

- DC voltage ratings of 25 V, 50 V, 100 V, 200 V and 250 V
- Available capacitance Tolerances of $\pm 5\%$, $\pm 10\%$ and $\pm 20\%$
- Non-polar device, minimizing installation concerns

8 | T M E G T E P M G M R G M P S G S Y F P T M R V K P X I E V M R V E R Z S P I R E K T T V I W W M S R

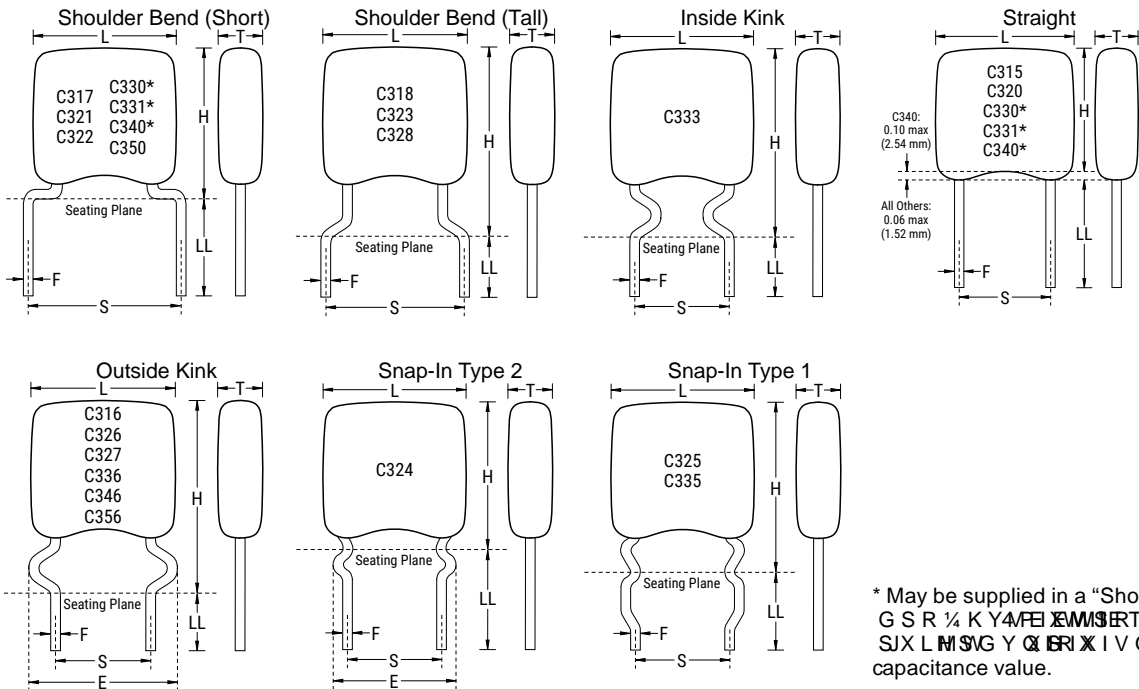
These devices are not recommended for use in overmold applications and/or processes.

4 EGOEKMRK 8]TI	4 EGOEKMRK +VEHI 3VHI VMRK 'SHI ' 7TIG
Bulk Bag	Not required (Blank)
12" Tape & Reel (16.0 ± 0.5 mm lead length)	7301
12" Tape & Reel (18.0 mm minimum lead length)	7303 and TR
Ammo Pack (16.0 ± 0.5 mm lead length)	7305
Ammo Pack (18.0 mm minimum lead length)	7317

1 (1J E T E G O E K M R K % S V H I G E R K T I M R V S U Y M S A H P D E G O E K M P E S X M B I R Y M S A H ^ I 7 X] E I R H
,
1 8 E I R H I F E G O E S K T X M R S E Z E M P S A M P I 7 X] E I R ' H * S Q S W I R J S V W E I X M G S E K M R K M X M I W
1 % Q Q S G T E G O E S K T X M R S E Z E M P S A M P I 7 X] P I ' E R ' H * S Q S W I R J S V W E I X M G S E K M R K M X M I W
1 % Q Q S G E R H E I R H I F E G O E S K T X M R S E Z E M P S A M P I 7 X] P I ' E R ' H * S Q S W I R J S V W E I X M G S E K M R K
Information".

