

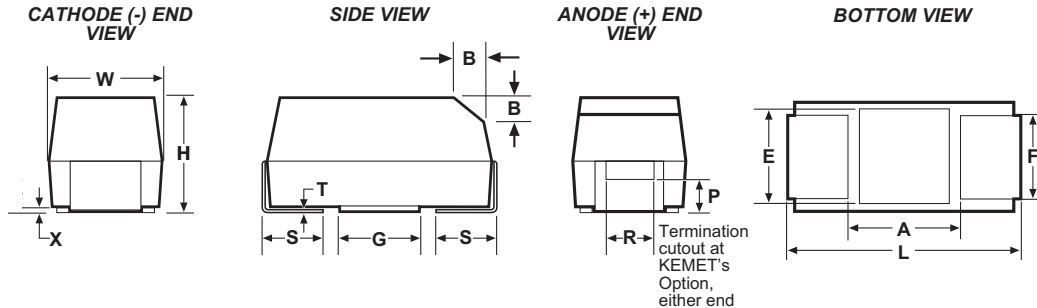
# KEMET CHARGED™ CONDUCTIVE POLYMER CHIP CAPACITORS

## T520 Series - KO Cap

### FEATURES

- Polymer Cathode Technology
- Low ESR
- High Frequency Cap Retention
- No-Ignition Failure Mode
- Use Up to 90% of Rated Voltage (10% Derating) for part types  $\leq 10$  Volts
- Halogen Free Epoxy
- 100% Accelerated Steady State Aging
- Volumetrically Efficient
- Use Up to 80% of Rated Voltage (20% Derating) for part types  $> 10$  Volts
- Capacitance 15 to 1000 $\mu$ F ( $\pm 20\%$ )
- Voltage 2V to 25V
- EIA Standard Case Sizes
- 100% Surge Current Tested
- Operating Temperature  $-55^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$
- Self Healing Mechanism
- RoHS Compliant & Leadfree Terminations (see [www.kemet.com](http://www.kemet.com) for lead transition)

