

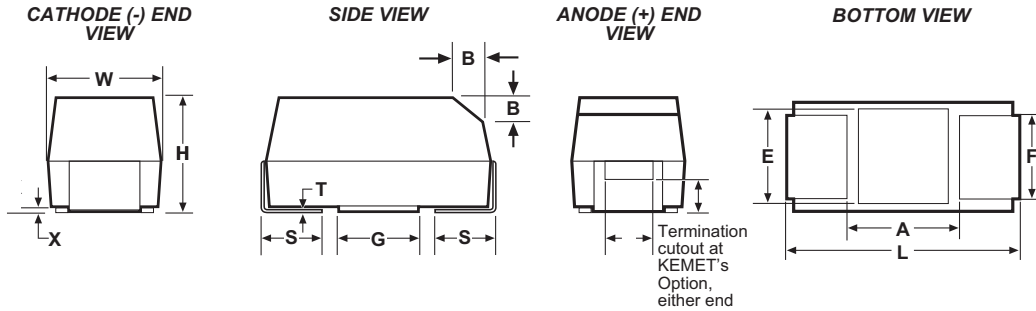
# KEMET CHARGED: CONDUCTIVE POLYMER CHIP CAPACITORS

## 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
M	3528-15	3.5 $\pm 0.2$	2.8 $\pm 0.2$	1.5 max	2.2	0.8	0.11	0.13	2.1	1.8	2.2
B	3528-21	3.5 $\pm 0.2$	2.8 $\pm 0.2$	1.9 $\pm 0.1$	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

**T 520 V 157 M 006 A T E015**

**Tantalum** \_\_\_\_\_

**Series** \_\_\_\_\_  
T520 - Low ESR Polymer

**Case Size** \_\_\_\_\_  
A, T, B, C, V, W, D, Y, X

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

**ESR** \_\_\_\_\_

**Lead Material** \_\_\_\_\_  
T - 100% Tin (Sn) Plated  
H - Tin/Lead (SnPb 5% Pb minimum)

**Failure Rate** \_\_\_\_\_  
A - Not Applicable

**Voltage** \_\_\_\_\_  
Note: 006 = 6.3 volts

**Capacitance Tolerance** \_\_\_\_\_  
M =  $\pm 20\%$

\*See [www.kemet.com](http://www.kemet.com) for Pb Free transition information.

### COMPONENT MARKING

**KEMET Organic** → KO

**Polarity (+) Indicator** → KO

**Picofarad Code** → 157

**KEMET ID** → 6K

**PWC** → 512

**Rated Voltage** → 6K

**KEMET Organic** → KO

**Polarity Indicator** → K

**KEMET ID** → KO

**Picofarad Code** → 108

**Rated Voltage** → 3V

**Internal Code** → V5 49

**Date Code:**

Year	Month	Month
S = 2004	1 = January	7 = July
T = 2005	2 = February	8 = August
U = 2006	3 = March	9 = September
V = 2007	4 = April	O = October
W = 2008	5 = May	N = November
X = 2009	6 = June	D = December