'SQQIVGWEPW SHEYKWFNIGRXUWREPM ¼ GEXWPSR/HINQKLSEHWSRHNEXMSRW
referenced in Table 2. Performance & Reliability.

(M Q I R W M S R W • - R G L I W 1 M P P M Q I X I V W



* May be supplied in a "Shoulder Bend" or "Straight" Lead
G S R ¼ K Y A F E X M S E R T E G M X E R X I V W E O R M S R
S J X L M S V Y Q I R X I V Q M S R ¼ K Y E Z E M P E F M P M X J
capacitance value.

7 I V M I W	7 X J P I Size	S Lead Spacing	L 0 I R K X L 1 E \ M Q Y Q	H , I M K L E \ M Q Y Q	T X 8 L M G O R I W Q E \ M Q Y Q	F 0 I E H (M E Q I X I V W	LL 0 I E H 0 I R K X L 1 M R M Q Y Q
C31X	315	0.100 (2.54)	0.150 (3.81)	0.120 (3.14)	0.100 (2.54)	0.020 (0.51)	0.276 (7.00)
	316		0.150 (3.81)	0.230 (5.84)	0.100 (2.54)		0.200 (5.08)
C32X	324		0.200 (5.08)	0.230 (5.84)	0.125 (3.18)		0.276 (7.00)
	320	0.200 (5.08)	0.200 (5.08)	0.230 (5.84)	0.125 (3.18)		0.276 (7.00)
	326		0.200 (5.08)	0.300 (7.62)	0.125 (3.18)		0.200 (5.08)
C31X	317	0.200 (5.08)	0.150 (3.81)	0.200 (5.08)	0.100 (2.54)		0.276 (7.00)
	318	0.250 (6.35)	0.150 (3.81)	0.235 (5.97)	0.100 (2.54)		0.276 (7.00)
C32X	321		0.200 (5.08)	0.260 (6.60)	0.125 (3.18)		0.276 (7.00)
	322		0.200 (5.08)	0.260 (6.60)	0.125 (3.18)		0.276 (7.00)
	323	0.200 (5.08)	0.200 (5.08)	0.300 (7.62)	0.125 (3.18)		0.276 (7.00)
	325		0.200 (5.08)	0.300 (7.62)	0.125 (3.18)		0.276 (7.00)
	328		0.200 (5.08)	0.300 (7.62)	0.125 (3.18)		0.276 (7.00)
	327		0.200 (5.08)	0.320 (8.13)	0.125 (3.18)		0.200 (5.08)
C33X	330	0.250 (6.35)	0.280 (7.11)	0.360 (9.14)	0.160 (4.07)		0.276 (7.00)
	331		0.300 (7.62)	0.360 (9.14)	0.160 (4.07)		0.276 (7.00)
	333	0.200 (5.08)	0.280 (7.11)	0.400 (10.16)	0.160 (4.07)		0.276 (7.00)
	335		0.280 (7.11)	0.400 (10.16)	0.160 (4.07)		0.276 (7.00)
	336		0.280 (7.11)	0.400 (10.16)	0.160 (4.07)		0.200 (5.08)
C34X	340	0.400 (10.16)	0.290 (7.36)	0.400 (10.16)	0.160 (4.07)	0.025 (0.64)	0.276 (7.00)
	346		0.290 (7.36)	0.400 (10.16)	0.160 (4.07)		0.200 (5.08)
C35X	350		0.330 (8.38)	0.400 (10.16)	0.200 (5.08)		0.276 (7.00)
	356		0.330 (8.38)	0.400 (10.16)	0.200 (5.08)		0.200 (5.08)

1 8 L M G Q E \ W Q 8 I Q Q Q J S G E T E G M X E R X I V W E O R M S R ¼ K Y E Z E M P E F M P M X J v *

) R Z M V S R Q I R X E P ' S Q T P M E R G I

0 1 E H F J 6) I % ' E R H S , G S Q T P M E R X S Q T X M S R S W H I M E L X M R R M V I I E R M W L
4 S H Y S G H I M X M P R E R 4 H M V I I E R M V R S Q I I S , G V M X I V M E