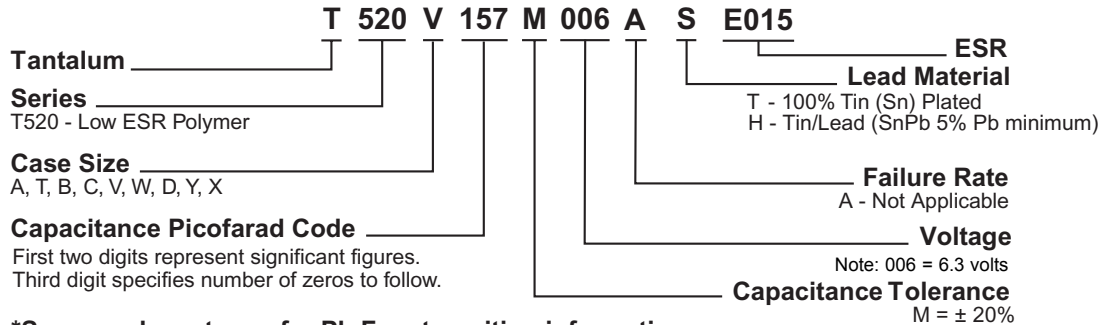
### OUTLINE DRAWING



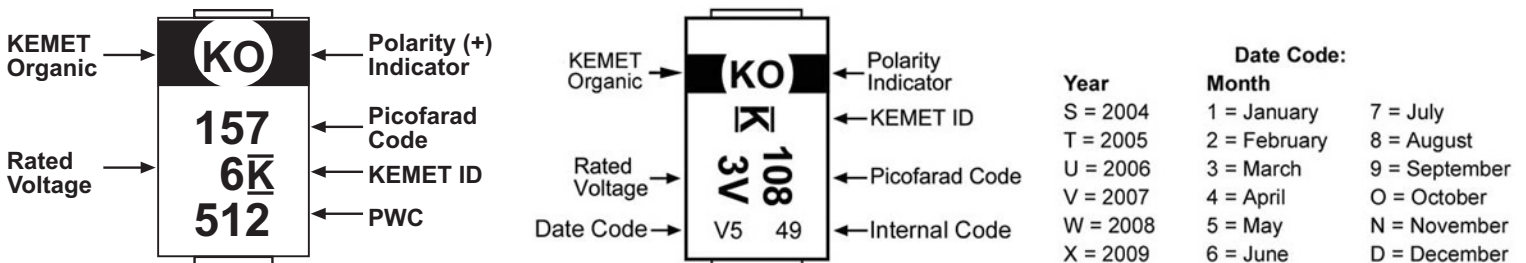
### DIMENSIONS - MILLIMETERS

Case Size		L	W	H	F $\pm 0.1$	S $\pm 0.3$	X(Ref)	T(Ref)	A(Min)	G(ref)	E(ref)
KEMET	EIA										
A	3216-18	3.2 $\pm 0.2$	1.6 $\pm 0.2$	1.6 $\pm 0.2$	1.2	0.8	0.10 $\pm 0.10$	0.13	0.8	1.1	1.3
T	3528-12	3.5 $\pm 0.2$	2.8 $\pm 0.2$	1.2 max	2.2	0.8	0.05	0.13	1.1	1.8	2.2
B	3528-21	3.5 $\pm 0.2$	2.8 $\pm 0.2$	1.9 $\pm 0.2$	2.2	0.8	0.10 $\pm 0.10$	0.13	1.1	1.8	2.2
U	6032-15	6.0 $\pm 0.3$	3.2 $\pm 0.3$	1.5 max	2.2	1.3	0.05	0.13	3.1	2.8	2.4
L	6032-19	6.0 $\pm 0.3$	3.2 $\pm 0.3$	1.9 max	2.2	1.3	0.10 $\pm 0.10$	0.13	2.5	2.8	2.4
C	6032-28	6.0 $\pm 0.3$	3.2 $\pm 0.3$	2.5 $\pm 0.3$	2.2	1.3	0.10 $\pm 0.10$	0.13	2.5	2.8	2.4
W	7343-15	7.3 $\pm 0.3$	4.3 $\pm 0.3$	1.5 max	2.4	1.3	0.05	0.13	3.8	3.5	3.5
V	7343-20	7.3 $\pm 0.3$	4.3 $\pm 0.3$	1.9 max	2.4	1.3	0.05	0.13	3.8	3.5	3.5
D	7343-31	7.3 $\pm 0.3$	4.3 $\pm 0.3$	2.8 $\pm 0.3$	2.4	1.3	0.10 $\pm 0.10$	0.13	3.8	3.5	3.5
Y	7343-40	7.3 $\pm 0.3$	4.3 $\pm 0.3$	4.0 max	2.4	1.3	0.10 $\pm 0.10$	0.13	3.8	3.5	3.5
X	7343-43	7.3 $\pm 0.3$	4.3 $\pm 0.3$	4.0 $\pm 0.3$	2.4	1.3	0.10 $\pm 0.10$	0.13	3.8	3.5	3.5