512 = 12th week of 2005

### T520 RATINGS & PART NUMBER REFERENCE

Rated Voltage (V)	Rated Capacitance (µF)	Case Code/Case Size	KEMET Part Number	DC Leakage µA @ 20°C 5min	DF% @ 20°C 120 Hz Max	ESR mΩ @ 20°C 100 kHz Max	Maximum allowable ripple current (mA)rms 100kHz*	MSL Reflow Temp ≤ 260°C
2	470	V/7343-19	T520V477M002A(1)E040	94	10	40	2200	3
2.5	47	A/3216-18	T520A476M2R5A(1)E090	12	8	90	1100	3
	56	T/3528-12	T520T566M2R5A(1)E040	14	6	40	1600	
	56	T/3528-12	T520T566M2R5A(1)E070	14	8	70	1200	
	68	A/3216-18	T520A686M2R5A(1)E070	17	8	70	1300	
	68	A/3216-18	T520A686M2R5A(1)E080	17	8	80	1200	
	100	T/3528-12	T520T107M2R5A(1)E040	25	8	40	1600	
	100	T/3528-12	T520T107M2R5A(1)E070	25	8	70	1200	
	100	B/3528-20	T520B107M2R5A(1)E025	25	8	25	2300	
	100	B/3528-20	T520B107M2R5A(1)E035	25	8	35	1900	
	100	B/3528-20	T520B107M2R5A(1)E040	25	8	40	1800	
	100	B/3528-20	T520B107M2R5A(1)E070	25	8	70	1300	
	150	U/6032-15	T520U157M2R5A(1)E055	38	8	55	1600	
	220	B/3528-20	T520B227M2R5A(1)E015	55	8	15	2900	
	220	B/3528-20	T520B227M2R5A(1)E018	55	8	15	2900	
	220	B/3528-20	T520B227M2R5A(1)E021	55	8	21	2500	
	220	B/3528-20	T520B227M2R5A(1)E025	55	8	25	2300	
	220	B/3528-20	T520B227M2R5A(1)E030	55	8	30	2100	
	220	B/3528-20	T520B227M2R5A(1)E035	55	8	35	1900	
	220	B/3528-20	T520B227M2R5A(1)E055	55	8	55	1500	
	220	B/3528-20	T520B227M2R5A(1)E070	55	8	70	1300	
	220	U/6032-15	T520U227M2R5A(1)E055	55	8	55	1600	
	220	C/6032-28	T520C227M2R5A(1)E025	55	8	25	2600	
	220	C/6032-28	T520C227M2R5A(1)E045	55	8	45	1900	
	220	W/7343-15	T520W227M2R5A(1)E025	55	8	25	2200	
	220	V/7343-19	T520V227M2R5A(1)E007	55	10	7	5200	
	220	V/7343-19	T520V227M2R5A(1)E009	55	10	9	4600	
	220	V/7343-19	T520V227M2R5A(1)E012	55	10	12	3900	
	220	V/7343-19	T520V227M2R5A(1)E015	55	10	15	3500	
	220	V/7343-19	T520V227M2R5A(1)E025	55	10	25	2700	
	220	V/7343-19	T520V227M2R5A(1)E045	55	10	45	2000	
	220	D/7343-31	T520D227M2R5A(1)E007	55	10	7	5700	
	220	D/7343-31	T520D227M2R5A(1)E040	55	10	40	2400	
	330	B/3528-20	T520B337M2R5A(1)E045	83	8	45	1700	
	330	B/3528-20	T520B337M2R5A(1)E070	83	8	70	1300	
	330	C/6032-28	T520C337M2R5A(1)E015	83	8	15	3300	
	330	C/6032-28	T520C337M2R5A(1)E018	83	8	18	3000	
	330	C/6032-28	T520C337M2R5A(1)E025	83	8	25	2600	
	330	C/6032-28	T520C337M2R5A(1)E045	83	8	45	1900	
	330	L/6032-20	T520L337M2R5A(1)E009	83	10	9	4100	
	330	L/6032-20	T520L337M2R5A(1)E012	83	10	12	3500	
330	L/6032-20	T520L337M2R5A(1)E025	83	10	25	2400		
330	W/7343-15	T520W337M2R5A(1)E015	83	10	15	2800		
330	W/7343-15	T520W337M2R5A(1)E025	83	10	25	2200		
330	W/7343-15	T520W337M2R5A(1)E040	83	10	40	1700		
330	V/7343-19	T520V337M2R5A(1)E006	83	10	6	5600		
330	V/7343-19	T520V337M2R5A(1)E007	83	10	7	5200		
330	V/7343-19	T520V337M2R5A(1)E009	83	10	9	4600		
330	V/7343-19	T520V337M2R5A(1)E012	83	10	12	3900		
330	V/7343-19	T520V337M2R5A(1)E015	83	10	15	3500		
330	V/7343-19	T520V337M2R5A(1)E018	83	10	18	3200		
330	V/7343-19	T520V337M2R5A(1)E025	83	10	25	2700		
330	V/7343-19	T520V337M2R5A(1)E040	83	10	40	2200		
330	D/7343-31	T520D337M2R5A(1)E006	83	10	6	6100		
330	D/7343-31	T520D337M2R5A(1)E007	83	10	7	5700		
470	V/7343-19	T520V477M2R5A(1)E007	118	10	7	5200		
470	V/7343-19	T520V477M2R5A(1)E009	118	10	9	4600		
470	V/7343-19	T520V477M2R5A(1)E012	118	10	12	3900		
470	V/7343-19	T520V477M2R5A(1)E015	118	10	15	3500		
470	V/7343-19	T520V477M2R5A(1)E018	118	10	18	3200		
470	C/6032-28	T520C477M2R5A(1)E025	118	8	25	2600		
470	C/6032-28	T520C477M2R5A(1)E045	118	8	45	1900		
470	D/7343-31	T520D477M2R5A(1)E006	118	10	6	6100		
470	D/7343-31	T520D477M2R5A(1)E007	118	10	7	5700		
470	D/7343-31	T520D477M2R5A(1)E009	118	10	9	4600		
680	D/7343-31	T520D687M2R5A(1)E010	170	10	10	4700		
680	D/7343-31	T520D687M2R5A(1)E015	170	10	15	3900		
680	D/7343-31	T520D687M2R5A(1)E040	170	10	40	2400		
680	Y/7343-40	T520Y687M2R5A(1)E015	170	10	15	4000		
680	Y/7343-40	T520Y687M2R5A(1)E025	170	10	25	3100		
1000	D/7343-31	T520D108M2R5A(1)E015	250	8	15	3900		
1000	D/7343-31	T520D108M2R5A(1)E030	250	10	30	2700		
1000	Y/7343-40	T520Y108M2R5A(1)E010	250	10	10	4900		
1000	Y/7343-40	T520Y108M2R5A(1)E015	250	10	15	4000		
1000	Y/7343-40	T520Y108M2R5A(1)E025	250	10	25	3100		
1000	X/7343-43	T520X108M2R5A(1)E010	250	10	10	5000		

\*100kHz to 500kHz, 45° C

(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 at KEMET's option. Voltage substitutions will be marked with the higher voltage rating.

