KEMET Organic Capacitor (KO-CAP®)

8 < 8 4SP]QIV)PIGXVSP]XMG 'ETEGMXSV

Overview

The KEMET Organic Capacitor (KO-CAP) is a solid electrolytic capacitor with a conductive polymer cathode capable of delivering very low ESR and improved capacitance retention at high frequencies. KO-CAP combines the low ESR o QYPXMPE]IV GIVEQMG XLI LMKL GETEGMXERGI SJ EPYQMRYQ IPIGXVS surface mount package. Unlike liquid electrolyte-based capacitors, KO-CAP has a very long operational life and high r current capabilities.

The T52x/T530 Series provides the widest range of voltages, capacitance and case size options in the KO-CAP family suitable for general purpose DC applications for up to 48 volt DC voltage rails.

&IRI¤XW

- ESR values down to 5 mOhms
- Stable capacitance across temperature and voltage
- No aging effects
- High ripple handling

u:SPYQIXVMGEPP] IJ¤GMIRX

- High frequency capacitance retention
- 100% accelerated steady state aging
- 100% surge current tested
- Halogen-free epoxy/RoHS compliant

%TTPMGEXMSRW

Typical applications include DC/DC converters, audio/sound circuits (mobile phone and base stations, smart phones, M players), power supply inputs, portable electronics (notebook PCs, displays, SSDs, HDDs and USBs, digital cameras, navigation systems, WiFi modules), telecommunications, consumer electronics (analytical and test equipment, high sp servers), high voltage applications such as 12 V to 48 V power input rails, densely populated circuits with space restric microprocessor decoupling and high ripple current applications.

Environmental Compliance

- RoHS Compliant (6/6) according to Directive 2002/95/EC when ordered with 100% Sn, Ni-Pd-Au or non-magnetic 100% Sn solder
- Halogen-free
- Epoxy compliant with UL94 V-0

K-SIM

For a detailed analysis of specific part numbers, please visit ksim.kemet.com to access KEMET's K-SIM software. KEMET K-SIM is designed to simulate behavior of components with respect to frequency, ambient temperature, and DC bias levels.

Series Reference Selection

Ordering Information

T	520	V	157	M	006	A	T	E045	
Capacitor Class	Series	Case Size[1]	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Failure Rate/ Design	Termination Finish	ESR Code	Packaging (C-Spec)
T = Tantalum	520 = Polymer 521 = High Voltage 523 = Facedown Terminal 525 = 125°C Rated 527 = Facedown Terminal 529 = Substrate Terminal 530 = 125°C High Capacitance	A B C D H I J L M P Q T U V W X Y	First two digits represent signifcant fgures. Third digit specifes number of zeros.	M = ±20%	002 = 2 2R5 = 2.5 003 = 3 004 = 4 006 = 6.3 008 = 8 010 = 10 011 = 11 12R = 12.5 016 = 16 020 = 20 025 = 25 035 = 35 050 = 50 063 = 63 075 = 75	A = N/A	T = 100% Matte Tin (Sn) plated H*** = Tin/Lead (SnPb) solder coated (5% Pb minimum) P* = Ni-Pd-Au plated N = Non-magnetic 100% Tin (Sn) M = Non-magnetic (SnPb) A** = Ni - Au G = Gold Plated (contact KEMET for inquiries on gold fnish	E = ESR Last three digits specify ESR in mΩ (045 = 45mΩ)	Blank = 7" Reel 7280 = 13" Reel

[1] See dimension table for EIA codes
** P termination only available on select part numbers*
*** A termination only available on T529 part numbers*
**** H termination not available for T527/T529 part numbers*

Performance Characteristics

Item	Performance Characteristics
Operating Temperature	–55°C to 85°C/105°C/125°C (Refer to part number for maximum temperature rating)
Rated Capacitance Range	4.7 – 1,500 µF at 120 Hz/25°C
Capacitance Tolerance	M Tolerance (20%)
Rated Voltage Range	2 – 75 V
DF (120 Hz)	Refer to Part Number Electrical Specifcation Table
ESR (100 kHz)	Refer to Part Number Electrical Specifcation Table
Leakage Current	Refer to Part Number Electrical Specifcation Table

Qualification

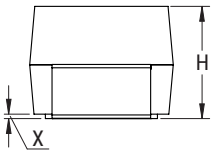
Test	Condition	Characteristics	
Endurance	Temperature: 85°C, 105°C, 125°C ** Voltage: 1.0 Rated Voltage 2/3 Rated Voltage for 125°C rating PN Time: 2,000 Hours 1,000 Hours for T527/T529 Series	Δ C/C	

Dimensions – Millimeters (Inches)

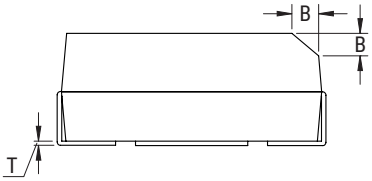
Metric will govern

T520/T521/T525/T530

CATHODE (-) END VIEW

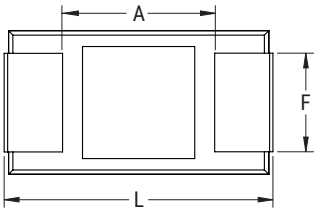


SIDE VIEW



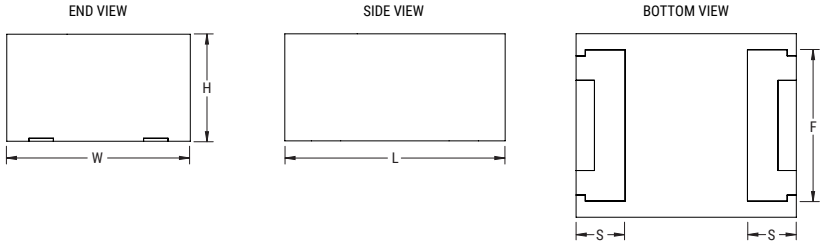
ANODE (+) END VIEW

BOTTOM VIEW



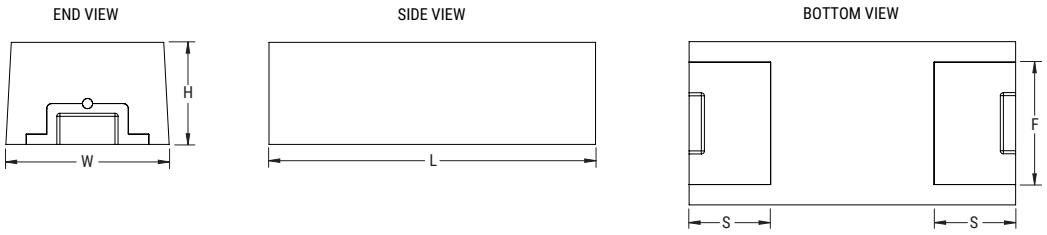
Dimensions – Millimeters cont'd

T523



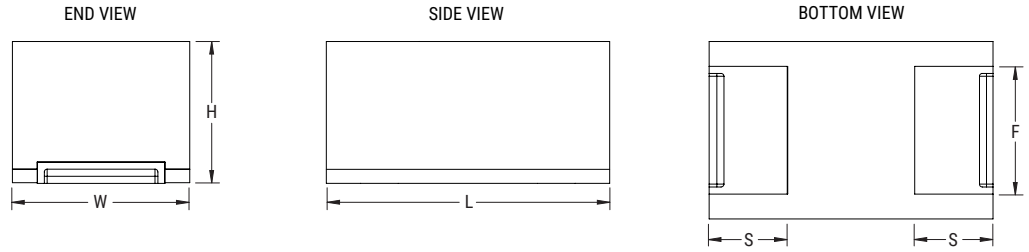
KEMET	EIA	L	W	H	F ±0.1 (±0.004)	S ±0.3 (±0.012)	Total Weight (mg)
W	7343-15	7.3±0.3 (0.287±0.012)	4.3±0.3 (0.169±0.012)	1.4±0.1 (0.055±0.004)	2.4 (0.094)	1.3 (0.051)	223
J	7360-15	7.3±0.3 (0.287±0.012)	6.0±0.3 (0.236±0.012)	1.4±0.1 (0.055±0.004)	4.45 (0.175)	1.6 (0.063)	263
V	7343-20	7.3±0.3 (0.287±0.012)	4.3±0.3 (0.169±0.012)	1.9±0.1 (0.075±0.004)	2.4 (0.094)	1.3 (0.051)	274
H	7360-20	7.3±0.3 (0.287±0.012)	6.0±0.3 (0.236±0.012)	1.9±0.1 (0.075±0.004)	4.45 (0.175)	1.6 (0.063)	385