### T520 ORDERING INFORMATION



### COMPONENT MARKING



512 = 12th week of 2005

### T520 RATINGS & PART NUMBER REFERENCE

Capacitance $\mu$ F	Case Size	KEMET Part Number	DC Leakage $\mu$ A @ 25°C Max	DF% @ 25°C 120 Hz Max	ESR m $\Omega$ @ 25°C 100 kHz Max	Ripple Current Arms @ 100 kHz Max	
						w/ $\Delta$ T=20°C @ -55°C to 85°C	w/ $\Delta$ T= 2°C @ 105°C
<b>2 Volt Rating @ 105°C</b>							
470.0	V	T520V477M002A(1)E040	94	10	40	1.8	0.6
<b>2.5 Volt Rating @ 105°C</b>							
47.0	A	T520A476M2R5A(1)E090	12	8	90	0.9	0.3
56.0	T	T520T566M2R5A(1)E040	14	6	40	1.3	0.4
56.0	T	T520T566M2R5A(1)E070	14	8	70	1.0	0.3
68.0	A	T520A686M2R5A(1)E070	17	8	70	1.0	0.3
68.0	A	T520A686M2R5A(1)E080	17	8	80	1.0	0.3
100.0	T	T520T107M2R5A(1)E070	25	8	70	1.0	0.3
100.0	B	T520B107M2R5A(1)E025	25	8	25	1.8	0.6
100.0	B	T520B107M2R5A(1)E035	25	8	35	1.6	0.5
100.0	B	T520B107M2R5A(1)E040	25	8	40	1.5	0.5
100.0	B	T520B107M2R5A(1)E070	25	8	70	1.1	0.3
150.0	U	T520U157M2R5A(1)E055	38	8	55	1.3	0.4
220.0	B	T520B227M2R5A(1)E025	55	8	25	1.8	0.6
220.0	B	T520B227M2R5A(1)E030	55	8	30	1.7	0.5
220.0	B	T520B227M2R5A(1)E035	55	8	35	1.6	0.5
220.0	B	T520B227M2R5A(1)E070	55	8	70	1.1	0.3
220.0	C	T520C227M2R5A(1)E025	55	8	25	2.1	0.7
220.0	C	T520C227M2R5A(1)E045	55	8	45	1.6	0.5
220.0	V	T520V227M2R5A(1)E007	55	10	7	4.2	1.3
220.0	V	T520V227M2R5A(1)E009	55	10	9	3.7	1.2
220.0	V	T520V227M2R5A(1)E012	55	10	12	3.2	1.0
220.0	V	T520V227M2R5A(1)E015	55	10	15	2.9	0.9
220.0	V	T520V227M2R5A(1)E025	55	10	25	2.2	0.7
220.0	V	T520V227M2R5A(1)E045	55	10	45	1.7	0.5
220.0	D	T520D227M2R5A(1)E007	55	10	7	4.6	1.5
220.0	D	T520D227M2R5A(1)E040	55	10	40	1.9	0.6
330.0	B	T520B337M2R5A(1)E045	83	8	45	1.4	0.4
330.0	B	T520B337M2R5A(1)E070	83	8	70	1.1	0.3
330.0	C	T520C337M2R5A(1)E015	83	8	15	2.7	0.8
330.0	C	T520C337M2R5A(1)E018	83	8	18	2.4	0.8
330.0	C	T520C337M2R5A(1)E025	83	8	25	2.1	0.7
330.0	C	T520C337M2R5A(1)E045	83	8	45	1.6	0.5
330.0	L	T520L337M2R5A(1)E025	83	10	25	2.0	0.6
330.0	W	T520W337M2R5A(1)E040	83	10	40	1.7	0.5
330.0	V	T520V337M2R5A(1)E007	83	10	6	4.6	1.4
330.0	V	T520V337M2R5A(1)E007	83	10	7	4.2	1.3
330.0	V	T520V337M2R5A(1)E009	83	10	9	3.7	1.2
330.0	V	T520V337M2R5A(1)E012	83	10	12	3.2	1.0
330.0	V	T520V337M2R5A(1)E015	83	10	15	2.9	0.9
330.0	V	T520V337M2R5A(1)E018	83	10	18	2.6	0.8
330.0	V	T520V337M2R5A(1)E025	83	10	25	2.2	0.7
330.0	V	T520V337M2R5A(1)E040	83	10	40	1.8	0.6
330.0	D	T520D337M2R5A(1)E006	83	10	6	5.0	1.7
330.0	D	T520D337M2R5A(1)E007	83	10	7	4.6	1.5
470.0	V	T520V477M2R5A(1)E007	118	10	7	4.2	1.3
470.0	V	T520V477M2R5A(1)E009	118	10	9	3.7	1.2
470.0	V	T520V477M2R5A(1)E012	118	10	12	3.2	1.0
470.0	V	T520V477M2R5A(1)E015	118	10	15	2.9	0.9
470.0	V	T520V477M2R5A(1)E018	118	10	18	2.6	0.8
470.0	C	T520C477M2R5A(1)E025	118	8	25	2.0	0.6
470.0	C	T520C477M2R5A(1)E045	118	8	45	1.5	0.5
470.0	D	T520D477M2R5A(1)E006	118	10	6	5.0	1.7
470.0	D	T520D477M2R5A(1)E007	118	10	7	4.6	1.5
470.0	D	T520D477M2R5A(1)E009	118	10	9	4.1	1.3
680.0	D	T520D687M2R5A(1)E010	170	10	10	3.9	1.2
680.0	D	T520D687M2R5A(1)E015	170	10	15	3.2	1.0
680.0	D	T520D687M2R5A(1)E040	170	10	40	1.9	0.6
680.0	Y	T520Y687M2R5A(1)E015	170	10	15	3.3	1.0
680.0	Y	T520Y687M2R5A(1)E025	170	10	25	2.5	0.8
1000.0	D	T520D108M2R5A(1)E015	250	8	15	3.2	1.1
1000.0	D	T520D108M2R5A(1)E030	250	10	30	2.2	0.7
1000.0	Y	T520Y108M2R5A(1)E010	250	10	10	4.0	1.3
1000.0	Y	T520Y108M2R5A(1)E015	250	10	15	3.3	1.0
1000.0	Y	T520Y108M2R5A(1)E025	250	10	25	2.5	0.8
1000.0	X	T520X108M2R5A(1)E010	250	10	10	4.1	1.3
<b>3 Volt Rating @ 105°C</b>							
100.0	B	T520B107M003A(1)E025	30	8	25	1.8	0.6
100.0	B	T520B107M003A(1)E035	30	8	35	1.6	0.5
100.0	B	T520B107M003A(1)E040	30	8	40	1.5	0.5
100.0	B	T520B107M003A(1)E070	30	8	70	1.1	0.3
150.0	B	T520B157M003A(1)E035	45	8	35	1.6	0.5
150.0	B	T520B157M003A(1)E040	45	8	40	1.5	0.5
150.0	B	T520B157M003A(1)E070	45	8	70	1.1	0.3
330.0	V	T520V337M003A(1)E009	99	10	9	3.7	1.2
330.0	V	T520V337M003A(1)E012	99	10	12	3.2	1.0
330.0	V	T520V337M003A(1)E015	99	10	15	2.9	0.9
330.0	V	T520V337M003A(1)E025	99	10	25	2.2	0.7
680.0	D	T520D687M003A(1)E015	204	10	15	3.2	1.0
680.0	D	T520D687M003A(1)E040	204	10	40	1.9	0.6
1000.0	X	T520X108M003A(1)E015	300	10	15	3.3	1.0
1000.0	X	T520X108M003A(1)E030	300	10	30	2.3	0.7
<b>4 Volt Rating @ 105°C</b>							
15.0	T	T520T156M004A(1)E100	6	8	100	0.8	0.3
33.0	A	T520A336M004A(1)E070	13	8	70	1.0	0.3
33.0	A	T520A336M004A(1)E080	13	8	80	1.0	0.3
47.0	A	T520A476M004A(1)E070	19	8	70	1.0	0.3
47.0	A	T520A476M004A(1)E080	19	8	80	1.0	0.3
47.0	T	T520T476M004A(1)E070	19	8	70	1.0	0.3
68.0	T	T520T686M004A(1)E070	27	8	70	1.0	0.3
68.0	B	T520B686M004A(1)E025	27	8	25	1.8	0.6
68.0	B	T520B686M004A(1)E035	27	8	35	1.6	0.5
68.0	B	T520B686M004A(1)E040	27	8	40	1.5	0.5
68.0	B	T520B686M004A(1)E070	27	8	70	1.1	0.3
68.0	U	T520U686M004A(1)E055	27	8	55	1.3	0.4
100.0	B	T520B107M004A(1)E025	40	8	25	1.8	0.6
100.0	B	T520B107M004A(1)E035	40	8	35	1.6	0.5
100.0	B	T520B107M004A(1)E040	40	8	40	1.5	0.5
100.0	B	T520B107M004A(1)E070	40	8	70	1.1	0.3
100.0	U	T520U107M004A(1)E055	40	8	55	1.3	0.4