Rated Voltage (V)	Rated Capacitance (µF)	Case Code/Case Size	KEMET Part Number	DC Leakage µA @ 20°C 5min	DF% @ 20°C 120 Hz Max	ESR mΩ @ 20°C 100 kHz Max	Maximum allowable ripple current (mA)rms 100kHz*	MSL Reflow Temp ≤ 260°C
3	100	B/3528-20	T520B107M003A(1)E025	30	8	25	2300	3
	100	B/3528-20	T520B107M003A(1)E035	30	8	35	1900	
	100	B/3528-20	T520B107M003A(1)E040	30	8	40	1800	
	100	B/3528-20	T520B107M003A(1)E070	30	8	70	1300	
	150	B/3528-20	T520B157M003A(1)E035	45	8	35	1900	
	150	B/3528-20	T520B157M003A(1)E040	45	8	40	1800	
	150	B/3528-20	T520B157M003A(1)E070	45	8	70	1300	
	330	V/7343-19	T520V337M003A(1)E009	99	10	9	4600	
	330	V/7343-19	T520V337M003A(1)E012	99	10	12	3900	
	330	V/7343-19	T520V337M003A(1)E015	99	10	15	3500	
	330	V/7343-19	T520V337M003A(1)E025	99	10	25	2700	
	680	D/7343-31	T520D687M003A(1)E015	204	10	15	3900	
	680	D/7343-31	T520D687M003A(1)E040	204	10	40	2400	
	1000	X/7343-43	T520X108M003A(1)E015	300	10	15	4100	
	1000	X/7343-43	T520X108M003A(1)E030	300	10	30	2900	
	15	T/3528-12	T520T156M004A(1)E070	6	8	100	1000	
	33	A/3216-18	T520A336M004A(1)E010	13	8	70	1300	
	33	A/3216-18	T520A336M004A(1)E080	13	8	80	1200	
	47	A/3216-18	T520A476M004A(1)E070	19	8	70	1300	
	47	A/3216-18	T520A476M004A(1)E080	19	8	80	1200	
	47	T/3528-12	T520T476M004A(1)E070	19	8	70	1200	
	68	T/3528-12	T520T686M004A(1)E070	27	8	70	1200	
	68	B/3528-20	T520B686M004A(1)E025	27	8	25	2300	
	68	B/3528-20	T520B686M004A(1)E035	27	8	35	1900	
	68	B/3528-20	T520B686M004A(1)E040	27	8	40	1800	
	68	B/3528-20	T520B686M004A(1)E070	27	8	70	1300	
	68	U/6032-15	T520U686M004A(1)E055	27	8	55	1600	
	100	A/3216-18	T520A107M004A(1)E200	40	8	200	700	
	100	T/3528-12	T520T107M004A(1)E070	40	8	70	1200	
	100	T/3528-12	T520T107M004A(1)E150	40	8	150	800	
	100	B/3528-20	T520B107M004A(1)E025	40	8	25	2300	
	100	B/3528-20	T520B107M004A(1)E035	40	8	35	1900	
	100	B/3528-20	T520B107M004A(1)E040	40	8	40	1800	
	100	B/3528-20	T520B107M004A(1)E070	40	8	70	1300	
	100	U/6032-15	T520U107M004A(1)E055	40	8	55	1600	
	150	B/3528-20	T520B157M004A(1)E015	60	8	15	2900	
	150	B/3528-20	T520B157M004A(1)E018	60	8	18	2700	
	150	B/3528-20	T520B157M004A(1)E035	60	8	35	1900	
	150	B/3528-20	T520B157M004A(1)E040	60	8	40	1800	
	150	B/3528-20	T520B157M004A(1)E070	60	8	70	1300	
150	U/6032-15	T520U157M004A(1)E055	60	8	55	1600		
150	C/6032-28	T520C157M004A(1)E015	60	8	15	3300		
150	C/6032-28	T520C157M004A(1)E025	60	8	25	2600		
150	C/6032-28	T520C157M004A(1)E045	60	8	45	1900		
150	C/6032-28	T520C157M004A(1)E100	60	8	100	1300		
150	V/7343-19	T520V157M004A(1)E007	60	10	7	5200		
150	V/7343-19	T520V157M004A(1)E009	60	10	9	4600		
150	V/7343-19	T520V157M004A(1)E012	60	10	12	3900		
150	V/7343-19	T520V157M004A(1)E015	60	10	15	3500		
150	V/7343-19	T520V157M004A(1)E025	60	10	25	2700		
150	D/7343-31	T520D157M004A(1)E007	60	10	7	5700		
220	B/3528-20	T520B227M004A(1)E035	88	8	35	1900		
220	B/3528-20	T520B227M004A(1)E045	88	8	45	1700		
220	B/3528-20	T520B227M004A(1)E070	88	8	70	1300		
220	C/6032-28	T520C227M004A(1)E015	88	8	15	3300		
220	C/6032-28	T520C22						