T527



Case Size		Component Dimensions					Weight
KEMET	EIA	L	W	H	F	S	(mg)
I	3216–10	3.2±0.2	1.6±0.2	0.9±0.1	1.2±0.1	0.8±0.2	70

T529



Case Size		Component Dimensions					Weight
KEMET	EIA	L	W	H	F	S	

Table 1 – Ratings & Part Number Reference

Rated Voltage	Rated Capacitance	Case Code/ Case Size	KEMET Part Number	DC Leakage	DF	ESR	Maximum Allowable Ripple Current	MSL	Maximum Operating Temp
VDC at 105°C	µF	KEMET/EIA	(See below for part options)	µA at 25°C Maximum/5 Minutes	% at 25°C 120 Hz Maximum	mΩ at 25°C 100 kHz Maximum	mA at +45°C 100 kHz	Reflow Temp ≤ 260°C	°C
2	470	V/7343-19	T520V477M002A(1)E040	94	10	40	2200	3	105
2.5	47	A/3216-18	T520A476M2R5A(1)E090	11.75	8	90	1100	3	105
2.5	68	A/3216-18	T520A686M2R5A(1)E070	17	8	70	1300	3	105
2.5	68	A/3216-18	T520A686M2R5A(1)E080	17	8	80	1200	3	105
2.5	100	T/3528-12	T520T107M2R5A(1)E040	25	8	40	1600	3	105
2.5	100	T/3528-12	T520T107M2R5A(1)E070	25	8	70	1200	3	105
2.5	100	T/3528-12	T525T107M2R5A(1)E080	25	10	80	1100	3	125
2.5	100	B/3528-21	T520B107M2R5A(1)E025	25	8	25	2300	3	105
2.5	100	B/3528-21	T520B107M2R5A(1)E035	25	8	35	1900	3	105
2.5	100	B/3528-21	T520B107M2R5A(1)E040	25	8	40	1800	3	105
2.5	100	B/3528-21	T520B107M2R5A(1)E070	25	8	70	1300	3	105
2.5	150	U/6032-15	T520U157M2R5A(1)E055	37.5	8	55	1600	3	105
2.5	220	A/3216-18	T520A227M2R5A(1)E025	55	8	25	1732	3	105
2.5	220	A/3216-18	T520A227M2R5A(1)E035	55	8	35	1500	3	105
2.5	220	B/3528-21	T520B227M2R5A(1)E015	55	8	15	2900	3	105
2.5	220	B/3528-21	T520B227M2R5A(1)E018	55	8	18	2700	3	105
2.5	220	B/3528-21	T520B227M2R5A(1)E021	55	8	21	2500	3	105
2.5	220	B/3528-21	T520B227M2R5A(1)E025	55	8	25	2300	3	105
2.5	220	B/3528-21	T520B227M2R5A(1)E030	55	8	30	2100	3	105
2.5	220	B/3528-21	T520B227M2R5A(1)E035	55	8	35	1900	3	105
2.5	220	B/3528-21	T520B227M2R5A(1)E055	55	8	55	1500	3	105
2.5	220	B/3528-21	T520B227M2R5A(1)E070	55	8	70	1300	3	105
2.5	220	T/3528-12	T520T227M2R5A(1)E070	55	10	70	1200	3	105
2.5	220	U/6032-15	T520U227M2R5A(1)E055	55	8	55	1600	3	105
2.5	220	C/6032-28	T520C227M2R5A(1)E025	55	8	25	2600	3	105
2.5	220	C/6032-28	T520C227M2R5A(1)E045	55	8	45	1900	3	105
2.5	220	W/7343-15	T520W227M2R5A(1)E025	55	10	25	2700	3	105
2.5	220	V/7343-19	T520V227M2R5A(1)E006	55	10	6	5600	3	105
2.5	220	V/7343-19	T520V227M2R5A(1)E007	55	10	7	5200	3	105
2.5	220	V/7343-19	T520V227M2R5A(1)E009	55	10	9	4600	3	105
2.5	220	V/7343-19	T520V227M2R5A(1)E012	55	10	12	3900	3	105
2.5	220	V/7343-19	T520V227M2R5A(1)E015	55	10	15	3500	3	105
2.5	220	V/7343-19	T520V227M2R5A(1)E025	55	10	25	2700	3	105
2.5	220	V/7343-19	T520V227M2R5A(1)E045	55	10	45	2000	3	105
2.5	220	D/7343-31	T520D227M2R5A(1)E007	55	10	7	5700	3	105
2.5	220	D/7343-31	T520D227M2R5A(1)E040	55	10	40	2400	3	105
2.5	330	B/3528-21	T520B337M2R5A(1)E009	82.5	8	9	3073	3	105
2.5	330	B/3528-21	T520B337M2R5A(1)E012	83	8	12	2700	3	105
2.5	330	B/3528-21	T520B337M2R5A(1)E015	82.5	8	15	2900	3	105
2.5	330	B/3528-21	T520B337M2R5A(1)E018	82.5	8	18	2700	3	105
2.5	330	B/3528-21	T520B337M2R5A(1)E035	82.5	8	35	1900	3	105
2.5	330	B/3528-21	T520B337M2R5A(1)E045	82.5	8	45	1700	3	105
2.5	330	B/3528-21	T520B337M2R5A(1)E070	82.5	8	70	1300	3	105
2.5	330	C/6032-28	T520C337M2R5A(1)E015	82.5	8	15	3300	3	105
2.5	330	C/6032-28	T520C337M2R5A(1)E018	82.5	8	18	3000	3	105
2.5	330	C/6032-28	T520C337M2R5A(1)E025	82.5	8	25	2600	3	105
VDC at 105°C	µF	KEMET/EIA	(See below for part options)	µA at 25°C Maximum/5 Minutes	% at 25°C 120 Hz Maximum	mΩ at 25°C 100 kHz Maximum	mA at +45°C 100 kHz	Reflow Temp ≤ 260°C	°C
Rated Voltage	Rated Capacitance	Case Code/ Case Size	KEMET Part Number	DC Leakage	DF	ESR	Maximum Allowable Ripple Current	MSL	Maximum Operating Temp

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.
Higher voltage ratings and tighter ESR may be substituted within the same size at KEMET's option. Voltage substitutions will be marked with the higher voltage rating. Substitutions can include better than series.
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*** Part numbers are not recommended for new designs. Please contact your KEMET representative for a replacement part.*
Refer to Ordering Information for additional detail.