(1) To complete KEMET part number, insert letter designation for lead material from page 50. Higher voltage ratings and tighter tolerance product may be substituted with the same size as KEMET's option. Voltage substitutions will be marked with the higher voltage rating.

Conductive Polymer Surface Mount

### T520 RATINGS & PART NUMBER REFERENCE

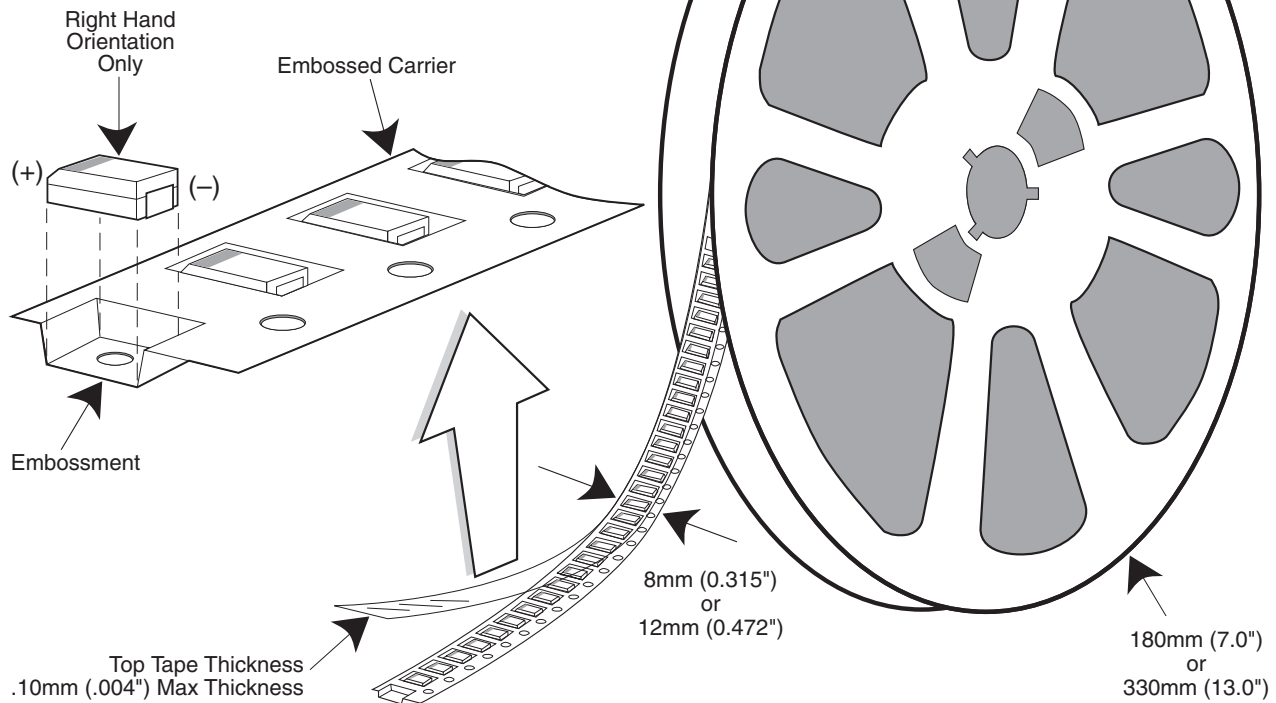
Capacitance $\mu\text{F}$	Case Size	KEMET Part Number	DC Leakage $\mu\text{A}$ @ 25°C Max	DF% @ 25°C 120 Hz Max	ESR $\text{m}\Omega$ @ 25°C 100 kHz Max	Ripple Current Arms @ 100 kHz Max	
						$\text{w}/\Delta\text{T}=20^\circ\text{C}$ @ -55°C to 85°C	$\text{w}/\Delta\text{T}=2^\circ\text{C}$ @ 105°C
<b>4 Volt Rating @ 105°C cont.</b>							
150.0	B	T520B157M004A(1)E035	60	8	35	1.6	0.5
150.0	B	T520B157M004A(1)E040	60	8	40	1.5	0.5
150.0	B	T520B157M004A(1)E070	60	8	70	1.1	0.3
150.0	U	T520U157M004A(1)E055	60	8	55	1.3	0.4
150.0	C	T520C157M004A(1)E015	60	8	15	2.7	0.9
150.0	C	T520C157M004A(1)E025	60	8	25	2.1	0.7
150.0	C	T520C157M004A(1)E045	60	8	45	1.6	0.5
150.0	C	T520C157M004A(1)E100	60	8	100	1.0	0.3
150.0	V	T520V157M004A(1)E007	60	10	7	4.2	1.3
150.0	V	T520V157M004A(1)E009	60	10	9	3.7	1.2
150.0	V	T520V157M004A(1)E012	60	10	12	3.2	1.0
150.0	V	T520V157M004A(1)E015	60	10	15	2.9	0.9
150.0	V	T520V157M004A(1)E025	60	10	25	2.2	0.7
150.0	V	T520D157M004A(1)E007	60	10	7	4.6	1.5
220.0	B	T520B227M004A(1)E035	88	8	35	1.6	0.5
220.0	B	T520B227M004A(1)E045	88	8	45	1.4	0.4
220.0	B	T520B227M004A(1)E070	88	8	70	1.1	0.3
220.0	C	T520C227M004A(1)E015	88	8	15	2.7	0.9
220.0	C	T520C227M004A(1)E018	88	8	18	2.5	0.8
220.0	C	T520C227M004A(1)E025	88	8	25	2.1	0.7
220.0	C	T520C227M004A(1)E045	88	8	45	1.6	0.5
220.0	C	T520C227M004A(1)E055	88	8	55	1.4	0.4
220.0	L	T520L227M004A(1)E025	88	10	25	2.0	0.6
220.0	W	T520W227M004A(1)E040	88	10	40	1.7	0.5
220.0	V	T520V227M004A(1)E007	88	10	7	4.2	1.3
220.0	V	T520V227M004A(1)E009	88	10	9	3.7	1.2
220.0	V	T520V227M004A(1)E012	88	10	12	3.2	1.0
220.0	V	T520V227M004A(1)E015	88	10	15	2.9	0.9
220.0	V	T520V227M004A(1)E018	88	10	18	2.6	0.8
220.0	V	T520V227M004A(1)E025	88	10	25	2.2	0.7
220.0	V	T520V227M004A(1)E040	88	10	40	1.8	0.6
