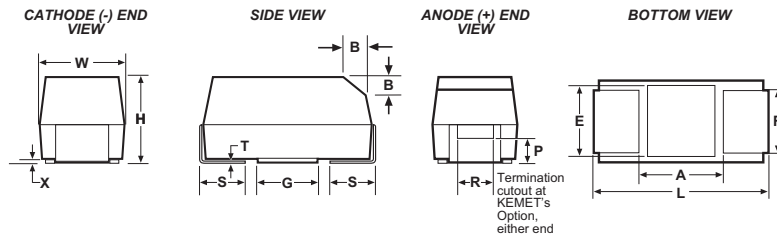


**FEATURES**

- Polymer Cathode Technology
- 125°C Maximum Temperature Capability
- High Frequency Capacitance Retention
- Non-Ignition Failure Mode
- Capacitance: 33 - 680µF
- Voltage: 2.5 to 16 volts
- Use up to 90% of Rated Voltage (10% Derating) for part types ≤ 10 Volts
- Use up to 80% of Rated Voltage (20% Derating) for part types >10 Volts
- Operating Temperature -55°C to +125°C
- 100% Accelerated Steady State Aging
- 100% Surge Current Testing
- Self-Healing Mechanism
- Volumetrically Efficient
- Extremely Stable ESR at 125°C
- EIA Standard Case Size
- RoHS Compliant / Leadfree Termination (See www.kemet.com for lead transition)

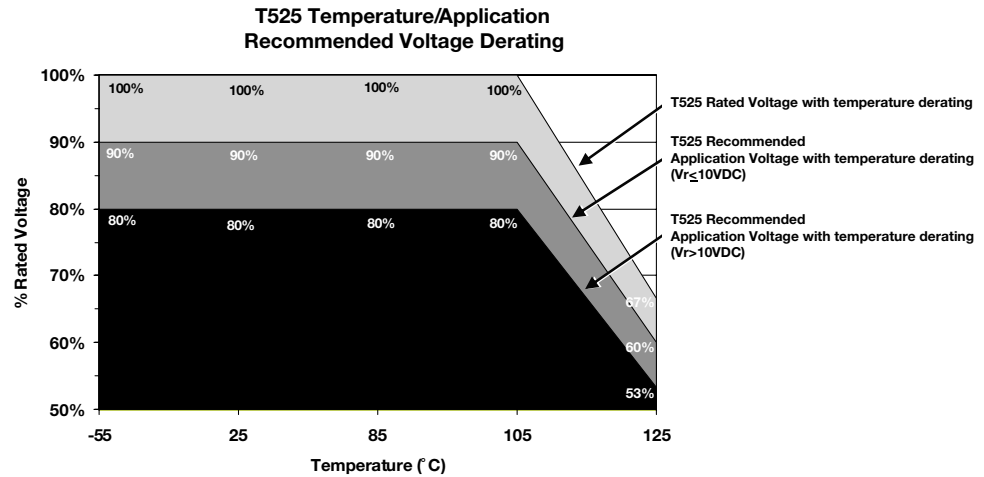
**OUTLINE DRAWING**



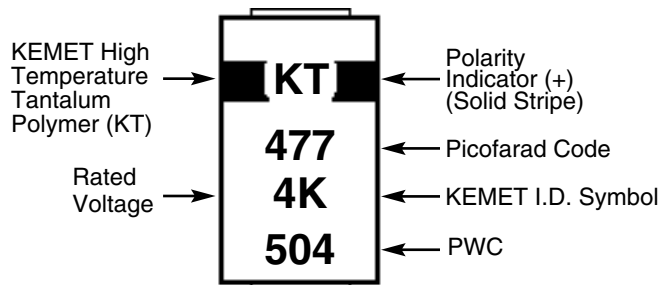
**DIMENSIONS - MILLIMETERS**

Case Size		L	W	H	F ±0.1	S ±0.3	X (Ref)	T (Ref)	A (Min)	G (Ref)	E (Ref)
KEMET	EIA										
T	3528-12	3.5 ± 0.2	2.8 ± 0.2	1.2 max.	2.2	0.8	0.05	0.13	1.1	1.8	2.2
B	3528-21	3.5 ± 0.2	2.8 ± 0.2	1.9 ± 0.1	2.2	0.8	0.10 ± 0.10	0.13	1.1	1.8	2.2
D	7343-31	7.3 ± 0.3	4.3 ± 0.3	2.8 ± 0.3	2.4	1.3	0.10 ± 0.10	0.13	3.8	3.5	3.5