7 I V M I W	8 I V Q M R E X M S R * M R M W L R O H S ; M V I 0 I E H S Q T P M E R X S H I	RoHS	6) % ' , S Q T P M E R X S H I	Halogen Free
300 (C3XX)	100% Matte Sn	Yes	n/a	Yes
	Sn60/Pb40	No	n/a	Yes

' 6) % ' G S Q T P M E R X S Q T X M S R S W H I M E L X M R R M V I I E R M W L

) P I G X V M G E P 4 E V E Q I X I V W ' L E V E G X I V M W X M G W

- X I Q	4 E V E Q I X I V W ' L E V E G X I V M W X M G W
Operating Temperature Range	- q ' X S q ' °C
Capacitance Change with Reference to q ' E R H (' % T T P M I H	±15%
Aging Rate (Maximum % Cap Loss/Decade Hour)	0%
Dielectric Withstanding Voltage	250% of rated voltage (5±1 second and charge/discharge not exceeding 50 mA at 25°C)
Dissipation Factor (DF) Maximum Limit at 25°C	See Dissipation Factor Limit Table
- R W Y P E X M S R 6 I W M W X E R G I 0 M Q M X 8 E F P I	See Insulation Resistance Limit Table 6 E X Z I P X E F T I R I S M R W I G S R X I Q V

6 I K E V % M R E K E T E G M Q I E R G I V I Q I R & X S P M V E K M R H X S V I J I X M S J S V , S Y 4 W I E W J X S T E V X
R Y Q F W T I G H E X G W S M I X I M I Q I X E M P W

8 S S F X E M R G M X I M H I Z E P F Y X L G E T E G M R E S Q T E S / P M Q M P X G L R S [S V X L X [S M Q M X W
' E T E G M E X H R M W W M E T E X S S E W Y Y R I H I W S P P S [S R H K M X M S R W

O, ↑ , ^ E R H r :_{rms}
2 S X I L I R Q I E W Y G M T R E G M X W G G S X S E W X W I Z S P X E Z M V P G S R W X L E R X E R % K M) P I R X E Z U I E X O R S [R
as Automatic Level Control (ALC). The ALC feature should be switched to "ON."

- R W Y P E X M S R 6 I W M W X E R G I 0 M Q M X 8 E F P I

7 X] P I 7 M ^ I	Q I K S L Q Q M G S V + °	Q I K S L Q Q M G S V + °	1 I K S L Q 1 M G V S J E V E H V
C31X	¥ *	¶ ¥ *	NA
C32X	¥ *	NA	¶ ¥ *
C33X	¥ *	NA	¶ ¥ *
C34X	¥ *	¶ ¥ *	NA
C35X	¥ *	¶ ¥ *	NA

4 S W X) R Z M V S R Q I R X E P 0 M Q M X W

, M K L 8 I Q T I V E X Y V I 0 M J I & M E W I H , Y Q M H M X J E R H 7 X S V E K I 0 M J					
Style/Size	Rated DC Voltage	Capacitance Value	Dissipation Factor (Maximum %)	Capacitance Shift	Insulation Resistance
C31X	25	All	5.0	±20%	10% of Initial Limit
	> 25	¥ *	3.0		
		¶ ¥ *	20.0		
C32X, C33X, C34X	25	¥ *	5.0		
	> 25	¥ *	3.0		
	25/50	¶ ¥ *	20.0		
C35X	25	All	5.0		
	> 25		3.0		

(M W W M T E X M S R * E G X S V (* 0 M Q M X 8 E F P I

7 X J P I 7 M ^ I	6 E X I H (' : S P X E K I	6 E X I H ' E T E G M X E R G 1 E \ M Q Y Q	(M W W M T E X M S R * E G X S V
C31X	25	All	3.5
	> 25	¥ *	2.5
		¶ ¥ *	10.0
C32X, C33X, C34X	25	¥ *	3.5
	> 25	¥ *	2.5
	25 / 50	¶ ¥ *	10.0
C35X	25	All	3.5
	> 25		2.5