220.0	V	T520V227M004A(1)E045	88	10	45	1.7	0.5
220.0	D	T520D227M004A(1)E006	88	10	6	5.0	1.7
220.0	D	T520D227M004A(1)E007	88	10	7	4.6	1.5
220.0	D	T520D227M004A(1)E012	88	10	12	3.5	1.1
220.0	D	T520D227M004A(1)E065	88	10	65	1.5	0.5
330.0	C	T520C337M004A(1)E025	132	8	25	2.0	0.6
330.0	V	T520V337M004A(1)E007	132	10	7	4.2	1.3
330.0	V	T520V337M004A(1)E009	132	10	9	3.7	1.2
330.0	V	T520V337M004A(1)E012	132	10	12	3.2	1.0
330.0	V	T520V337M004A(1)E018	132	10	18	2.6	0.8
330.0	V	T520V337M004A(1)E025	132	10	25	2.2	0.7
330.0	V	T520V337M004A(1)E040	132	10	40	1.8	0.6
330.0	D	T520D337M004A(1)E006	132	10	6	5.0	1.7
330.0	D	T520D337M004A(1)E007	132	10	7	4.6	1.5
330.0	D	T520D337M004A(1)E009	132	10	9	4.1	1.3
330.0	D	T520D337M004A(1)E012	132	10	12	3.5	1.1
330.0	D	T520D337M004A(1)E015	132	10	15	3.2	1.0
330.0	D	T520D337M004A(1)E040	132	10	40	1.9	0.6
330.0	D	T520D337M004A(1)E045	132	8	45	1.5	0.5
470.0	D	T520D477M004A(1)E010	188	10	10	3.9	1.2
470.0	D	T520D477M004A(1)E012	188	10	12	3.5	1.1
470.0	D	T520D477M004A(1)E015	188	10	15	3.2	1.0
470.0	D	T520D477M004A(1)E018	188	10	18	2.9	0.9
470.0	D	T520D477M004A(1)E025	188	10	25	2.4	0.8
470.0	D	T520D477M004A(1)E040	188	10	40	1.9	0.6
680.0	D	T520D687M004A(1)E012	272	10	12	3.5	1.2
680.0	D	T520D687M004A(1)E015	272	10	15	3.2	1.1
680.0	D	T520D687M004A(1)E025	272	10	25	2.4	0.8
680.0	Y	T520Y687M004A(1)E010	272	10	10	4.0	1.3
680.0	Y	T520Y687M004A(1)E015	272	10	15	3.3	1.0
680.0	Y	T520Y687M004A(1)E025	272	10	25	2.5	0.8
680.0	X	T520X687M004A(1)E010	272	10	10	4.1	1.3
680.0	X	T520X687M004A(1)E015	272	10	15	3.3	1.0
680.0	X	T520X687M004A(1)E035	272	10	35	2.2	0.7
<b>6.3 Volt Rating @ 105°C</b>							
15.0	T	T520T156M006A(1)E100	9.5	8	100	0.8	0.3
22.0	A	T520A226M006A(1)E090	14	8	90	0.9	0.3
22.0	A	T520A226M006A(1)E100	14	8	100	0.9	0.3
33.0	A	T520A336M006A(1)E070	21	8	70	1.0	0.3
33.0	A	T520A336M006A(1)E080	21	8	80	1.0	0.3
33.0	T	T520T336M006A(1)E070	21	8	70	0.9	0.4
33.0	B	T520B336M006A(1)E025	21	8	25	1.8	0.6
33.0	B	T520B336M006A(1)E035	21	8	35	1.5	0.5
33.0	B	T520B336M006A(1)E040	21	8	40	1.5	0.5
33.0	B	T520B336M006A(1)E070	21	8	70	1.1	0.3
47.0	T	T520T476M006A(1)E040	30	8	40	1.3	0.4