**RECOMMENDED TEMPERATURE/VOLTAGE DERATING**



**COMPONENT MARKING**



504=4th week of 2005

### T525 RATINGS & PART NUMBER REFERENCE

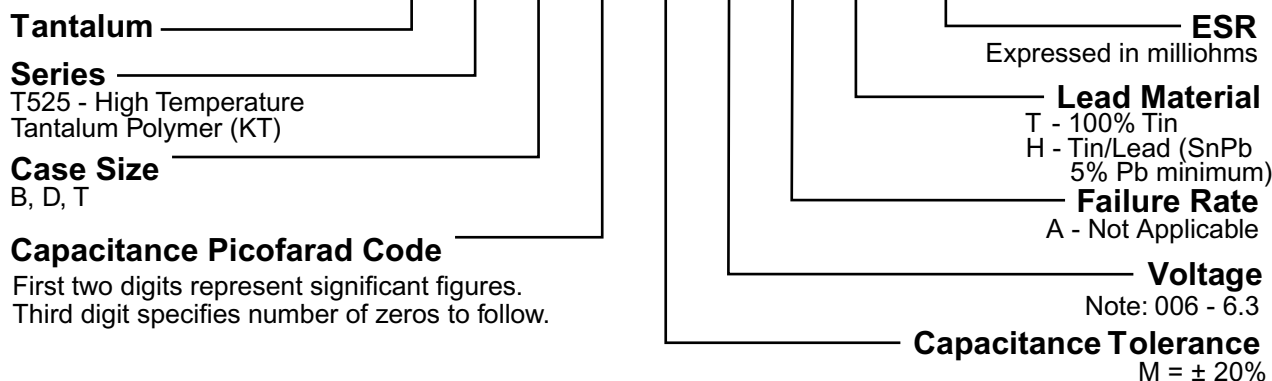
Rated Voltage (V)	Rated Capacitance (µF)	Case Code/ Case Size	KEMET Part Number	DC Leakage µA @ 20°C max/5min	DF% @ 20°C 120 Hz Max	ESR mΩ @ 20°C 100 kHz Max	Maximum allowable ripple current (mA Arms) 100kHz*	MSL Reflow Temp ≤ 260°C
2.5	100	T/3528-12	T525T107M2R5A(1)E080	25	8.0	80	1100	3
	330	D/7343-31	T525D337M2R5A(1)E025	83	10.0	25	3000	
	470	D/7343-31	T525D477M2R5A(1)E025	118	10.0	25	3000	
	680	D/7343-31	T525D687M2R5A(1)E025	170	10.0	25	3000	
3	100	B/3528-20	T525B107M003A(1)E080	30	8.0	80	1300	3
	150	B/3528-20	T525B157M003A(1)E080	45	8.0	80	1300	
	330	D/7343-31	T525D337M003A(1)E025	99	10.0	25	3000	
	470	D/7343-31	T525D477M003A(1)E025	141	10.0	25	3000	
	680	D/7343-31	T525D687M003A(1)E025	204	10.0	25	3000	
4	68	T/3528-12	T525T686M004A(1)E080	27	8.0	80	1100	3
	68	B/3528-20	T525B686M004A(1)E080	28	8.0	80	1300	
	100	B/3528-20	T525B107M004A(1)E080	40	8.0	80	1300	
	220	D/7343-31	T525D227M004A(1)E025	88	10.0	25	3000	
	330	D/7343-31	T525D337M004A(1)E025	132	10.0	25	3000	
	470	D/7343-31	T525D477M004A(1)E025	188	10.0	25	3000	
	470	D/7343-31	T525D477M004A(1)E040	188	10.0	40	2400	
6.3	33	B/3528-20	T525B336M006A(1)E080	21	8.0	80	1300	3
	47	T/3528-12	T525T476M006A(1)E080	30	8.0	80	1100	
	47	B/3528-20	T525B476M006A(1)E070	30	8.0	70	1300	
	47	B/3528-20	T525B476M006A(1)E080	30	8.0	80	1300	
	68	B/3528-20	T525B686M006A(1)E080	43	8.0	80	1300	
	150	D/7343-31	T525D157M006A(1)E025	95	10.0	25	3000	
	220	D/7343-31	T525D227M006A(1)E025	139	10.0	25	3000	
	330	D/7343-31	T525D337M006A(1)E025	208	10.0	25	3000	
8	33	T/3528-12	T525T336M008A(1)E080	26	8.0	80	1100	3
	22	B/3528-20	T525B226M010A(1)E080	22	8.0	80	1300	
10	33	T/3528-12	T525T336M010A(1)E080	33	8.0	80	1100	3
	33	B/3528-20	T525B336M010A(1)E080	33	8.0	80	1300	
	100	D/7343-31	T525D107M010A(1)E025	100	10.0	25	3000	
	100	D/7343-31	T525D107M010A(1)E055	100	10.0	55	2000	
	150	D/7343-31	T525D157M010A(1)E025	150	10.0	25	3000	
	150	D/7343-31	T525D157M010A(1)E055	150	10.0	55	2000	
	220	D/7343-31	T525D227M010A(1)E025	220	10.0	25	3000	
16	47	D/7343-31	T525D476M016A(1)E035	76	10.0	35	2500	3
	47	D/7343-31	T525D476M016A(1)E065	76	10.0	65	1900	