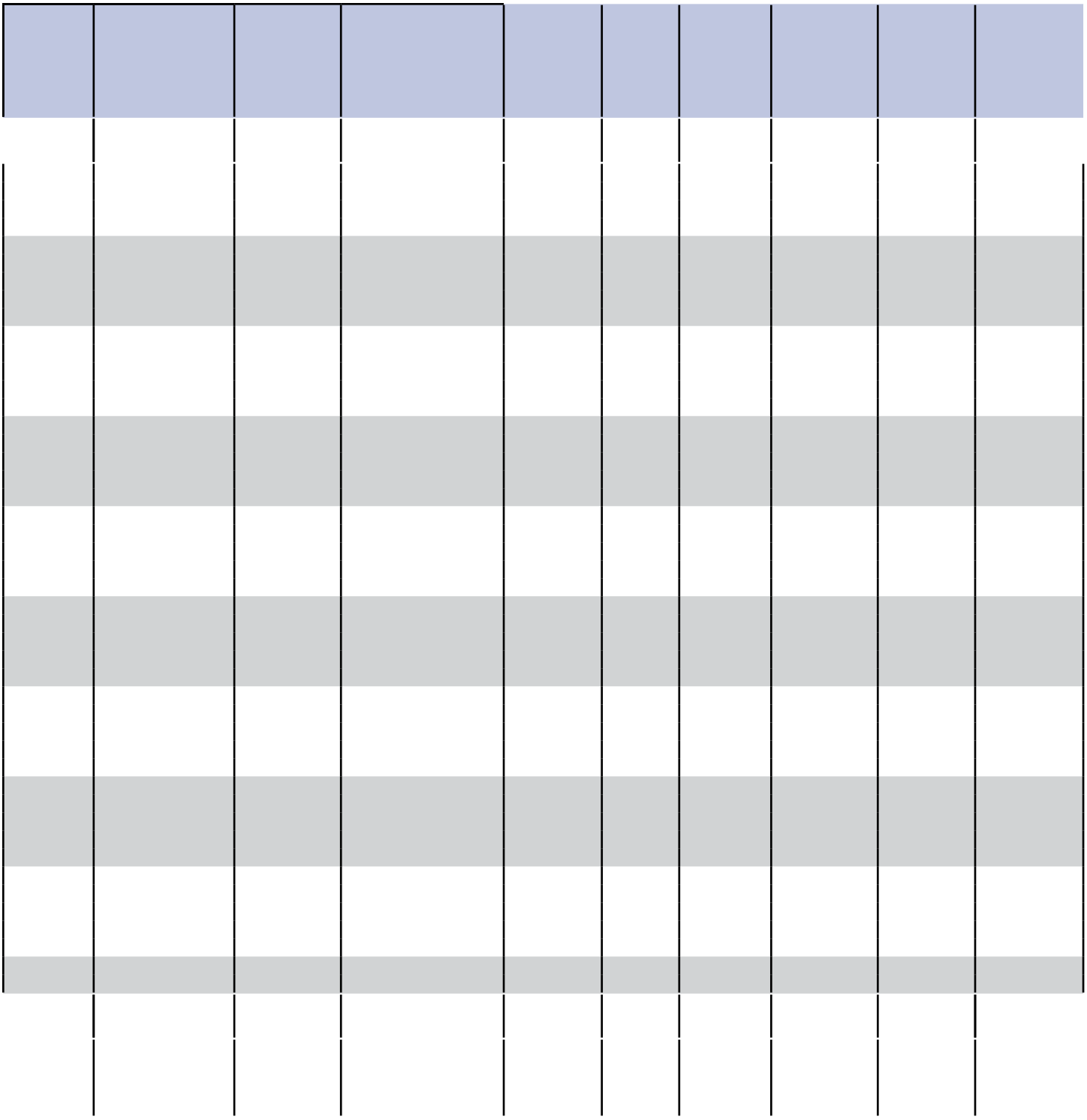

Table 1 – Ratings & Part Number Reference cont'd

Rated Voltage	Rated Capacitance	Case Code/ Case Size	KEMET Part Number	DC Leakage	DF	ESR	Maximum Allowable Ripple Current	MSL	Maximum Operating Temp
VDC at 105°C	µF	KEMET/EIA	(See below for part options)	µA at 25°C Maximum/5 Minutes	% at 25°C 120 Hz Maximum	mΩ at 25°C 100 kHz Maximum	mA at +45°C 100 kHz	Reflow Temp ≤ 260°C	°C
2.5	680	X/7343-43	T530X687M2R5A(1)E006	170	8	6	6700	3	125
2.5	1000	D/7343-31	T520D108M2R5A(1)E4R5	250	10	4.5	7100	3	105
2.5	1000	D/7343-31	T520D108M2R5A(1)E006	250	10	6	6100	3	105
2.5	1000	D/7343-31	T520D108M2R5A(1)E007	250	10	7	5700	3	105
2.5	1000	D/7343-31	T520D108M2R5A(1)E009	250	10	9	5000	3	105
2.5	1000	D/7343-31	T520D108M2R5A(1)E010	250	10	10	4700	3	105
2.5	1000	D/7343-31	T520D108M2R5A(1)E015	250	10	15	3900	3	105
2.5	1000	D/7343-31	T520D108M2R5A(1)E030	250	10	30	2700	3	105
2.5	1000	Y/7343-40	T530Y108M2R5A(1)E005	250	8	5	7300	3	125
2.5	1000	Y/7343-40	T530Y108M2R5A(1)E006	250	8	6	6600	3	125
2.5	1000	Y/7343-40	T520Y108M2R5A(1)E010	250	10	10	4900	3	105
2.5	1000	Y/7343-40	T520Y108M2R5A(1)E015	250	10	15	4000	3	105
2.5	1000	Y/7343-40	T520Y108M2R5A(1)E025	250	10	25	3100	3	105
2.5	1000	X/7343-43	T530X108M2R5A(1)E004	250	8	4	8200	3	125
2.5	1000	X/7343-43	T530X108M2R5A(1)E005	250	8	5	7300	3	125
2.5	1000	X/7343-43	T530X108M2R5A(1)E006	250	8	6	6700	3	125
2.5	1000	X/7343-43	T520X108M2R5A(1)E010	250	10	10	5000	3	105
2.5	1500	X/7343-43	T530X158M2R5A(1)E005	375	8	5	7300	3	125
2.5	1500	X/7343-43	T520X158M2R5A(1)E015	375	10	15	4100	3	105
3	100	B/3528-21	T525B107M003A(1)E080	30	8	80	1300	3	125
3	100	B/3528-21	T520B107M003A(1)E025	30	8	25	2300	3	105
3	100	B/3528-21	T520B107M003A(1)E035	30	8	35	1900	3	105
3	100	B/3528-21	T520B107M003A(1)E040	30	8	40	1800	3	105
3	100	B/3528-21	T520B107M003A(1)E070	30	8	70	1300	3	105
3	150	B/3528-21	T520B157M003A(1)E025	45	8	25	2300	3	105
3	150	B/3528-21	T520B157M003A(1)E035	45	8	35	1900	3	105
3	150	B/3528-21	T520B157M003A(1)E040	45	8	40	1800	3	105
3	150	B/3528-21	T520B157M003A(1)E070	45	8	70	1300	3	105
3	150	B/3528-21	T525B157M003A(1)E080	45	8	80	1300	3	125
3	330	V/7343-19	T520V337M003A(1)E009	99	10	9	4600	3	105
3	330	V/7343-19	T520V337M003A(1)E012	99	10	12	3900	3	105
3	330	V/7343-19	T520V337M003A(1)E015	99	10	15	3500	3	105
3	330	V/7343-19	T520V337M003A(1)E025	99	10	25	2700	3	105
3	330	D/7343-31	T525D337M003A(1)E025	99	10	25	3000	3	125
3	470	D/7343-31	T530D477M003A(1)E010	141	8	10	5000	3	125
3	470	D/7343-31	T525D477M003A(1)E025	141	10	25	3000	3	125
3	680	D/7343-31	T530D687M003A(1)E010	204	8	10	5000	3	125
3	680	D/7343-31	T520D687M003A(1)E015	204	10	15	3900	3	105
3	680	D/7343-31	T525D687M003A(1)E025	204	10	25	3000	3	125
3	680	D/7343-31	T520D687M003A(1)E040	204	10	40	2400	3	105
3	1000	X/7343-43	T530X108M003A(1)E010	300	8	10	5200	3	125
3	1000	X/7343-43	T520X108M003A(1)E015	300	10	15	4100	3	105
3	1000	X/7343-43	T520X108M003A(1)E030	300	10	30	2900	3	105
3	1500	X/7343-43	T530X158M003A(1)E008	450	8	8	5800	3	125
4	15	T/3528-12	T520T156M004A(1)E100	6	8	100	1000	3	105
4	33	A/3216-18	T520A336M004A(1)E070	13.2	8	70	1300	3	105
VDC at 105°C	µF	KEMET/EIA	(See below for part options)	µA at 25°C Maximum/5 Minutes	% at 25°C 120 Hz Maximum	mΩ at 25°C 100 kHz Maximum	mA at +45°C 100 kHz	Reflow Temp ≤ 260°C	°C
Rated Voltage	Rated Capacitance	Case Code/ Case Size	KEMET Part Number	DC Leakage	DF	ESR	Maximum Allowable Ripple Current	MSL	Maximum Operating Temp

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.
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*** Part numbers are not recommended for new designs. Please contact your KEMET representative for a replacement part.*
Refer to Ordering Information for additional detail.