### T520 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		
4	220	D/7343-31	T520D227M004A(1)E006	88	10	6	6100	3		
	220	D/7343-31	T520D227M004A(1)E007	88	10	7	5700			
	220	D/7343-31	T520D227M004A(1)E012	88	10	12	4300			
	220	D/7343-31	T520D227M004A(1)E065	88	10	65	1900			
	330	C/6032-28	T520C337M004A(1)E025	132	8	25	2600			
	330	V/7343-19	T520V337M004A(1)E007	132	10	7	5200			
	330	V/7343-19	T520V337M004A(1)E009	132	10	9	4600			
	330	V/7343-19	T520V337M004A(1)E012	132	10	12	3900			
	330	V/7343-19	T520V337M004A(1)E018	132	10	18	3200			
	330	V/7343-19	T520V337M004A(1)E025	132	10	25	2700			
	330	V/7343-19	T520V337M004A(1)E040	132	10	40	2200			
	330	D/7343-31	T520D337M004A(1)E006	132	10	6	6100			
	330	D/7343-31	T520D337M004A(1)E007	132	10	7	5700			
	330	D/7343-31	T520D337M004A(1)E009	132	10	9	5000			
	330	D/7343-31	T520D337M004A(1)E012	132	10	12	4300			
	330	D/7343-31	T520D337M004A(1)E015	132	10	15	3900			
	330	D/7343-31	T520D337M004A(1)E040	132	10	40	2400			
	330	D/7343-31	T520D337M004A(1)E045	132	8	45	2200			
	470	D/7343-31	T520D477M004A(1)E010	188	10	10	4700			
	470	D/7343-31	T520D477M004A(1)E012	188	10	12	4300			
	470	D/7343-31	T520D477M004A(1)E015	188	10	15	3900			
	470	D/7343-31	T520D477M004A(1)E018	188	10	18	3500			
	470	D/7343-31	T520D477M004A(1)E025	188	10	25	3000			
	470	D/7343-31	T520D477M004A(1)E040	188	10	40	2400			
	680	D/7343-31	T520D687M004A(1)E012	272	10	12	4300			
	680	D/7343-31	T520D687M004A(1)E015	272	10	15	3900			
	680	D/7343-31	T520D687M004A(1)E025	272	10	25	3000			
	680	Y/7343-40	T520Y687M004A(1)E010	272	10	10	4900			
	680	Y/7343-40	T520Y687M004A(1)E015	272	10	15	4000			
	680	Y/7343-40	T520Y687M004A(1)E025	272	10	25	3100			
	680	X/7343-43	T520X687M004A(1)E010	272	10	10	5000			
	680	X/7343-43	T520X687M004A(1)E015	272	10	15	4100			
	680	X/7343-43	T520X687M004A(1)E035	272	10	35	2700			
	6.3	15	T/3528-12	T520T156M006A(1)E100	9.5	8	100		1000	3
		22	A/3216-18	T520A226M006A(1)E090	14	8	90		1100	
		22	A/3216-18	T520A226M006A(1)E100	14	8	100		1100	
		33	A/3216-18	T520A336M006A(1)E070	21	8	70		1300	
		33	A/3216-18	T520A336M006A(1)E080	21	8	80		1200	
		33	A/3216-18	T520A336M006A(1)E120	21	8	120		1000	
		33	T/3528-12	T520T336M006A(1)E070	21	8	70		1200	
33		B/3528-20	T520B336M006A(1)E025	21	8	25	2300			
33		B/3528-20	T520B336M006A(1)E035	21	8	35	1900			
33		B/3528-20	T520B336M006A(1)E040	21	8	40	1800			
33		B/3528-20	T520B336M006A(1)E070	21	8	70	1300			
33		C/6032-28	T520C336M006A(1)E100	21	8	100	1300			
47		T/3528-12	T520T476M006A(1)E040	30	8	40	1600			
47		T/3528-12	T520T476M006A(1)E070	30	8	70	1200			
47		B/3528-20	T520B476M006A(1)E025	30	8	25	2300			
47		B/3528-20	T520B476M006A(1)E035	30	8	35	1900			
47		B/3528-20	T520B476M006A(1)E040	30	8	40	1800			
47		B/3528-20	T520B476M006A(1)E070	30	8	70	1300			
68		T/3528-12	T520T686M006A(1)E070	43	8	70	1200			
68		T/3528-12	T520T686M006A(1)E150	43	8	150	800			
68		B/3528-20	T520B686M006A(1)E025	43	8	25	2300			
68		B/3528-20	T520B686M006A(1)E035	43	8	35	1900			
68		B/3528-20	T520B686M006A(1)E040	43	8	40	1800			
68		B/3528-20	T520B686M006A(1)E070	43	8	70	1300			
68		U/6032-15	T520U686M006A(1)E055	43	8	55	1600			
68		U/6032-15	T520U686M006A(1)E070	43	8	70	1400			
68		C/6032-28	T520C686M006A(1)E100	43	8	100	1300			
100		B/3528-20	T520B107M006A(1)E015	63	8	15	2900			
100		B/3528-20	T520B107M006A(1)E018	63	8	18	2700			
100		B/3528-20	T520B107M006A(1)E040	63	8	40	1800			
100		B/3528-20	T520B107M006A(1)E045	63	8	45	1700			
100		B/3528-20	T520B107M006A(1)E070	63	8	70	1300			
100		U/6032-15	T520U107M006A(1)E055	63	8	55	1600			
100		W/7343-15	T520W107M006A(1)E040	63	10	40	1700			
100		V/7343-19	T520V107M006A(1)E007	63	10	7	5200			
100		V/7343-19	T520V107M006A(1)E009	63	10	9	4600			
100		V/7343-19	T520V107M006A(1)E012	63	10	12	3900			
100		V/7343-19	T520V107M006A(1)E015	63	10	15	3500			
100		V/7343-19	T520V107M006A(1)E045	63	10	45	2000			
100		C/6032-28	T520C107M006A(1)E025	63	8	25	2600			
100	C/6032-28	T520C107M006A(1)E045	63	8	45	1900				

\*100kHz to 500kHz, 45° C

(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 at KEMET's option. Voltage substitutions will be marked with the higher voltage rating.