47.0	T	T520T476M006A(1)E070	30	8	70	1.0	0.3
47.0	B	T520B476M006A(1)E025	30	8	25	1.8	0.6
47.0	B	T520B476M006A(1)E035	30	8	35	1.6	0.5
47.0	B	T520B476M006A(1)E040	30	8	40	1.5	0.5
47.0	B	T520B476M006A(1)E070	30	8	70	1.1	0.3
68.0	B	T520B686M006A(1)E025	43	8	25	1.8	0.6
68.0	B	T520B686M006A(1)E035	43	8	35	2.4	0.5
68.0	B	T520B686M006A(1)E040	43	8	40	1.5	0.5
68.0	B	T520B686M006A(1)E070	43	8	70	1.1	0.3
68.0	U	T520U686M006A(1)E055	43	8	55	1.3	0.4
100.0	B	T520B107M006A(1)E040	63	8	40	1.5	0.5
100.0	B	T520B107M006A(1)E045	63	8	45	1.4	0.4
100.0	B	T520B107M006A(1)E070	63	8	70	1.1	0.3
100.0	U	T520U107M006A(1)E055	63	8	55	1.3	0.4
100.0	W	T520W107M006A(1)E040	63	10	40	1.7	0.5
100.0	V	T520V107M006A(1)E007	63	10	7	4.2	1.3
100.0	V	T520V107M006A(1)E009	63	10	9	3.7	1.2
100.0	V	T520V107M006A(1)E012	63	10	12	3.2	1.0
100.0	V	T520V107M006A(1)E015	63	10	15	2.9	0.9
100.0	V	T520V107M006A(1)E045	63	10	45	1.7	0.5
100.0	C	T520C107M006A(1)E025	63	8	25	2.1	0.7
100.0	C	T520C107M006A(1)E045	63	8	45	1.6	0.5
100.0	D	T520D107M006A(1)E007	63	10	7	4.6	1.5
120.0	B	T520B127M006A(1)E035	76	8	35	1.5	0.5
150.0	B	T520B157M006A(1)E035	95	8	35	1.6	0.5
150.0	B	T520B157M006A(1)E045	95	8	45	1.4	0.4
150.0	B	T520B157M006A(1)E070	95	8	70	1.1	0.3
150.0	C	T520C157M006A(1)E025	95	8	25	2.1	0.7
150.0	C	T520C157M006A(1)E045	95	8	45	1.6	0.5
150.0	L	T520L157M006A(1)E025	95	10	25	2.0	0.6
150.0	W	T520W157M006A(1)E040	95	10	40	1.7	0.5
150.0	V	T520V157M006A(1)E007	95	10	7	4.2	1.3
150.0	V	T520V157M006A(1)E009	95	10	9	3.7	1.2
150.0	V	T520V157M006A(1)E012	95	10	12	3.2	1.0
150.0	V	T520V157M006A(1)E015	95	10	15	2.9	0.9
150.0	V	T520V157M006A(1)E025	95	10	25	2.2	0.7
150.0	V	T520V157M006A(1)E040	95	10	40	1.8	0.6
150.0	V	T520V157M006A(1)E045	95	10	45	1.7	0.5
150.0	D	T520D157M006A(1)E006	95	10	6	5.0	1.7
150.0	D	T520D157M006A(1)E007	95	10	7	4.6	1.5
150.0	D	T520D157M006A(1)E015	95	10	15	3.2	1.0
150.0	D	T520D157M006A(1)E025	95	10	25	2.4	0.8
150.0	D	T520D157M006A(1)E055	95	10	55	1.7	0.5
220.0	C	T520C227M006A(1)E015	139	8	15	2.7	0.9
220.0	C	T520C227M006A(1)E018	139	8	18	2.5	0.8
220.0	C	T520C227M006A(1)E025	139	8	25	2.0	0.6
220.0	C	T520C227M006A(1)E045	139	8	45	1.5	0.5