8EFPI % • ' < 7X]PI 7M^I 'ETEGMXERGI 6ERKI ;EXIVJE

7X]PI 7M^I ERH 01EH 7TEGMF						
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A
'ETEGMXERGI	'ETEGMXERGI Tolerance	'ETEGMXERGI 'SHI %ZEMPEFPI 'ETEGM				
100pF	J = ±5% K = ±10% M = ±20%	101	101	101	101	101
120pF		121	121	121	121	121
150pF		151	151	151	151	151
180pF		181	181	181	181	181
220pF		221	221	221	221	221
270pF		271	271	271	271	271
330pF		331	331	331	331	331
390pF		391	391	391	391	391
470pF		471	471	471	471	471
560pF		561	561	561	561	561
680pF		681	681	681	681	681
820pF		821	821	821	821	821
1000pF		102	102	102	102	102
1200pF		122	122	122	122	122
1500pF		152	152	152	152	152
1800pF		182	182	182	182	182
2200pF		222	222	222	222	222
2700pF		272	272	272	272	272
3300pF		332	332	332	332	332
3900pF		392	392	392	392	392
4700pF		472	472	472	472	472
5600pF		562	562	562	562	562
6800pF		682	682	682	682	682
8200pF		822	822	822	822	822
0.01µF		103	103	103	103	103
0.012µF		123	123	123	123	123
0.015µF		153	153	153	153	153
0.018µF		183	183	183	183	183
0.022µF		223	223	223	223	223
0.027µF		273	273	273	273	273
0.033µF		333	333	333	333	333
0.039µF		393	393	393	393	393
0.047µF		473	473	473	473	473
0.056µF		563	563	563	563	563
0.068µF		683	683	683		
0.082µF		823	823	823		
0.1µF		104	104	104		
0.12µF		124	124	124		
0.15µF		154	154	154		
0.18µF		184	184	184		
0.22µF	224	224	224			
0.27µF	274	274				
0.33µF	334	334				
0.39µF	394	394				
0.47µF	474	474				
0.56µF	564	564				
0.68µF	684	684				
1.0µF	105	105*				
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A

* Only available on K and M tolerances.

8EFPI & • ' < 7X]PI 7M^I 'ETEGMXERGI 6ERKI ;EXIVJEF

7X]PI 7M^I ERH 01EH 7TEC						
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A
'ETEGMXERGI	'ETEGMXERGI Tolerance	'ETEGMXERGI 'SHI %ZEMPEFPI 'ETEGM				
100pF	J = ±5% K = ±10% M = ±20%	101	101	101	101	101
120pF		121	121	121	121	121
150pF		151	151	151	151	151
180pF		181	181	181	181	181
220pF		221	221	221	221	221
270pF		271	271	271	271	271
330pF		331	331	331	331	331
390pF		391	391	391	391	391
470pF		471	471	471	471	471
560pF		561	561	561	561	561
680pF		681	681	681	681	681
820pF		821	821	821	821	821
1000pF		102	102	102	102	102
1200pF		122	122	122	122	122
1500pF		152	152	152	152	152
1800pF		182	182	182	182	182
2200pF		222	222	222	222	222
2700pF		272	272	272	272	272
3300pF		332	332	332	332	332
3900pF		392	392	392	392	392
4700pF		472	472	472	472	472
5600pF		562	562	562	562	562
6800pF		682	682	682	682	682
8200pF		822	822	822	822	822
0.01µF		103	103	103	103	103
0.012µF		123	123	123	123	123
0.015µF		153	153	153	153	153
0.018µF		183	183	183	183	183
0.022µF		223	223	223	223	223
0.027µF		273	273	273	273	273
0.033µF		333	333	333	333	333
0.039µF		393	393	393	393	393
0.047µF		473	473	473	473	473
0.056µF		563	563	563	563	563
0.068µF		683	683	683	683	683
0.082µF		823	823	823	823	823
0.1µF		104	104	104	104	104
0.12µF		124	124	124	124	124
0.15µF		154	154	154	154	154
0.18µF		184	184	184	184	184
0.22µF	224	224	224	224	224	
0.27µF	274	274	274			
0.33µF	334	334	334			
0.39µF	394	394	394			
0.47µF	474	474	474			
0.56µF	564	564	564			
0.68µF	684	684	684			
0.82µF	824	824	824			
1.0µF	105	105	105			
1.2µF	125	125				
1.5µF	155	155				
1.8µF	185	185				
2.2µF	225*	225*				
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A

* Only available on K and M tolerances.