Conductive Polymer Surface Mount

(1) To complete KEMET Part Number, insert lead material designation for ordering information below. Higher voltage ratings and tighter tolerance product may be substituted within the same size at KEMET'S option. Voltage substitutions will be marked with the higher voltage rating. \*100kHz to 500kHz, 45° C

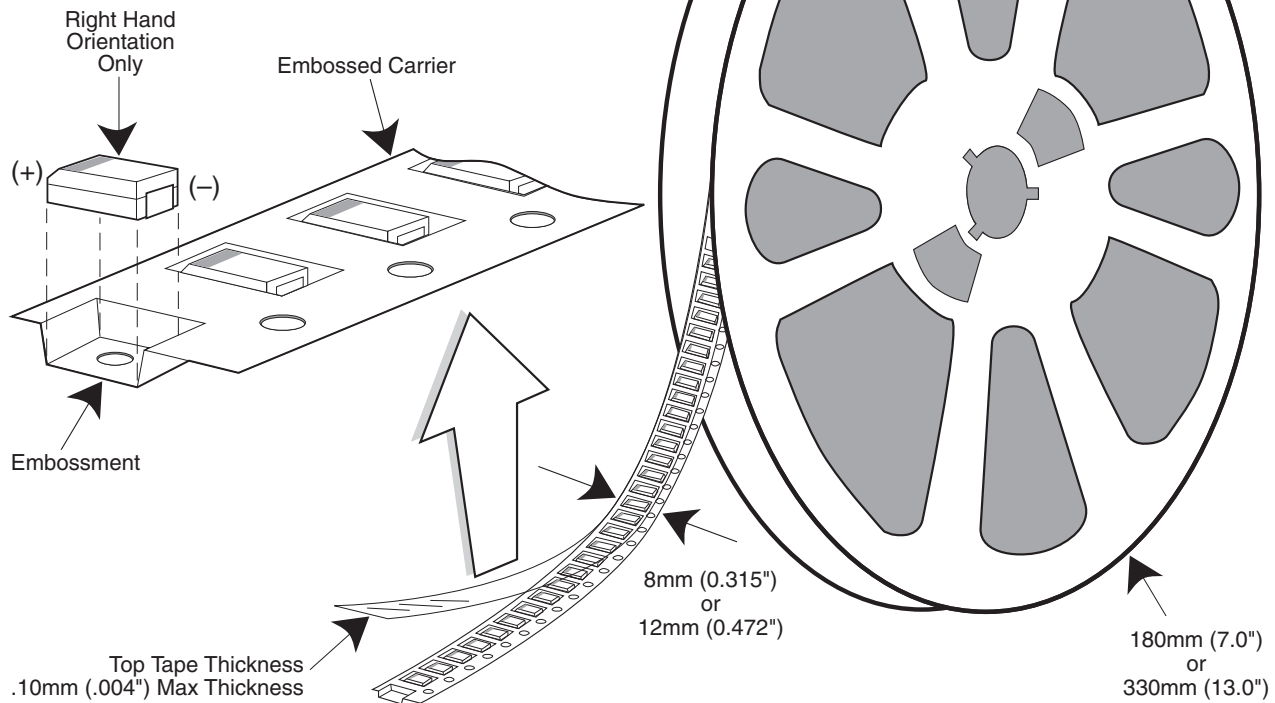
### T525 ORDERING INFORMATION

**T 525 D 337 M 006 A T E040**



## 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
I	3216 10	8	3,000	12,000
S	3216 12	8	2,500	10,000
T	3528 12	8	2,500	10,000
M	3528 15	8	2,000	8,000
U	6032 15	12	1,000	5,000
L	6032 19	12	1,000	5,000
W	7343 15	12	1,000	3,000
Z	7343 17	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.

# TANTALUM, CERAMIC AND ALUMINUM CHIP CAPACITORS

## Packaging Information

### Performance Notes

- Cover Tape Break Force:** 1.0 Kg Minimum.