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
6.3	120	B/3528-20	T520B127M006A(1)E035	76	8	35	1900	3
	150	B/3528-20	T520B157M006A(1)E025	95	8	25	2300	
	150	B/3528-20	T520B157M006A(1)E035	95	8	35	1900	
	150	B/3528-20	T520B157M006A(1)E045	95	8	45	1700	
	150	B/3528-20	T520B157M006A(1)E070	95	8	70	1300	
	150	M/3528-15	T520M157M006A(1)E150	95	10	150	700	
	150	M/3528-15	T520M157M006A(1)E200	95	8	200	600	
	150	C/6032-28	T520C157M006A(1)E025	95	8	25	2600	
	150	C/6032-28	T520C157M006A(1)E045	95	8	45	1900	
	150	U/6032-15	T520U157M006A(1)E045	95	8	45	1700	
	150	U/6032-15	T520U157M006A(1)E055	95	8	55	1600	
	150	L/6032-20	T520L157M006A(1)E012	95	8	12	3500	
	150	L/6032-20	T520L157M006A(1)E025	95	10	25	2400	
	150	W/7343-15	T520W157M006A(1)E025	95	10	25	2200	
	150	W/7343-15	T520W157M006A(1)E040	95	10	40	1700	
	150	V/7343-19	T520V157M006A(1)E007	95	10	7	5200	
	150	V/7343-19	T520V157M006A(1)E009	95	10	9	4600	
	150	V/7343-19	T520V157M006A(1)E012	95	10	12	3900	
	150	V/7343-19	T520V157M006A(1)E015	95	10	15	3500	
	150	V/7343-19	T520V157M006A(1)E025	95	10	25	2700	
	150	V/7343-19	T520V157M006A(1)E040	95	10	40	2200	
	150	V/7343-19	T520V157M006A(1)E045	95	10	45	2000	
	150	D/7343-31	T520D157M006A(1)E006	95	10	6	6100	
	150	D/7343-31	T520D157M006A(1)E007	95	10	7	5700	
	150	D/7343-31	T520D157M006A(1)E015	95	10	15	3900	
	150	D/7343-31	T520D157M006A(1)E025	95	10	25	3000	
	150	D/7343-31	T520D157M006A(1)E055	95	10	55	2000	
	220	C/6032-28	T520C227M006A(1)E015	139	8	15	3300	
	220	C/6032-28	T520C227M006A(1)E018	139	8	18	3000	
	220	C/6032-28	T520C227M006A(1)E025	139	8	25	2600	
	220	C/6032-28	T520C227M006A(1)E045	139	8	45	1900	
	220	V/7343-19	T520V227M006A(1)E007	139	10	7	5200	
	220	V/7343-19	T520V227M006A(1)E009	139	10	9	4600	
	220	V/7343-19	T520V227M006A(1)E012	139	10	12	3900	
	220	V/7343-19	T520V227M006A(1)E015	139	10	15	3500	
	220	V/7343-19	T520V227M006A(1)E025	139	10	25	2700	
	220	V/7343-19	T520V227M006A(1)E040	139	10	40	2200	
	220	D/7343-31	T520D227M006A(1)E006	139	10	6	6100	
	220	D/7343-31	T520D227M006A(1)E007	139	10	7	5700	
	220	D/7343-31	T520D227M006A(1)E009	139	10	9	5000	
220	D/7343-31	T520D227M006A(1)E015	139	10	15	3900		
220	D/7343-31	T520D227M006A(1)E018	139	10	18	3500		
220	D/7343-31	T520D227M006A(1)E025	139	10	25	3000		
220	D/7343-31	T520D227M006A(1)E040	139	10	40	2400		
220	D/7343-31	T520D227M006A(1)E050	139	10	50	2100		
330	V/7343-19	T520V337M006A(1)E015	208	10	15	3500		
330	V/7343-19	T520V337M006A(1)E018	208	10	18	3200		
330	V/7343-19	T520V337M006A(1)E025	208	10	25	2700		
330	V/7343-19	T520V337M006A(1)E040	208	10	40	2200		
330	V/7343-19	T520V337M006A(1)E045	208	10	45	2000		
330	D/7343-31	T520D337M006A(1)E009	208	10	9	5000		
330	D/7343-31	T520D337M006A(1)E010	208	10	10	4700		
330	D/7343-31	T520D337M006A(1)E015	208	10	15	3900		
330	D/7343-31	T520D337M006A(1)E018	208	10	18	3500		
330	D/7343-31	T520D337M006A(1)E025	208	10	25	3000		
330	D/7343-31	T520D337M006A(1)E040	208	10	40	2400		
330	D/7343-31	T520D337M006A(1)E045	208	10	45	2200		
330	Y/7343-40	T520Y337M006A(1)E015	208	10	15	4000		
330	Y/7343-40	T520Y337M006A(1)E025	208	10	25	3100		
330	Y/7343-40	T520Y337M006A(1)E040	208	10	40	2500		
470	Y/7343-40	T520Y477M006A(1)E010	296	10	10	4900		
470	Y/7343-40	T520Y477M006A(1)E015	296	10	15	4000		
470	Y/7343-40	T520Y477M006A(1)E018	296	10	18	3700		
470	Y/7343-40	T520Y477M006A(1)E025	296	10	25	3100		
470	Y/7343-40	T520Y477M006A(1)E035	296	10	35	2600		
470	D/7343-31	T520D477M006A(1)E025	296	10	25	3000		
470	D/7343-31	T520D477M006A(1)E030	296	10	30	2700		
470	X/7343-43	T520X477M006A(1)E010	296	10	10	5000		
470	X/7343-43	T520X477M006A(1)E018	296	10	18	3700		
470	X/7343-43	T520X477M006A(1)E035	296	10	35	2700		
470	X/7343-43	T520X477M006A(1)E040	296	10	40	2500		