8EFPI & • ' < 7X]PI 7M^I 'ETEGMXERGI 6ERKI ;EXIVJEP

7X]PI 7M^I ERH 0IEH 7TEC						
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A
'ETEGMXERGI	'ETEGMXERGI Tolerance	'ETEGMXERGI 'SHI %ZEMPEFPI 'ETEGM				
2.7μF	J = ±5% K = ±10% M = ±20%	275	275			
3.3μF		335	335			
3.9μF		395	395			
4.7μF		475¹	475¹			
5.6μF		565¹				
6.8μF		685¹				
10μF		106¹				
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A

z8LMGQREIMVQ8IQ Q QJSG/ETEGMEXERGIEXUBUYXS v *

8EFPI ' • ' < 7X]PI 7M^I 'ETEGMXERGI 6ERKI ;EXIVJEP

		7X]PI 7M^I			ERH	0IEH 7TE
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A
'ETEGMXERGI	'ETEGMXERGI Tolerance	'ETEGMXERGI 'SHI %ZEMPEFPI 'ETEGM				
100pF	J = ±5% K = ±10% M = ±20%	101	101	101	101	101
120pF		121	121	121	121	121
150pF		151	151	151	151	151
180pF		181	181	181	181	181
220pF		221	221	221	221	221
270pF		271	271	271	271	271
330pF		331	331	331	331	331
390pF		391	391	391	391	391
470pF		471	471	471	471	471
560pF		561	561	561	561	561
680pF		681	681	681	681	681
820pF		821	821	821	821	821
1000pF		102	102	102	102	102
1200pF		122	122	122	122	122
1500pF		152	152	152	152	152
1800pF		182	182	182	182	182
2200pF		222	222	222	222	222
2700pF		272	272	272	272	272
3300pF		332	332	332	332	332
3900pF		392	392	392	392	392
4700pF		472	472	472	472	472
5600pF		562	562	562	562	562
6800pF		682	682	682	682	682
8200pF		822	822	822	822	822
0.01µF	103	103	103	103	103	
0.012µF	123	123	123	123	123	
0.015µF	153	153	153	153	153	
0.018µF	183	183	183	183	183	
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A

8EFPI ' • ' < 7X]PI 7M^I 'ETEGMXERGI 6ERKI ;EXIVJEP

7XJPI 7M^I ERH OIEH 7TE						
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A
'ETEGMXERG I Tolerance	'ETEGMXERG I 'SHI %ZEMPEFPI 'ETE EGM					
0.022μF	J = ±5% K = ±10% M = ±20%	223	223	223	223	223
0.027μF		273	273	273	273	273
0.033μF		333	333	333	333	333
0.039μF		393	393	393	393	393
0.047μF		473	473	473	473	473
0.056μF		563	563	563	563	563
0.068μF		683	683	683	683	683
0.082μF		823	823	823	823	823
0.1μF		104	104	104	104	104
0.12μF		124	124	124	124	124
0.15μF		154	154	154	154	154
0.18μF		184	184	184	184	184
0.22μF		224	224	224	224	224
0.27μF		274	274	274		
0.33μF		334	334	334		
0.39μF		394	394	394		
0.47μF		474	474	474		
0.56μF		564	564	564		
0.68μF		684	684	684		
0.82μF		824	824	824		
1.0μF		105	105	105		
1.2μF		125	125			
1.5μF		155	155			
1.8μF		185	185			
2.2μF		225*	225*			
2.7μF		275	275			
3.3μF		335	335			
3.9μF		395	395			
4.7μF		475¹	475¹			
5.6μF		565¹				
6.8μF	685¹					
10μF	106¹				0	
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A

z8 L M G QRE\WVQ8!Q

Q Q J S G / E T E G ~~M~~ ~~E~~ ~~P~~ ~~R~~ ~~I~~ ~~G~~ ~~M~~ ~~E~~ ~~X~~ ~~L~~ ~~I~~ ~~S~~ ~~P~~ ~~U~~ ~~Y~~ ~~E~~ ~~S~~ v *