- 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.

- 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.
- 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)**

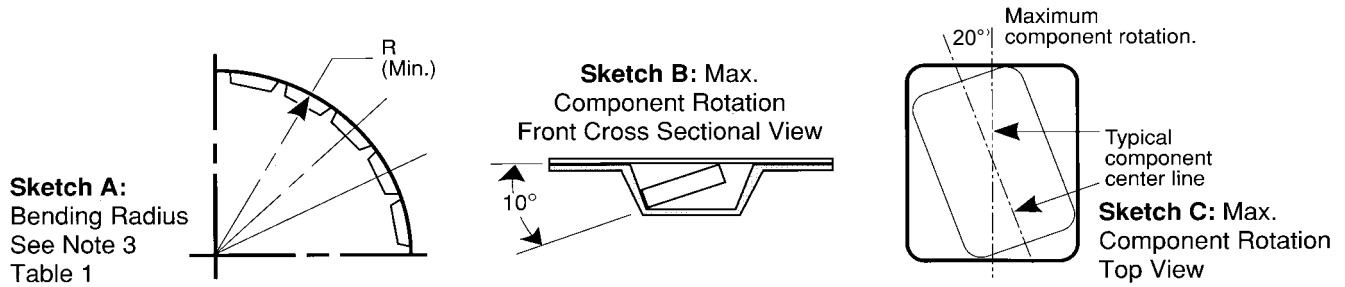
Constant Dimensions — Millimeters (Inches)									
Tape Size	D <sub>0</sub>	E	P <sub>0</sub>	P <sub>2</sub>	T Max	T <sub>1</sub> Max			
8 mm and 12 mm	1.5 +0.10 -0.0 (0.059 +0.004, -0.0)	1.75 ±0.10 (0.069 ±0.004)	4.0 ±0.10 (0.157 ±0.004)	2.0 ±0.05 (0.079 ±0.002)	0.600 (0.024)	0.100 (0.004)			
Variable Dimensions — Millimeters (Inches)									
Tape Size	Pitch	B <sub>1</sub> Max. Note 1	D <sub>1</sub> Min. Note 2	F	P <sub>1</sub>	R Min. Note 3	T <sub>2</sub> Max	W	A <sub>0</sub> B <sub>0</sub> K <sub>0</sub> 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

