

KEMET CONDUCTIVE POLYMER CHIP CAPACITORS

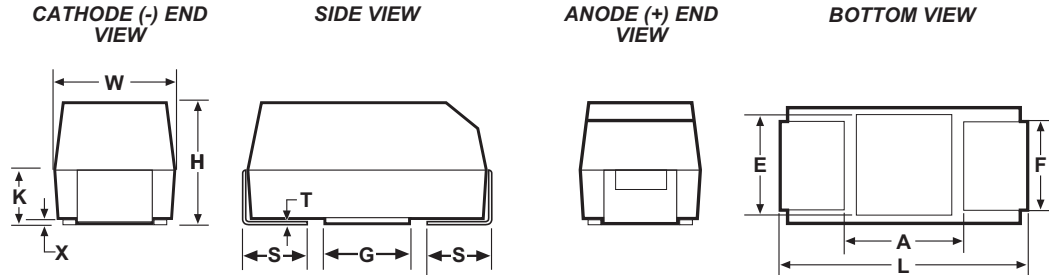
CHARGED™

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 ≤ 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 1000µF (±20%)
- Voltage 2V to 25V
- EIA Standard Case Sizes
- 100% Surge Current Tested
- Operating Temperature -55°C to +105°C
- Self Healing Mechanism
- RoHS Compliant & Leadfree Terminations (see www.kemet.com for lead transition)

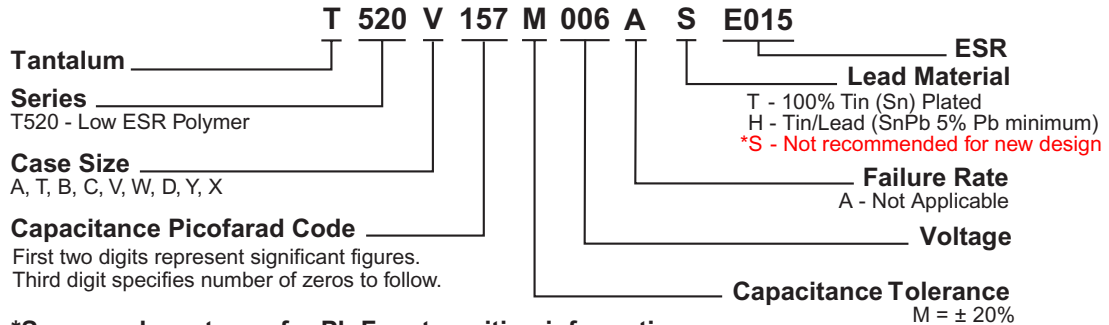
OUTLINE DRAWING



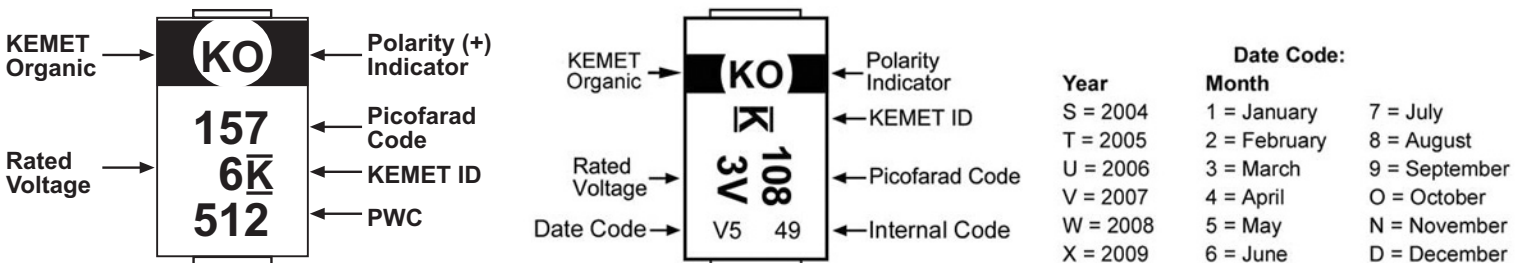
DIMENSIONS - MILLIMETERS

Case Size		L	W	H	K ± 0.20	F ± 0.1	S ± 0.3	X(Ref)	T(Ref)	A(Min)	G(ref)	E(ref)
KEMET	EIA											
A	3216-18	3.2 ± 0.2	1.6 ± 0.2	1.6 ± 0.2	0.9	1.2	0.8	0.10 ± 0.10	0.13	1.4	1.1	1.3
T	3528-12	3.5 ± 0.2	2.8 ± 0.2	1.2 max	0.3	2.2	0.8	0.05	0.13	2.1	1.8	2.2
B	3528-21	3.5 ± 0.2	2.8 ± 0.2	1.9 ± 0.2	0.9	2.2	0.8	0.10 ± 0.10	0.13	2.1	1.8	2.2
C	6032-28	6.0 ± 0.3	3.2 ± 0.3	2.5 ± 0.3	1.4	2.2	1.3	0.10 ± 0.10	0.13	3.1	2.8	2.4
U	6032-15	6.0 ± 0.3	3.2 ± 0.3	1.5 max	0.5	2.2	1.3	0.05	0.13	3.1	2.8	2.4
W	7343-15	7.3 ± 0.3	4.3 ± 0.3	1.5 max	0.6	2.4	1.3	0.05	0.13	3.8	3.5	3.5
V	7343-20	7.3 ± 0.3	4.3 ± 0.3	1.9 max	0.9	2.4	1.3	0.05	0.13	3.8	3.5	3.5
D	7343-31	7.3 ± 0.3	4.3 ± 0.3	2.8 ± 0.3	1.5	2.4	1.3	0.10 ± 0.10	0.13	3.8	3.5	3.5
Y	7343-40	7.3 ± 0.3	4.3 ± 0.3	4.0 max	1.9	2.4	1.3	0.10 ± 0.10	0.13	3.8	3.5	3.5
X	7343-43	7.3 ± 0.3	4.3 ± 0.3	4.0 ± 0.3	2.3	2.4	1.3	0.10 ± 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