# CONDUCTIVE POLYMER CHIP CAPACITORS

## T520 Series - KO Cap



### T520 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
8	33	T/3528-12	T520T336M008A(1)E070	26	8	70	1200	3
	33	T/3528-12	T520T336M008A(1)E080	26	8	80	1100	
	33	B/3528-20	T520B336M008A(1)E025	26	8	25	2300	
	33	B/3528-20	T520B336M008A(1)E035	26	15	35	1900	
	33	B/3528-20	T520B336M008A(1)E040	26	8	40	1800	
	33	B/3528-20	T520B336M008A(1)E070	26	8	70	1300	
	33	U/6032-15	T520U336M008A(1)E070	26	8	70	1400	
	47	B/3528-20	T520B476M008A(1)E035	38	8	35	1900	
	47	B/3528-20	T520B476M008A(1)E070	38	8	70	1300	
	82	C/6032-28	T520C826M008A(1)E025	82	8	66	1600	
	82	C/6032-28	T520C826M008A(1)E045	82	8	66	1600	
	150	D/7343-31	T520D157M008A(1)E025	120	10	25	3000	
	150	D/7343-31	T520D157M008A(1)E040	120	10	40	2400	
	150	D/7343-31	T520D157M008A(1)E055	120	10	55	2000	
	150	V/7343-19	T520V157M008A(1)E040	120	10	40	2200	
10	10	A/3216-18	T520A106M010A(1)E080	10	8	80	1200	3
	15	A/3216-18	T520A156M010A(1)E080	15	8	80	1200	
	22	A/3216-18	T520A226M010A(1)E080	22	8	80	1200	
	33	T/3528-12	T520T336M010A(1)E040	33	8	40	1600	
	33	T/3528-12	T520T336M010A(1)E070	33	8	70	1200	
	33	T/3528-12	T520T336M010A(1)E080	33	8	80	1100	
	33	B/3528-20	T520B336M010A(1)E025	33	10	25	2300	
	33	B/3528-20	T520B336M010A(1)E035	33	8	35	1900	
	33	B/3528-20	T520B336M010A(1)E040	33	8	40	1800	
	33	B/3528-20	T520B336M010A(1)E070	33	8	70	1300	
	33	U/6032-15	T520U336M010A(1)E070	33	8	70	1400	
	47	B/3528-20	T520B476M010A(1)E035	47	8	35	1900	
	47	B/3528-20	T520B476M010A(1)E070	47	8	70	1300	
	47	U/6032-15	T520U476M010A(1)E055	47	8	55	1600	
	47	C/6032-28	T520C476M010A(1)E100	47	8	100	1300	
	68	U/6032-15	T520U686M010A(1)E055	68	8	55	1600	
	68	W/7343-15	T520W686M010A(1)E025	68	10	25	2200	
	68	W/7343-15	T520W686M010A(1)E040	68	10	40	1700	
	68	C/6032-28	T520C686M010A(1)E045	68	8	45	1900	
	68	V/7343-19	T520V686M010A(1)E025	68	10	25	2700	
	68	V/7343-19	T520V686M010A(1)E040	68	10	40	2200	
	68	V/7343-19	T520V686M010A(1)E045	68	10	45	2000	
	68	V/7343-19	T520V686M010A(1)E060	68	10	60	1800	
	68	V/7343-19	T520V686M010A(1)E100	68	10	100	1400	
	68	D/7343-31	T520D686M010A(1)E100	68	10	100	1500	
	100	C/6032-28	T520C107M010A(1)E025	100	8	25	2600	
	100	C/6032-28	T520C107M010A(1)E045	100	8	45	1900	
	100	L/6032-20	T520L107M010A(1)E025	100	10	25	2400	
	100	W/7343-15	T520W107M010A(1)E040	100	10	40	1700	
	100	V/7343-19	T520V107M010A(1)E018	100	10	18	3200	
100	V/7343-19	T520V107M010A(1)E025	100	10	25	2700		
100	V/7343-19	T520V107M010A(1)E045	100	10	45	2000		
100	V/7343-19	T520V107M010A(1)E050	100	10	50	1900		
100	D/7343-31	T520D107M010A(1)E018	100	10	18	3500		
100	D/7343-31	T520D107M010A(1)E055	100	10	55	2000		
100	D/7343-31	T520D107M010A(1)E080	100	10	80	1700		
150	C/6032-28	T520C157M010A(1)E055	150	8	55	1700		
150	V/7343-19	T520V157M010A(1)E018	150	10	18	3200		
150	V/7343-19	T520V157M010A(1)E025	150	10	25	2700		
150	V/7343-19	T520V157M010A(1)E040	150	10	40	2200		
150	D/7343-31	T520D157M010A(1)E015	150	10	15	3900		
150	D/7343-31	T520D157M010A(1)E018	150	10	18	3500		
150	D/7343-31	T520D157M010A(1)E025	150	10	25	3000		
150	D/7343-31	T520D157M010A(1)E040	150	10	40	2400		
150	D/7343-31	T520D157M010A(1)E055	150	10	55	2000		
150	Y/7343-40	T520Y157M010A(1)E015	150	10	15	4000		
150	Y/7343-40	T520Y157M010A(1)E018	150	10	18	3700		
150	Y/7343-40	T520Y157M010A(1)E025	150	10	25	3100		
220	V/7343-19	T520V227M010A(1)E045	220	10	45	2000		
220	Y/7343-40	T520Y227M010A(1)E040	220	10	40	2500		
220	D/7343-31	T520D227M010A(1)E018	220	10	18	3500		
220	D/7343-31	T520D227M010A(1)E025	220	10	25	3000		
220	D/7343-31	T520D227M010A(1)E040	220	10	40	2400		
330	Y/7343-40	T520Y337M010A(1)E015	330	10	15	4000		
330	Y/7343-40	T520Y337M010A(1)E035	330	10	35	2600		
330	X/7343-43	T520X337M010A(1)E010	330	10	10	5000		
330	X/7343-43	T520X337M010A(1)E025	330	10	25	3100		
330	X/7343-43	T520X337M010A(1)E040	330	10	40	2500		

\*100kHz to 500kHz, 45° C

(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 at KEMET's option. Voltage substitutions will be marked with the higher voltage rating.