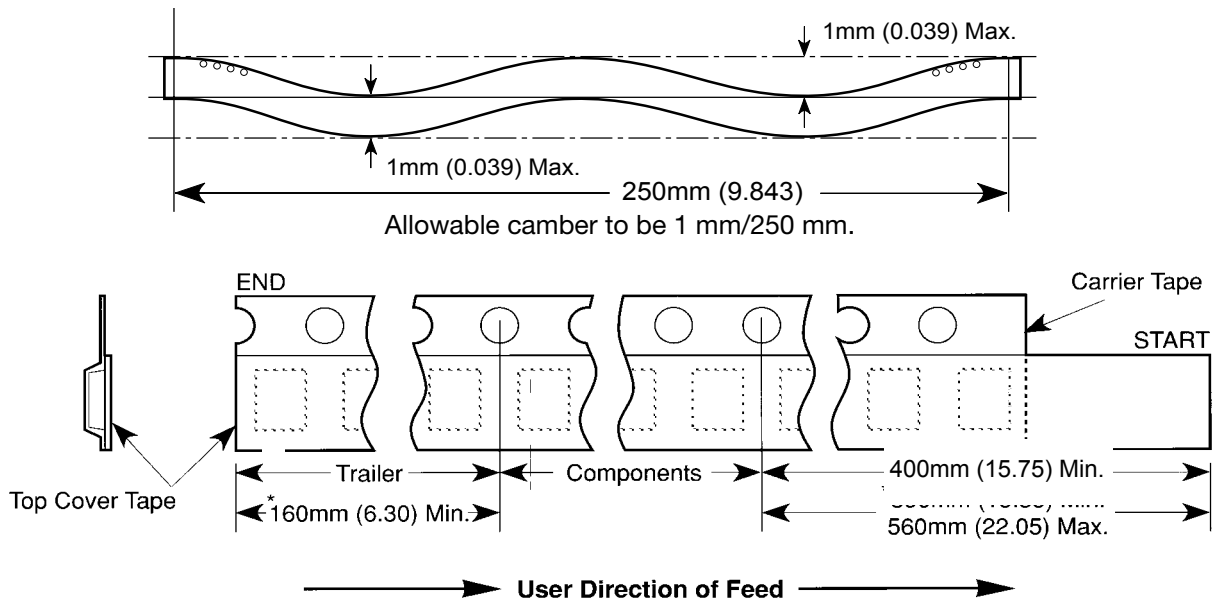
- B<sub>1</sub> dimension is a reference dimension for tape feeder clearance only.
- The embossment hole location shall be measured from the sprocket hole controlling the location of the embossment. Dimensions of embossment location and hole location shall be applied independent of each other.
- Tape 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)
- The cavity defined by A<sub>0</sub>, B<sub>0</sub>, and K<sub>0</sub> 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.)

## Packaging Information

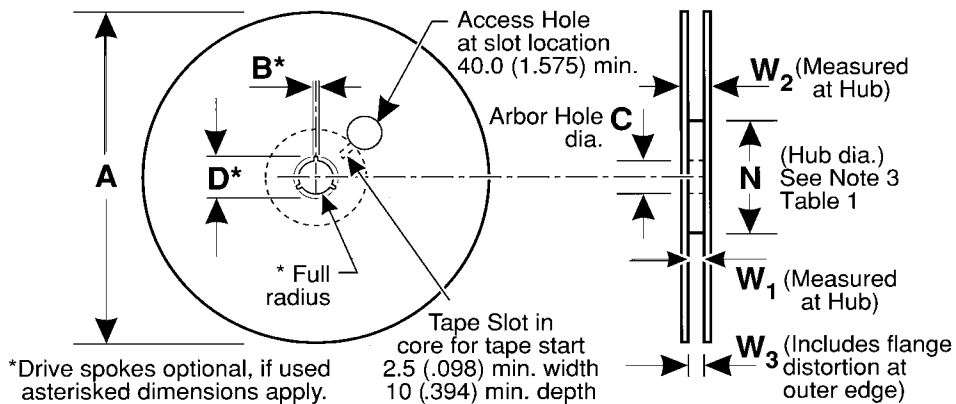
### Embossed Carrier Tape Configuration (cont.)



### Sketch D: Tape Camber (Top View)



**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	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)	Table 1	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)