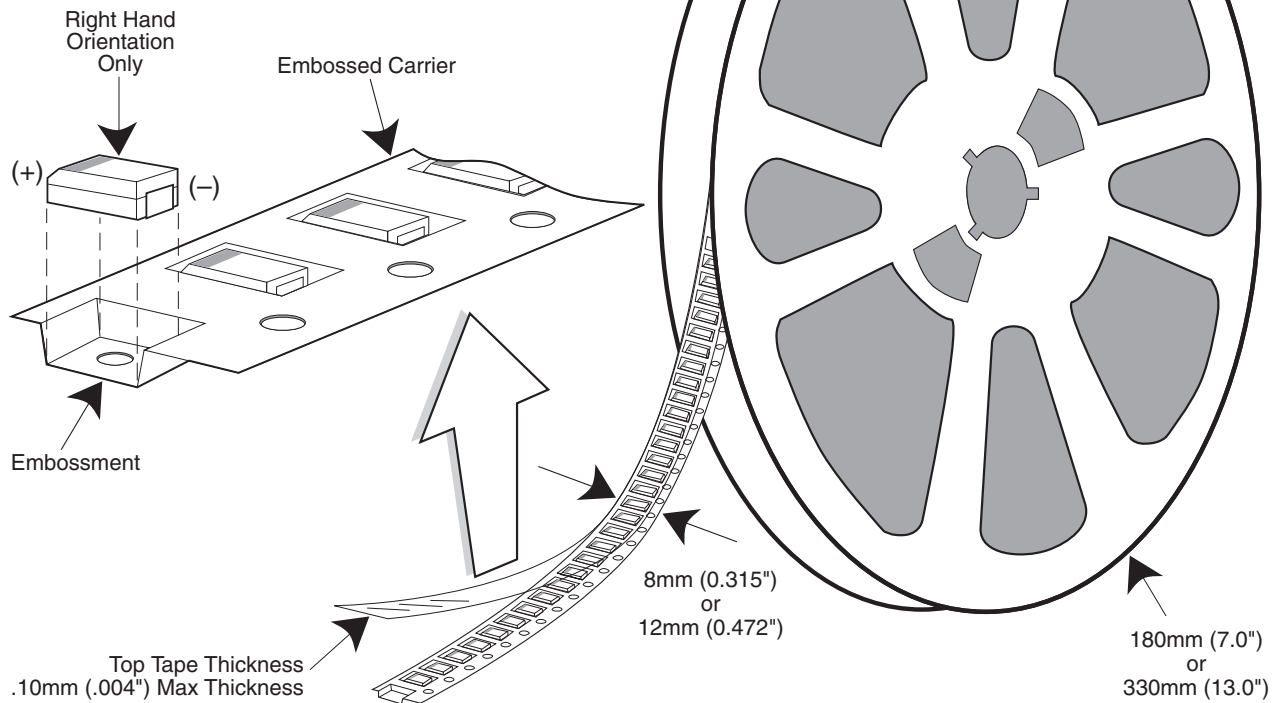
Capacitance μF	Case Size	KEMET Part Number	DC Leakage μA @ 25°C Max	DF% @ 25°C 120 Hz Max	ESR mΩ @ 25°C 100 kHz Max	Ripple Current Arms @ 100 kHz Max	
						w/ΔT=20°C @ -55°C to 85°C	w/ΔT= 2°C @ 105°C
2 Volt Rating @ 105°C							
470.0	V	T520V477M002A(1)E040	94	10	40	1.8	0.6
2.5 Volt Rating @ 105°C							
47.0	A	T520A476M2R5A(1)E090	12	8	90	0.9	0.3
56.0	T	T520T566M2R5A(1)E040	14	8	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	W	T520W337M2R5A(1)E040	83	10	40	1.7	0.5
330.0	V	T520V337M2R5A(1)E006	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
3 Volt Rating @ 105°C							
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
4 Volt Rating @ 105°C							
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)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

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 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 ₀ B ₀ K 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

- 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 A₀, B₀, and K₀ 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)



Стандарт Электрон Связь

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

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