(1) To complete KEMET part number, insert letter designation for lead material from page 50. Higher voltage ratings and tighter tolerance product may be substituted with the same size as KEMET's option. Voltage substitutions will be marked with the higher voltage rating.



## 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.

# TANTALUM, CERAMIC AND ALUMINUM CHIP CAPACITORS

## Packaging Information

### Performance Notes

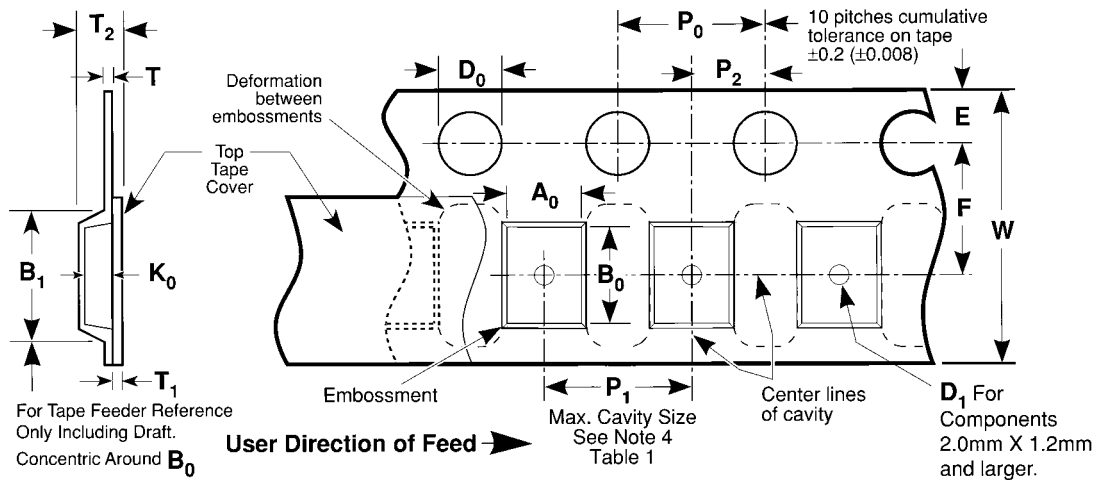
- Cover Tape Break Force:** 1.0 Kg Minimum.
- Cover Tape Peel Strength:** The total peel strength of the cover tape from the carrier tape shall be:

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

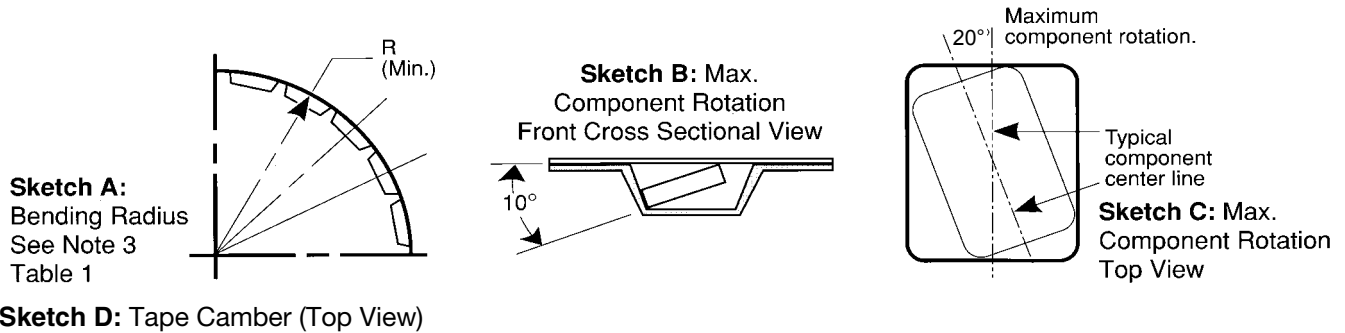
- B<sub>1</sub> dimension is a reference dimension for tape feeder clearance only.
- The embossment hole location shall be measured from the sprocket hole controlling the location of the embossment. Dimensions of embossment location and hole location shall be applied independent of each other.
- Tape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

# TANTALUM, CERAMIC AND ALUMINUM CHIP CAPACITORS

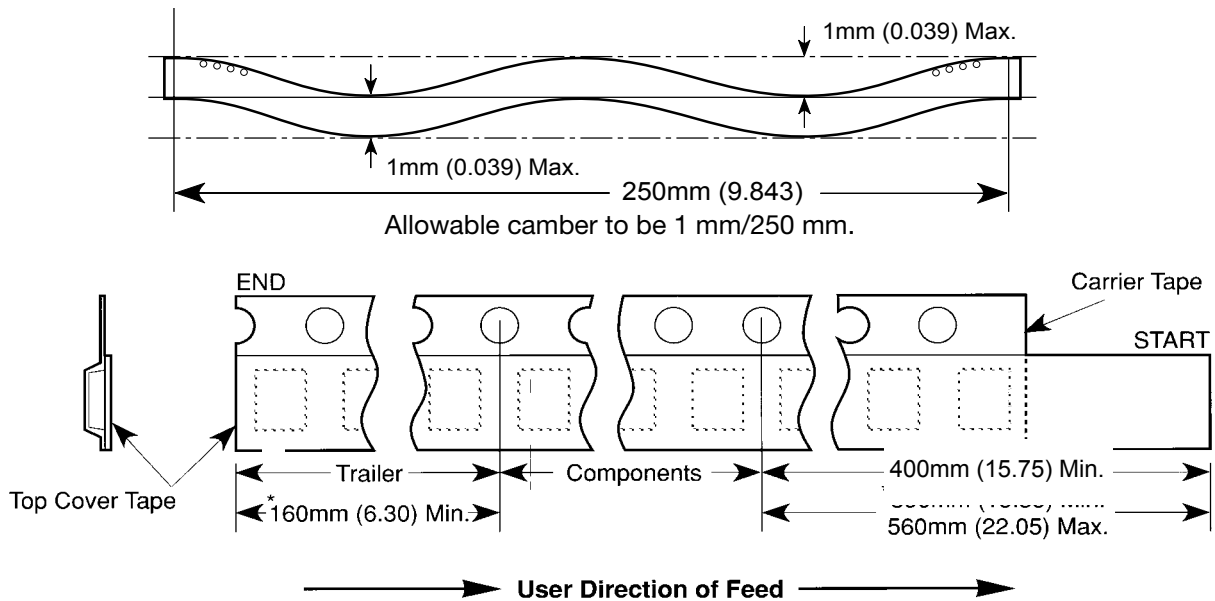


## Packaging Information

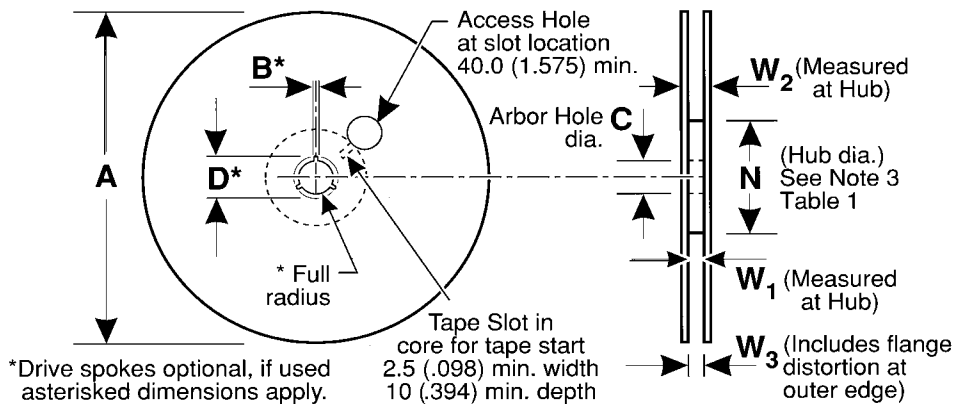
### Embossed Carrier Tape Configuration (cont.)



### 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)