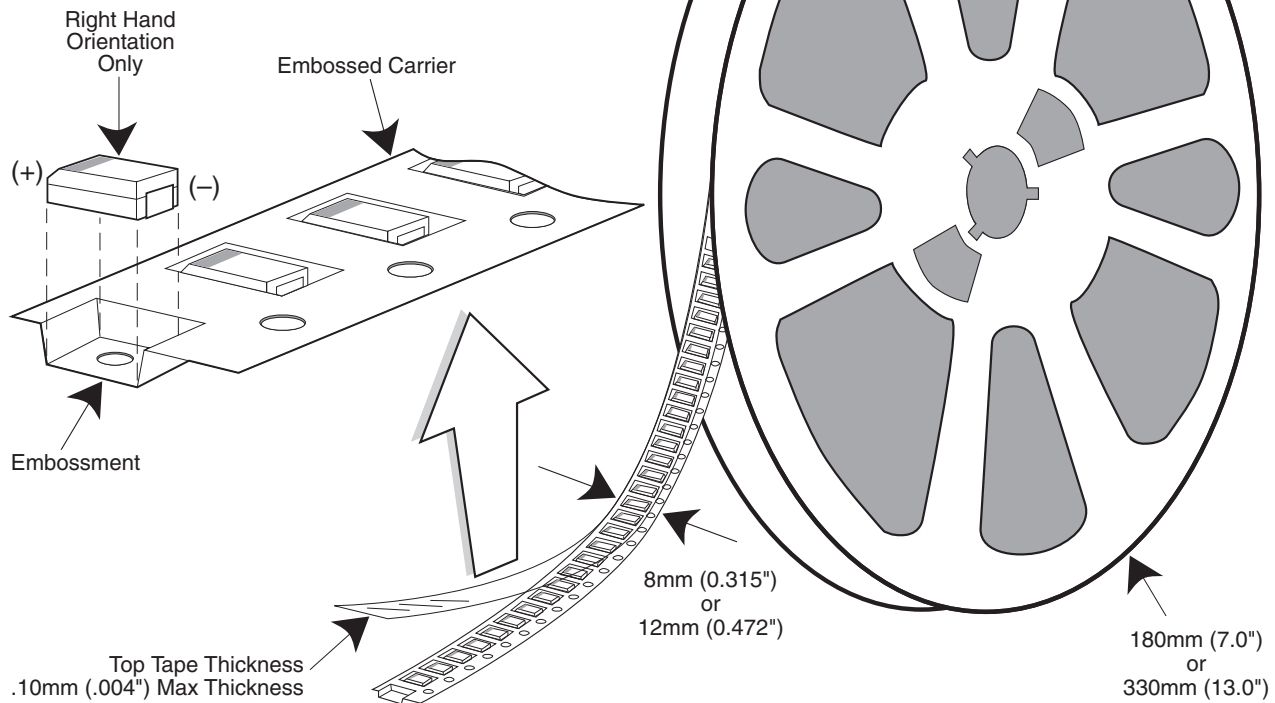
Rated Voltage (V)	Rated Capacitance (µF)	Case Code/ Case Size	KEMET Part Number	DC Leakage µA @ 20°C max/ 5min	DF% @ 20°C 120 Hz Max	ESR mΩ @ 20°C 100 kHz Max	Maximum allowable ripple current (mA Arms) 100kHz*	MSL Reflow Temp ≤ 260°C
12.5	10	T/3528-12	T520T106M12RA(1)E150	13	8	150	800	3
	15	T/3528-12	T520T156M12RA(1)E080	19	8	80	1100	
16	10	B/3528-20	T520B106M016A(1)E100	16	8	100	1100	3
	22	C/6032-28	T520C226M016A(1)E080	35	8	80	1400	
	33	W/7343-15	T520W336M016A(1)E045	53	10	60	1400	
	33	V/7343-19	T520V336M016A(1)E045	53	10	45	2000	
	33	V/7343-19	T520V336M016A(1)E060	53	10	60	1800	
	33	V/7343-19	T520V336M016A(1)E070	53	10	70	1600	
	47	W/7343-15	T520W476M016A(1)E045	75	10	45	1600	
	47	V/7343-19	T520V476M016A(1)E045	75	10	45	2000	
16	47	V/7343-19	T520V476M016A(1)E070	76	10	70	1600	3
	47	D/7343-31	T520D476M016A(1)E035	75	10	35	2500	
	47	D/7343-31	T520D476M016A(1)E070	75	10	70	1800	
	68	D/7343-31	T520D686M016A(1)E050	109	10	50	2100	
	150	X/7343-43	T520X157M016A(1)E040	240	10	40	2500	
	22	V/7343-19	T520V226M020A(1)E040	44	10	40	2200	
20	22	V/7343-19	T520V226M020A(1)E045	44	10	45	2000	3
	22	V/7343-19	T520V226M020A(1)E090	44	10	90	1400	
	15	V/7343-19	T520V156M025A(1)E090	38	10	90	1400	
25	15	D/7343-31	T520D156M025A(1)E060	38	10	60	1900	3
	15	D/7343-31	T520D156M025A(1)E080	38	10	80	1700	