Table 1 – Ratings & Part Number Reference cont'd

Rated Voltage	Rated Capacitance	Case Code/ Case Size	KEMET Part Number	DC Leakage	DF	ESR	Maximum Allowable Ripple Current	MSL	Maximum Operating Temp
VDC at 105°C	µF	KEMET/EIA	(See below for part options)	µA at 25°C Maximum/5 Minutes	% at 25°C 120 Hz Maximum	mΩ at 25°C 100 kHz Maximum	mA at +45°C 100 kHz	Reflow Temp ≤ 260°C	°C
4	33	A/3216-18	T520A336M004A(1)E080	13.2	8	80	1200	3	105
4	47	A/3216-18	T520A476M004A(1)E070	18.8	8	70	1300	3	105
4	47	A/3216-18	T520A476M004A(1)E080	18.8	8	80	1200	3	105
4	47	T/3528-12	T520T476M004A(1)E070	18.8	8	70	1200	3	105
4	68	A/3216-18	T520A686M004A(1)E180	27	8	180	800	3	105
4	68	T/3528-12	T520T686M004A(1)E070	27.2	8	70	1200	3	105
4	68	B/3528-21	T520B686M004A(1)E025	27.2	8	25	2300	3	105
4	68	B/3528-21	T520B686M004A(1)E035	27.2	8	35	1900	3	105
4	68	B/3528-21	T520B686M004A(1)E040	27.2	8	40	1800	3	105
4	68	B/3528-21	T520B686M004A(1)E070	27.2	8	70	1300	3	105
4	68	B/3528-21	T525B686M004A(1)E080	27.2	8	80	1300	3	125
4	68	U/6032-15	T520U686M004A(1)E055	27.2	8	55	1600	3	105
4	100	I/3216-10	T527I107M004ATE200	40	8	200	775	3	105
4	100	A/3216-18	T520A107M004A(1)E150	40	8	150	900	3	105
4	100	A/3216-18	T520A107M004A(1)E200	40	8	200	700	3	105
4	100	T/3528-12	T520T107M004A(1)E070	40	8	70	1200	3	105
4	100	T/3528-12	T520T107M004A(1)E150	40	8	150	800	3	105
4	100	B/3528-21	T520B107M004A(1)E025	40	8	25	2300	3	105
4	100	B/3528-21	T520B107M004A(1)E035	40	8	35	1900	3	105
4	100	B/3528-21	T520B107M004A(1)E040	40	8	40	1800	3	105
4	100	B/3528-21	T520B107M004A(1)E070	40	8	70	1300	3	105
4	100	B/3528-21	T525B107M004A(1)E080	40	8	80	1300	3	125
4	100	U/6032-15	T520U107M004A(1)E055	40	8	55	1600	3	105
4	150	B/3528-21	T520B157M004A(1)E015	60	8	15	2900	3	105
4	150	B/3528-21	T520B157M004A(1)E018	60	8	18	2700	3	105
4	150	B/3528-21	T520B157M004A(1)E025	60	8	25	2300	3	105
4	150	B/3528-21	T520B157M004A(1)E030	60	8	30	2100	3	105
4	150	B/3528-21	T520B157M004A(1)E035	60	8	35	1900	3	105
4	150	B/3528-21	T520B157M004A(1)E040	60	8	40	1800	3	105
4	150	B/3528-21	T520B157M004A(1)E070	60	8	70	1300	3	105
4	150	U/6032-15	T520U157M004A(1)E055	60	8	55	1600	3	105
4	150	C/6032-28	T520C157M004A(1)E015	60	8	15	3300	3	105
4	150	C/6032-28	T520C157M004A(1)E025	60	8	25	2600	3	105
4	150	C/6032-28	T520C157M004A(1)E045	60	8	45	1900	3	105
4	150	C/6032-28	T520C157M004A(1)E100	60	8	100	1300	3	105
4	150	V/7343-19	T520V157M004A(1)E007	60	10	7	5200	3	105
4	150	V/7343-19	T520V157M004A(1)E009	60	10	9	4600	3	105
4	150	V/7343-19	T520V157M004A(1)E012	60	10	12	3900	3	105
4	150	V/7343-19	T520V157M004A(1)E015	60	10	15	3500	3	105
4	150	V/7343-19	T520V157M004A(1)E025	60	10	25	2700	3	105
4	150	D/7343-31	T520D157M004A(1)E007	60	10	7	5700	3	105
4	220	B/3528-21	T520B227M004A(1)E035	88	8	35	1900	3	105
4	220	B/3528-21	T520B227M004A(1)E045	88	8	45	1700	3	105
4	220	B/3528-21	T520B227M004A(1)E070	88	8	70	1300	3	105
4	220	C/6032-28	T520C227M004A(1)E015	88	8	15	3300	3	105
4	220	C/6032-28	T520C227M004A(1)E018	88	8	18	3000	3	105
VDC at 105°C	µF	KEMET/EIA	(See below for part options)	µA at 25°C Maximum/5 Minutes	% at 25°C 120 Hz Maximum	mΩ at 25°C 100 kHz Maximum	mA at +45°C 100 kHz	Reflow Temp ≤ 260°C	°C
Rated Voltage	Rated Capacitance	Case Code/ Case Size	KEMET Part Number	DC Leakage	DF	ESR	Maximum Allowable Ripple Current	MSL	Maximum Operating Temp

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.
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*** Part numbers are not recommended for new designs. Please contact your KEMET representative for a replacement part.*
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Table 1 – Ratings & Part Number Reference cont'd

Table 1 – Ratings & Part Number Reference cont'd

Rated Voltage	Rated Capacitance	Case Code/ Case Size	KEMET Part Number	DC Leakage	DF	ESR	Maximum Allowable Ripple Current	MSL	Maximum Operating Temp
VDC at 105°C	µF	KEMET/EIA	(See below for part options)	µA at 25°C Maximum/5 Minutes	% at 25°C 120 Hz Maximum	mΩ at 25°C 100 kHz Maximum	mA at +45°C 100 kHz	Reflow Temp ≤ 260°C	°C
6.3	47	B/3528-21	T525B476M006A(1)E070	29.61	8	70	1300	3	125
6.3	47	B/3528-21	T525B476M006A(1)E080	29.61	8	80	1300	3	125
6.3	68	A/3216-18	T520A686M006A(1)E150	42.84	8	150	900	3	105
6.3	68	T/3528-12	T520T686M006A(1)E070	42.84	8	70	1200	3	105
6.3	68	T/3528-12	T520T686M006A(1)E150	42.84	8	150	800	3	105
6.3	68	B/3528-21	T520B686M006A(1)E025	42.84	8	25	2300	3	105
6.3	68	B/3528-21	T520B686M006A(1)E035	42.84	8	35	1900	3	105
6.3	68	B/3528-21	T520B686M006A(1)E040	42.84	8	40	1800	3	105
6.3	68	B/3528-21	T520B686M006A(1)E070	42.84	8	70	1300	3	105
6.3	68	B/3528-21	T525B686M006A(1)E080	42.84	8	80	1300	3	125
6.3	68	U/6032-15	T520U686M006A(1)E055	42.84	8	55	1600	3	105
6.3	68	U/6032-15	T520U686M006A(1)E070	42.84	8	70	1400	3	105
6.3	68	C/6032-28	T520C686M006A(1)E100	42.84	8	100	1300	3	105
6.3	100	I/3216-10	T527I107M006ATE200	63.0	8	200	775	3	105
6.3	100	I/3216-10	T527I107M006ATE100	63.0	8	100	775	3	105
6.3	100	I/3216-10	T527I107M006ATE070	63.0	8	70	1134	3	105
6.3	100	A/3216-18	T520A107M006ATE070	63	8	70	1035	3	105
6.3	100	A/3216-18							