8EFPI (• ' < 7X]PI 7M^I 'ETEGMXERGI 6ERKI ;EXIVJEP

		7X]PI 7M^I		ERH		0IEH	7TEC
6EXIH :SPXEKI :('				100			
:SPXEKI 'SHI		3		1		A	
'ETEGMXERGI	'ETEGMXERGI Tolerance	'ETEGMXERGI 'SHI %ZEMPEFPI 'ETEGM					
4700pF	J = ±5% K = ±10% M = ±20%	472*	472*	472*	472*	472*	
5600pF		562*	562*	562*	562*	562*	
6800pF		682*	682*	682*	682*	682*	
8200pF		822*	822*	822*	822*	822*	
0.01μF		103*	103*	103*	103*	103*	
0.012μF		123*	123*	123*	123*	123*	
0.015μF		153*	153*	153*	153*	153*	
0.018μF		183*	183*	183*	183*	183*	
0.022μF		223*	223*	223*	223*	223*	
0.027μF		273*	273*	273*	273*	273*	
0.033μF		333*	333*	333*	333*	333*	
0.039μF		393*	393*	393*	393*	393*	
0.047μF		473*	473*	473*	473*	473*	
0.056μF		563*	563*	563*	563*	563*	
0.068μF		683*	683*	683*	683*	683*	
0.082μF		823*	823*	823*	823*	823*	
0.1μF		104*	104*	104*	104*	104*	
0.12μF		124*	124*	124*	124*	124*	
0.15μF		154*	154*	154*	154*	154*	
0.18μF		184*	184*	184*	184	184	
0.22μF		224*	224*	224*	224	224	
0.27μF		274*	274*	274*	274	274	
0.33μF		334*	334*	334*	334	334	
0.39μF		394*	394*	394*	394	394	
0.47μF		474*	474*	474	474	474	
0.56μF		564*	564*	564	564	564	
0.68μF		684*	684*	684	684	684	
0.82μF		824*	824*	824	824	824	
1.0μF		105*	105*	105	105	105	
1.2μF		125*	125*	125	125	125	
1.5μF	155*	155*					
1.8μF	185*	185*					
2.2μF							
6EXIH :SPXEKI :('				100			
:SPXEKI 'SHI		3		1		A	

'ETEGMXERGI ST/T/RL/EL/LSYPHIF/ERH ¼ K M X MISRM ER'H
Bold text denotes only available on K and M tolerances.

8EFPI) • ' < 7X]PI 7M^I 'ETEGMXERGI 6ERKI ;EXIVJEP

		7X]PI 7M^I		0IEH 7TEGMRK	
6EXIH :SPXEKI :('				100	
:SPXEKI 'SHI		3		1	A
'ETEGMXERGI	'ETEGMXERGI Tolerance	'ETEGMXERGI 'SHI %ZEMPEFPI 'ETEGM			
0.068μF	J = ±5% K = ±10% M = ±20%	683*	683*	683*	683*
0.082μF		823*	823*	823*	823*
0.1μF		104*	104*	104*	104*
0.12μF		124*	124*	124*	124*
0.15μF		154*	154*	154*	154*
0.18μF		184*	184*	184*	184
0.22μF		224*	224*	224*	224
0.27μF		274*	274*	274*	274
0.33μF		334*	334*	334*	334
0.39μF		394*	394*	394*	394
0.47μF		474*	474*	474	474
0.56μF		564*	564*	564	564
0.68μF		684*	684*	684	684
0.82μF		824*	824*	824	824
1.0μF		105*	105*	105	105
1.2μF		125*	125*	125	125
1.5μF		155*	155*	155	
1.8μF		185*	185*	185	
2.2μF				225	
2.7μF		275	275		
3.3μF	335	335			
3.9μF	395	395			
4.7μF	475	475			
5.6μF	565	565			
6.8μF	685	685			
8.2μF	825	825			
10μF	106	106			
6EXIH :SPXEKI :('				100	
:SPXEKI 'SHI		3		1	A

'ETEGMXERGI ST/PM/L SYPHIRI 68R 1/4 K WREX MISTRM^I

Bold text denotes only available on K and M tolerances.