\*100kHz to 500kHz, 45° C

(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 at 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
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



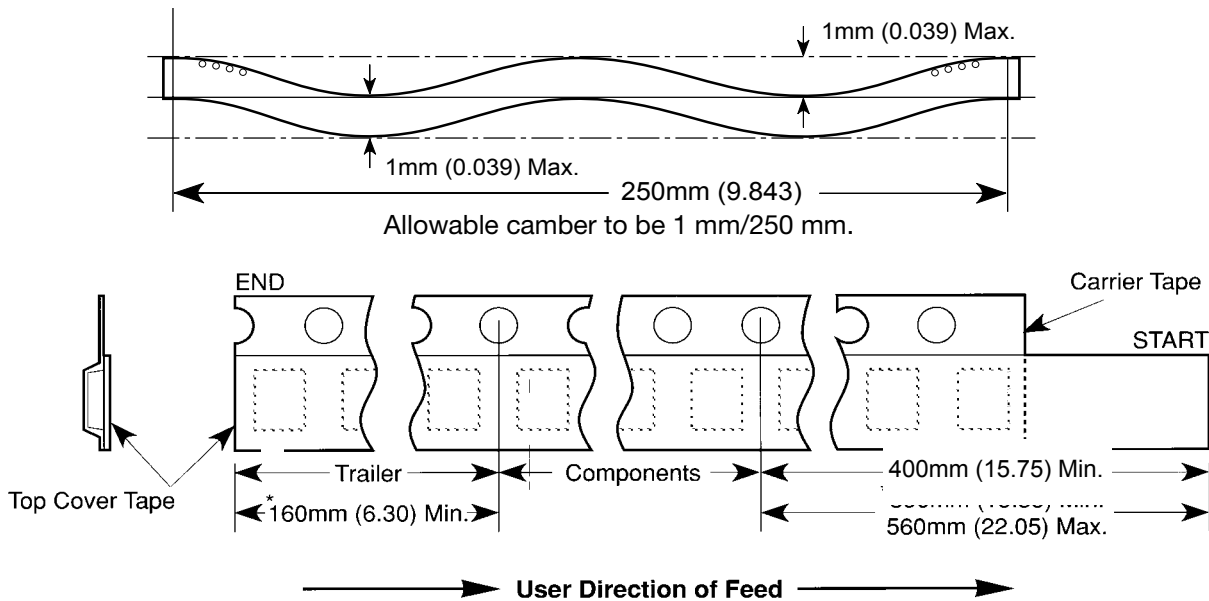
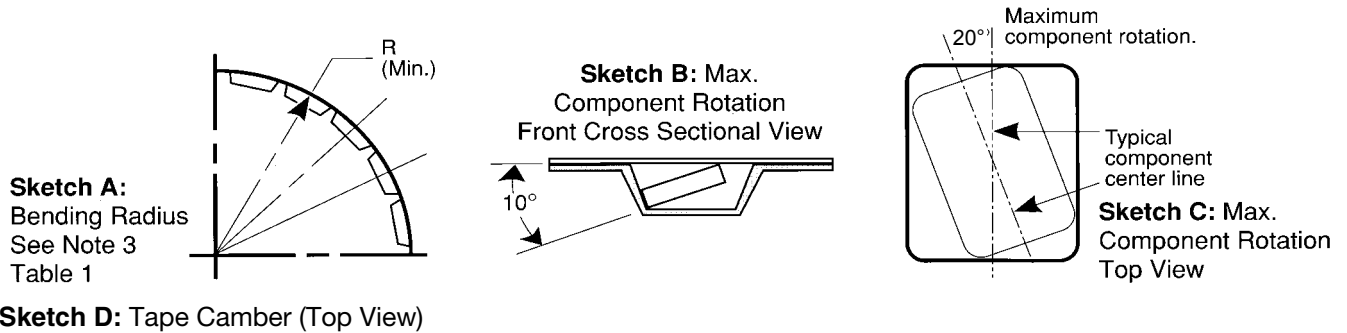
**Table 1 — EMBOSSED TAPE DIMENSIONS (Metric will govern)**

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

- B1 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.)

### 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	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)

**World Sales Headquarters**

KEMET Electronics Corporation  
P.O. Box 5928  
Greenville, SC 29606  
Phone: 864-963-6300

**Europe**

KEMET Electronics S.A.  
15bis Chemin des Mines  
1202 Geneva,  
Switzerland  
Phone: 41-22-715-0100

**Asia**

KEMET Electronics Marketing PTE Ltd.  
73 Bukit Timah Road  
#05-01 Rex House  
Singapore, 229832, Singapore  
Phone: 65-6386-1900

KEMET Electronics Asia Ltd.  
30 Canton Road, Room 1512  
SilverCord Tower II  
Tsimshatshui, Kowloon  
Hong Kong  
Phone: 852-2305-1168

KEMET reserves the right to modify minor details of internal and external construction at any time in the interest of product improvement. KEMET does not assume any responsibility for infringement that might result from the use of KEMET capacitors in potential circuit designs.