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.
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Table 1 – Ratings & Part Number Reference cont'd

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.
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Table 1 – Ratings & Part Number Reference cont'd

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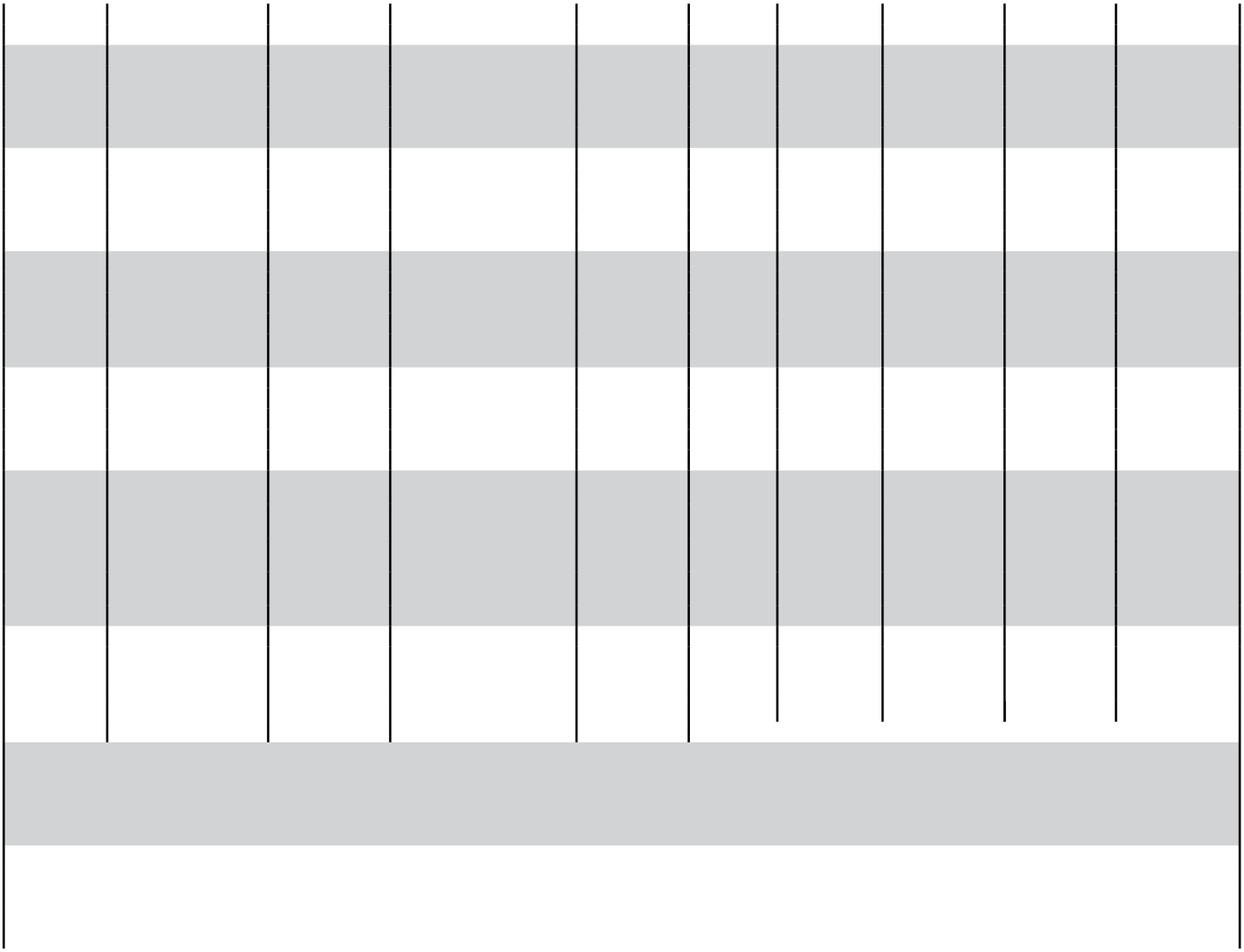
(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.

Table 1 – Ratings & Part Number Reference cont'd

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.



Rated Voltage	Rated Capacitance	Case Code/ Case Size	KEMET Part Number	DC Leakage	DF	ESR	Maximum Allowable Ripple Current	MSL	Maximum Operating Temp
VDC at 105°C	µF	KEMET/EIA	(See below for part options)	µA at 25°C Maximum/5 Minutes	% at 25°C 120 Hz Maximum	mΩ at 25°C 100 kHz Maximum	mA at +45°C 100 kHz	Reflow Temp ≤ 260°C	°C
35	6.8	B/3528-21	T521B685M035A(1)E200	23.8	8	200	800	3	105
35	10	B/3528-21	T521B106M035A(1)E150	35	8	150	900	3	105
35	10	B/3528-21	T521B106M035A(1)E200	35	8	200	800	3	105
35	10	" V/7343-19"	T521V106M035A(1)E120	35	10	120	1200	3	125
35	15	" V/7343-19"	T521V156M035A(1)E100	52.5	10	100	1400	3	125
35	15	" V/7343-19"	T521V156M035A(1)E125	52.5	10	125	1200	3	125
35	22	D/7343-31	T521D226M035A(1)E040	77	10	40	2400	3	125
35	22	D/7343-31	T521D226M035A(1)E060	77	10	60	1900	3	125
35	33	D/7343-31	T521D336M035A(1)E065	115.5	10	65	1900	3	125
35	47	X/7343-43	T521X476M035A(1)E030	164.5	10	30	2900	3	125
35	47	X/7343-43	T521X476M035A(1)E070	164.5	10	70	1900	3	125
50	0.68	B/3528-21	T521B684M050A(1)E200	3.4	8	200	800	3	105
50	1	B/3528-21	T521B105M050A(1)E200	5	8	200	800	3	105
50	1.5	B/3528-21	T521B155M050A(1)E200	7.5	8	200	800	3	105
50	2.2	B/3528-21	T521B225M050A(1)E200	11	8	200	800	3	105
50	5.6	D/7343-31	T521D565M050A(1)E070	28	10	70	1800	3	125
50	5.6	D/7343-31	T521D565M050A(1)E090	28	10	90	1600	3	125
50	5.6	V/7343-19	T521V565M050A(1)E070	28	10	70	1800	3	125
50	5.6	V/7343-19	T521V565M050A(1)E090	28	10	90	1600	3	125
50	6.8	D/7343-31	T521D685M050A(1)E070	34	10	70	1800	3	125
50	6.8	D/7343-31	T521D685M050A(1)E090	34	10	90	1600	3	125
50	6.8	V/7343-19	T521V685M050A(1)E070	34	10	70	1800	3	125
50	6.8	V/7343-19	T521V685M050A(1)E090	34	10	90	1600	3	125
50	10	D/7343-31	T521D106M050A(1)E090	50	10	90	1600	3	125
50	10	D/7343-31	T521D106M050A(1)E120	50	10	120	1369	3	125
50	10	V/7343-19	T521V106M050A(1)E090	50	10	90	1600	3	125
50	18	D/7343-31	T521D186M050A(1)E090		3	10	12V/50		

Table 1 – Ratings & Part Number Reference cont'd

Rated Voltage	Rated Capacitance	Case Code/ Case							

(1) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, H = Standard Solder coated (SnPb 5% Pb minimum), N = Non-Magnetic 100% Tin (Sn), M = Non-Magnetic (SnPb). Refer to Ordering Information for additional detail.
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Derating Guidelines

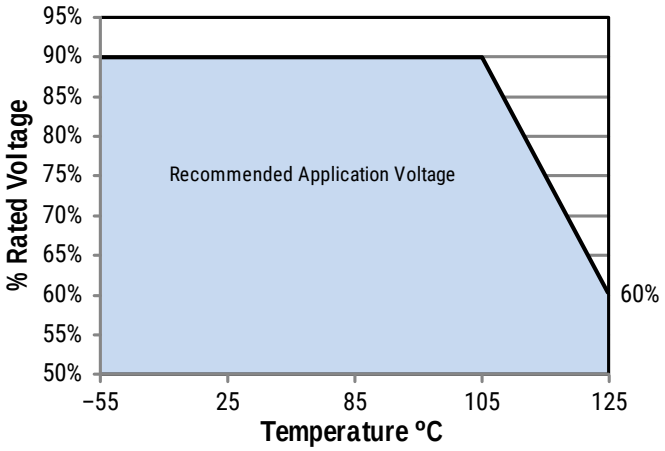


Table 2 – Land Dimensions/Courtyard

T520/T521/T523/T525/T530

Soldering Process

KEMET's families of surface mount capacitors are compatible with wave (single or dual), convection, IR, or vapor phase reflow techniques. Preheating of these components is recommended to avoid extreme thermal stress. KEMET's recommended profile conditions for convection and IR reflow reflect the profile conditions of the IPC/J–STD–020D standard for moisture sensitivity testing. The devices can safely withstand a maximum of three reflow passes at these conditions.

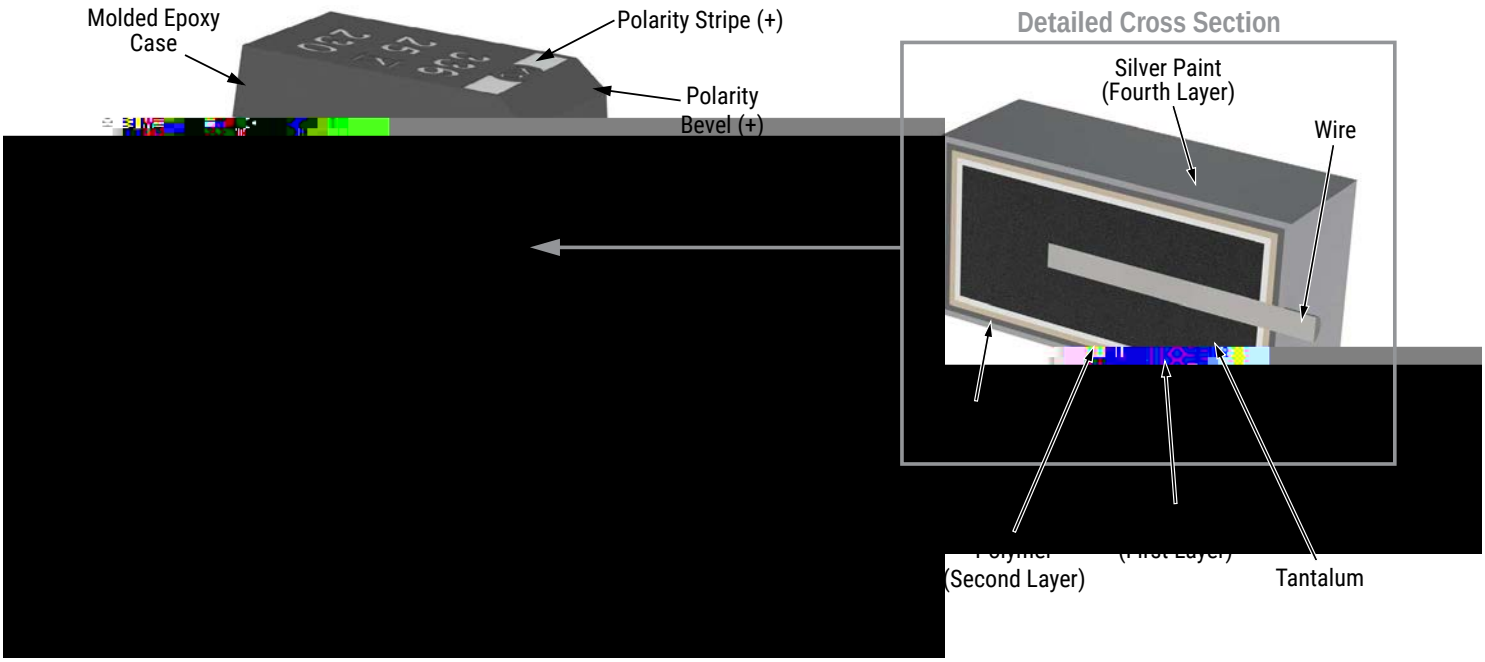
Please note that although the X/7343–43 case size can withstand wave soldering, the tall profile (4.3 mm maximum) dictates care in wave process development.

Hand soldering should be performed with care due to the difficulty in process control. If performed, care should be taken to avoid contact of the soldering iron to the molded case. The iron should be used to heat the solder pad, applying solder between the pad and the termination, until reflow occurs. Once reflow occurs, the iron should be removed immediately. "Wiping" the edges of a chip and heating the top surface is not recommended.

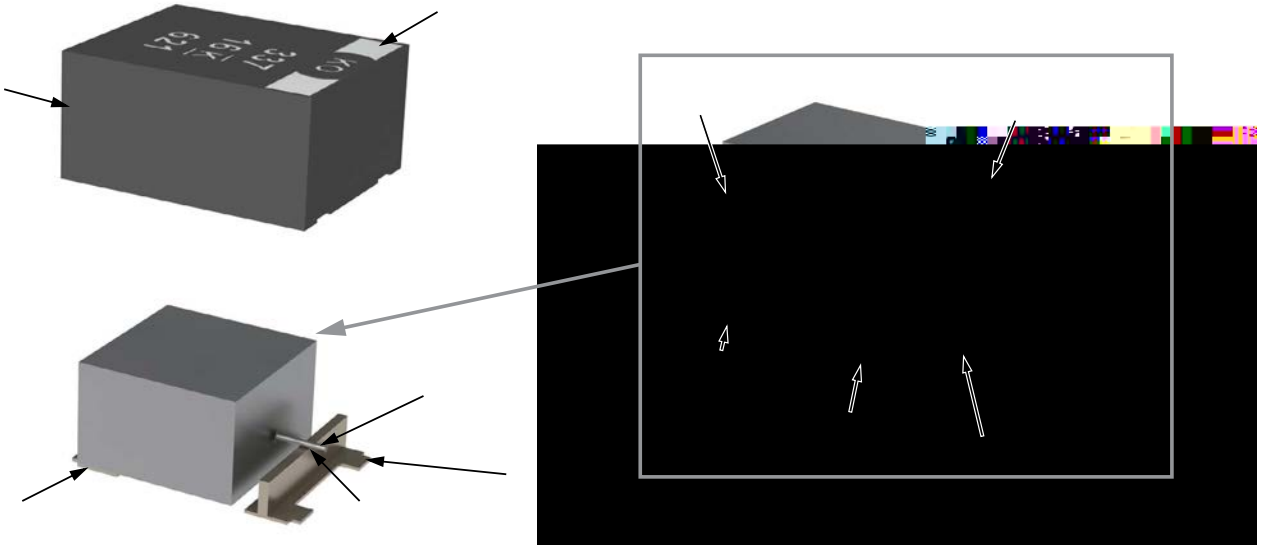
Profile Feature	SnPb Assembly	Pb-Free Assembly
Preheat/Soak		
Temperature Minimum (T_{Smin})	100°C	150°C
Temperature Maximum (T_{Smax})	150°C	200°C
Time (t_s) from T_{smin} to T_{smax})	60 – 120 seconds	60 – 120 seconds
Ramp-up Rate (T_L to T_P)	3°C/seconds maximum	3°C/seconds maximum
Liquidous Temperature (T_L)	183°C	217°C
Time Above Liquidous (t_L)	60 – 150 seconds	60 – 150 seconds
Peak Temperature (T_P)	220°C* 235°C**	250°C* 260°C**
Time within 5°C of Maximum Peak Temperature (t_p)	20 seconds maximum	30 seconds maximum
Ramp-down Rate (T_p to T		

Construction

T520/T521/T525/T530

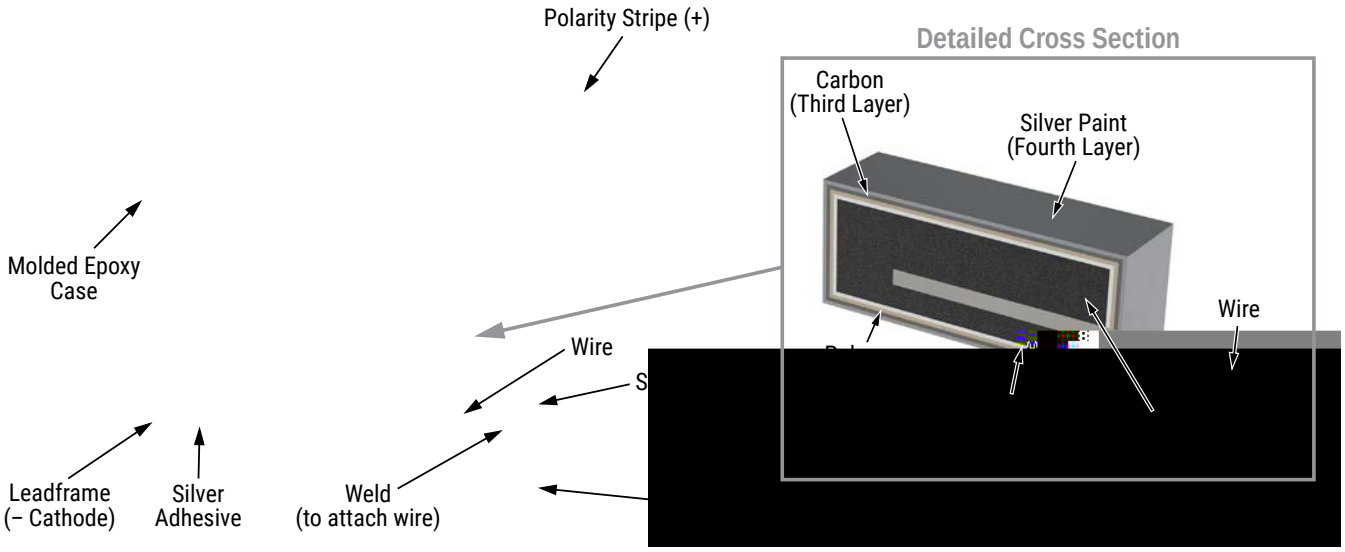


T523

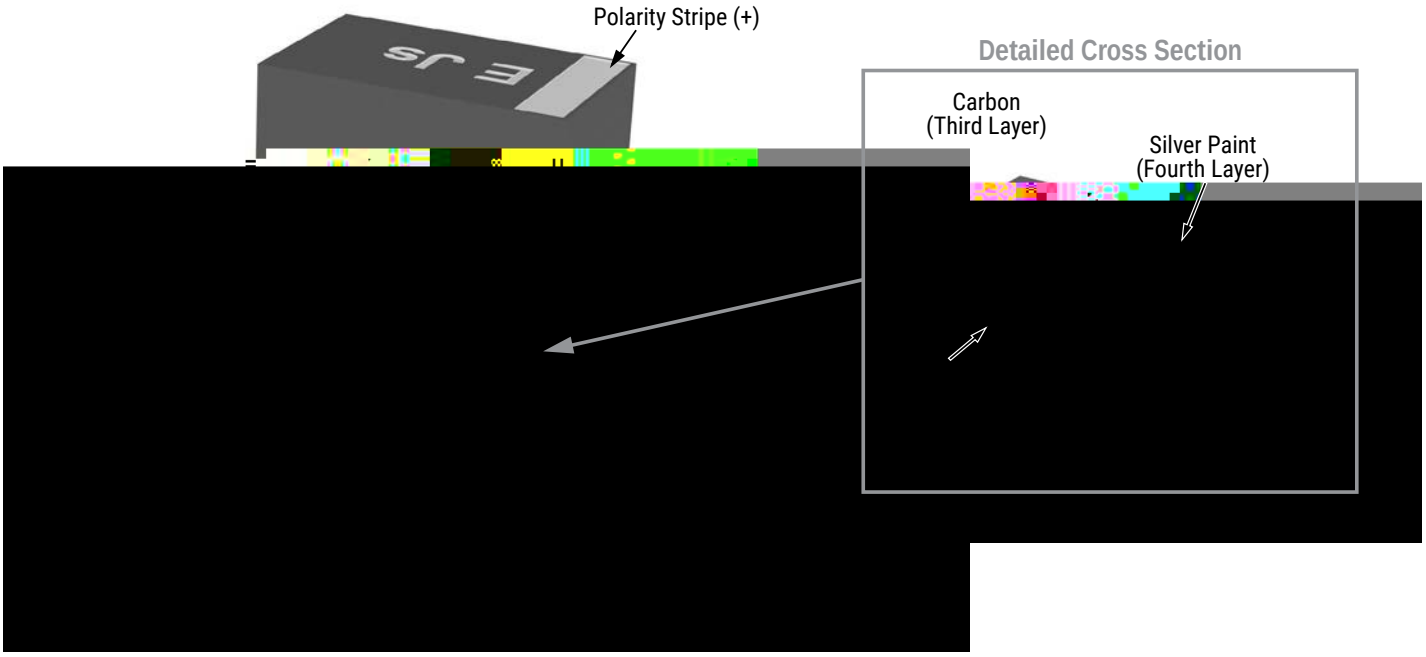


Construction cont'd

T527

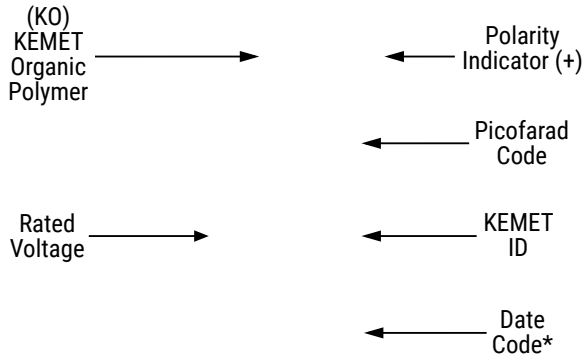


T529



Capacitor Marking

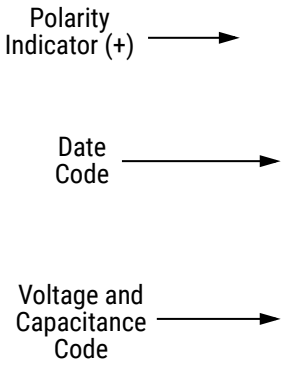
T520/T521/T523/T525/T530



Date Code*	
1st digit = Last number of Year	2 = 2012 3 = 2013 4 = 2014 5 = 2015 6 = 2016 7 = 2017
2nd and 3rd digit = Week of the Year	01 = 1st week of the Year to 52 = 52nd week of the Year

* 617 = 17th week of 2016

T520A/T527



Code	e	g	j	A
Rated Voltage	2.5 V	4 V	6 V	10 V

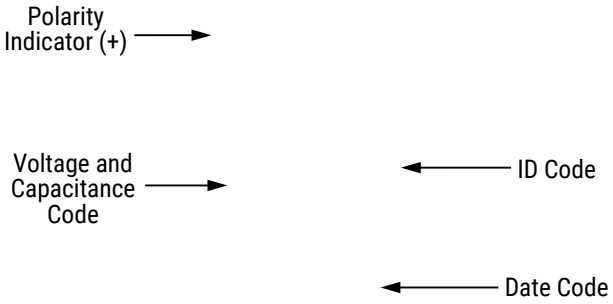
Code	A7	E7	J7	N7	S7
Capacitance	10	15	22	33	47

Code	W7	A8	E8	J8	N8
Capacitance	68	100	150	220	330

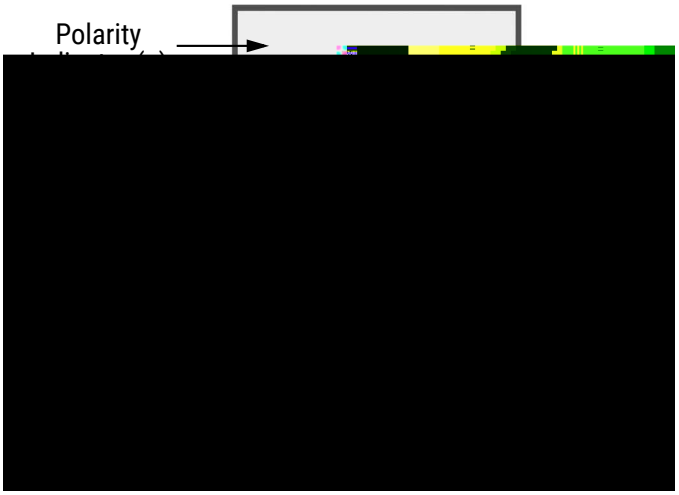
Date Code*												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	a	b	c	d	e	f	g	h	j	k	l	m
2016	n	p	q	r	s	t	u	v	w	x	y	z
2017	A	B	C	D	E	F	G	H	J	K	L	M
2018	N	P	Q	R	S	T	U	V	W	X	Y	Z

Capacitor Marking cont'd

T520B/T520T



T529



Code	j	s	a
Capacxe0.4(ap-	0.01194 .01194 .0	1194 .01194 .01194	.01194 .01194 .01194 .042

Date Code*												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	a	b	c	d	e	f	g	h	j	k	l	m
2016	n	p	q	r	s	t	u	v	w	x	y	z
2017	A	B	C	D	E	F	G	H	J	K	L	M
2018	N	P	Q	R	S	T	U	V	W	X	Y	Z

Tape & Reel Packaging Information

KEMET's molded chip capacitor families are packaged in 8 and 12 mm plastic tape on 7" and 13" reels in accordance with *EIA Standard 481:* Embossed Carrier Taping of Surface Mount Components for Automatic Handling. This packaging system is compatible with all tape-fed automatic pick-and-place systems.

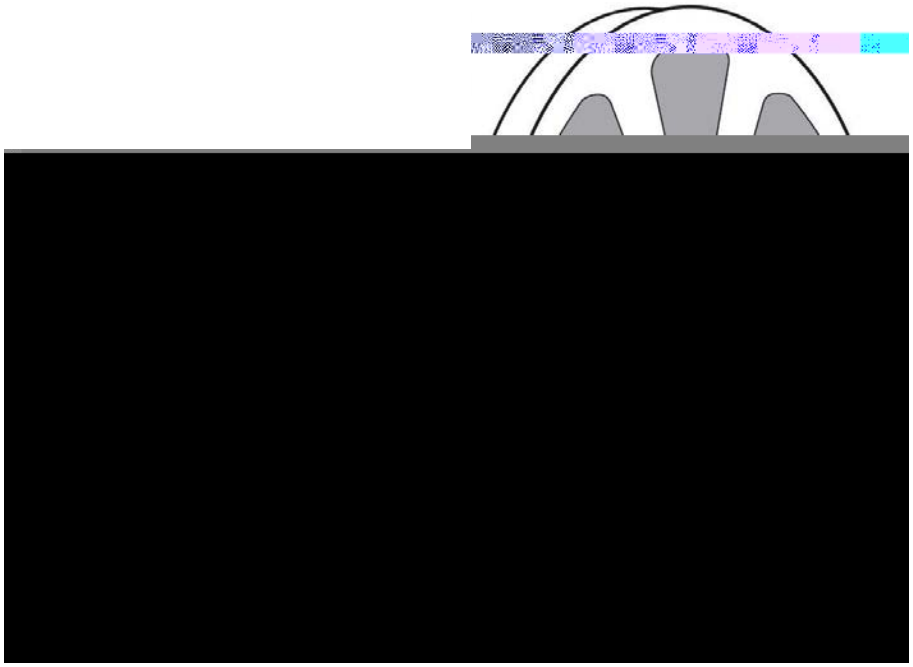
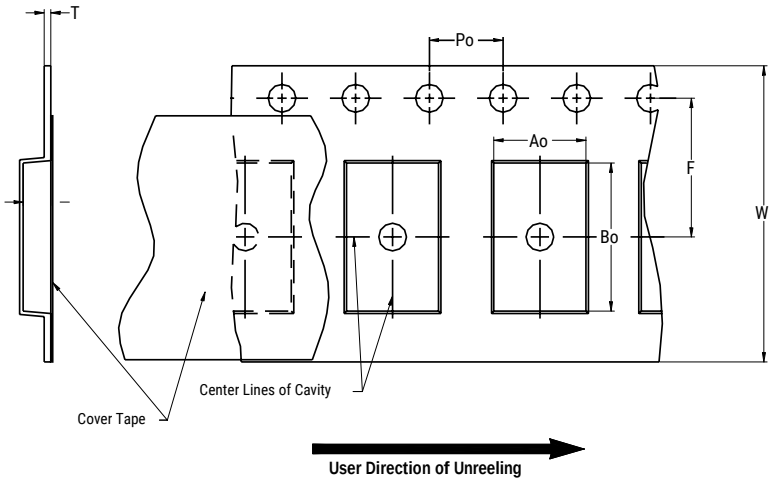


Table 3 – Packaging Quantity

Figure 1 – Embossed (Plastic) Carrier Tape Dimensions



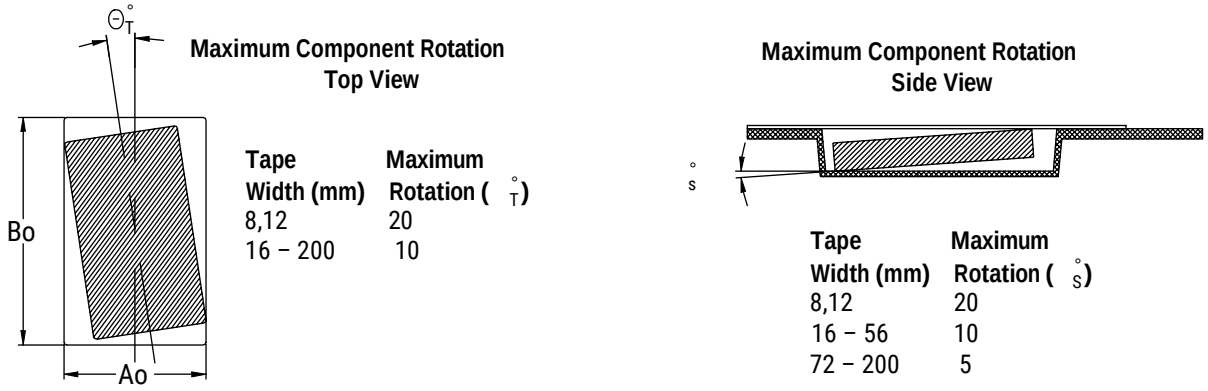
Packaging Information Performance Notes

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 to 1.0 Newton (10 to 100 gf)
12 and 16 mm	0.1 to 1.3 Newton (10 to 130 gf)

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. Labeling: Bar code labeling (standard or custom) shall be on the side of the reel opposite the sprocket holes. *Refer to EIA Standards 556 and 624.*

Figure 2 – Maximum Component Rotation

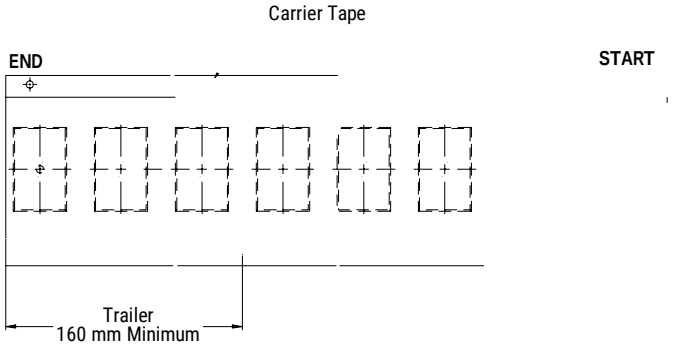


Tape Width (mm)	Maximum Rotation ($^{\circ}_{T}$)
8,12	20
16 – 200	10

Tape Width (mm)	Maximum Rotation ($^{\circ}_{S}$)
8,12	20
16 – 56	10
72 – 200	5

Figure 5 – Reel Dimensions

Figure 6 – Tape Leader & Trailer Dimensions



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