8EFPI * • ' < 7X]PI 7M^I 'ETEGMXERGI 6ERKI ;EXIVJEP

7X]PI 7M^I 0IEH 7TEGMRK						
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A
'ETEGMXERGI	'ETEGMXERGI Tolerance	'ETEGMXERGI 'SHI %ZEMPEFPI 'ETEGM				
0.18μF	J = ±5% K = ±10% M = ±20%	184	184	184	184	184
0.22μF		224	224	224	224	224
0.27μF		274	274	274	274	274
0.33μF		334	334	334	334	334
0.39μF		394	394	394	394	394
0.47μF		474	474	474	474	474
0.56μF		564	564	564	564	564
0.68μF		684	684	684	684	684
0.82μF		824	824	824	824	824
1.0μF		105	105	105	105	105
1.2μF		125	125	125	125	125
1.5μF		155	155			
1.8μF		185	185			
2.2μF		225	225			
2.7μF		275	275			
3.3μF		335	335			
3.9μF		395	395			
4.7μF		475	475			
5.6μF		565	565			
6.8μF		685	685			
8.2μF	825	825				
10μF	106	106				
6EXIH :SPXEKI :('				100		
:SPXEKI 'SHI		3		1		A

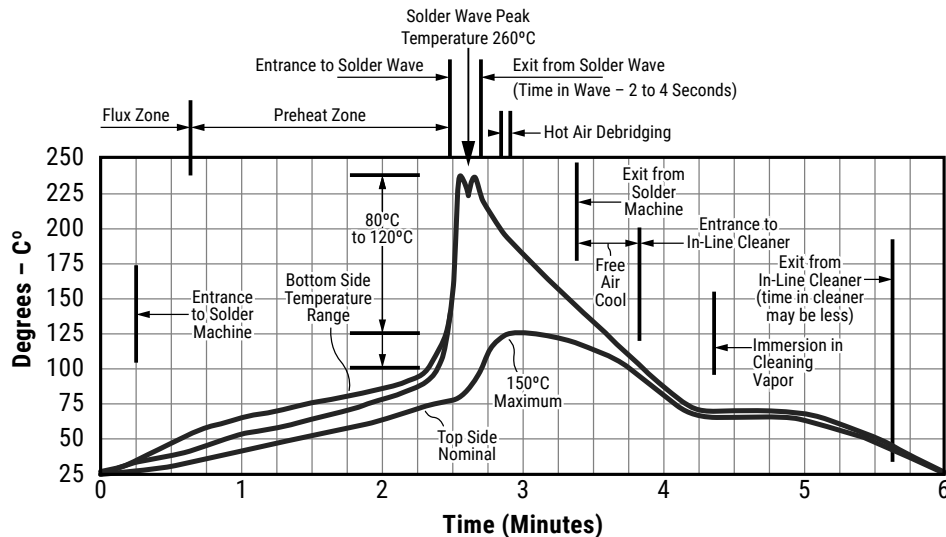
7SPHIVMRK 4VSGIWW

6IGSQQIRHIH 7SPHIVMRK 1IXLSHW

- Solder Wave
- Hand Soldering (Manual)

6IGSQQIRHIH 7SPHIVMRK 4VS ¼ PI

- 3TXM QZTQSP HVS ¼ PI



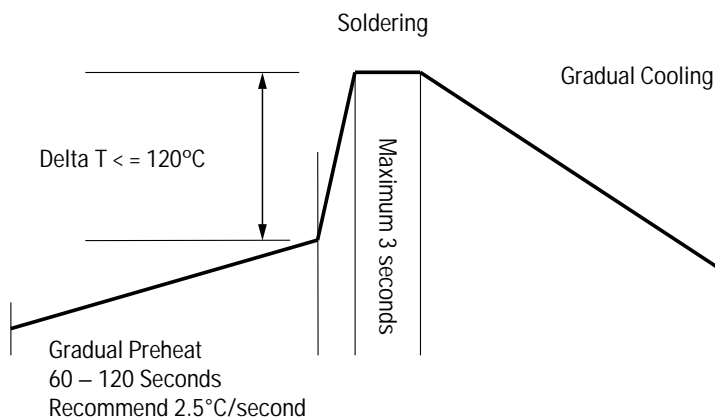
1SYRXMRK

All encased capacitors will pass the Resistance to Soldering Heat of MIL-STD-202, Method 210, Condition C. This test simulates wave solder topside board mount product. This demonstration of resistance to solder heat is in accordance with the process.

8LEFSZK YMW IGSQQIR S IHE ZT V S ¼ PI SPS XLMERV HPM E FG HV E Q MTGE GMXS VW

- Hand Soldering (Manual)

Manual Solder Profile with Pre-heating



8EFPI • 4IVJSVQERGI 6IPMEFMPMX] 8IWX 1IXLSHW E

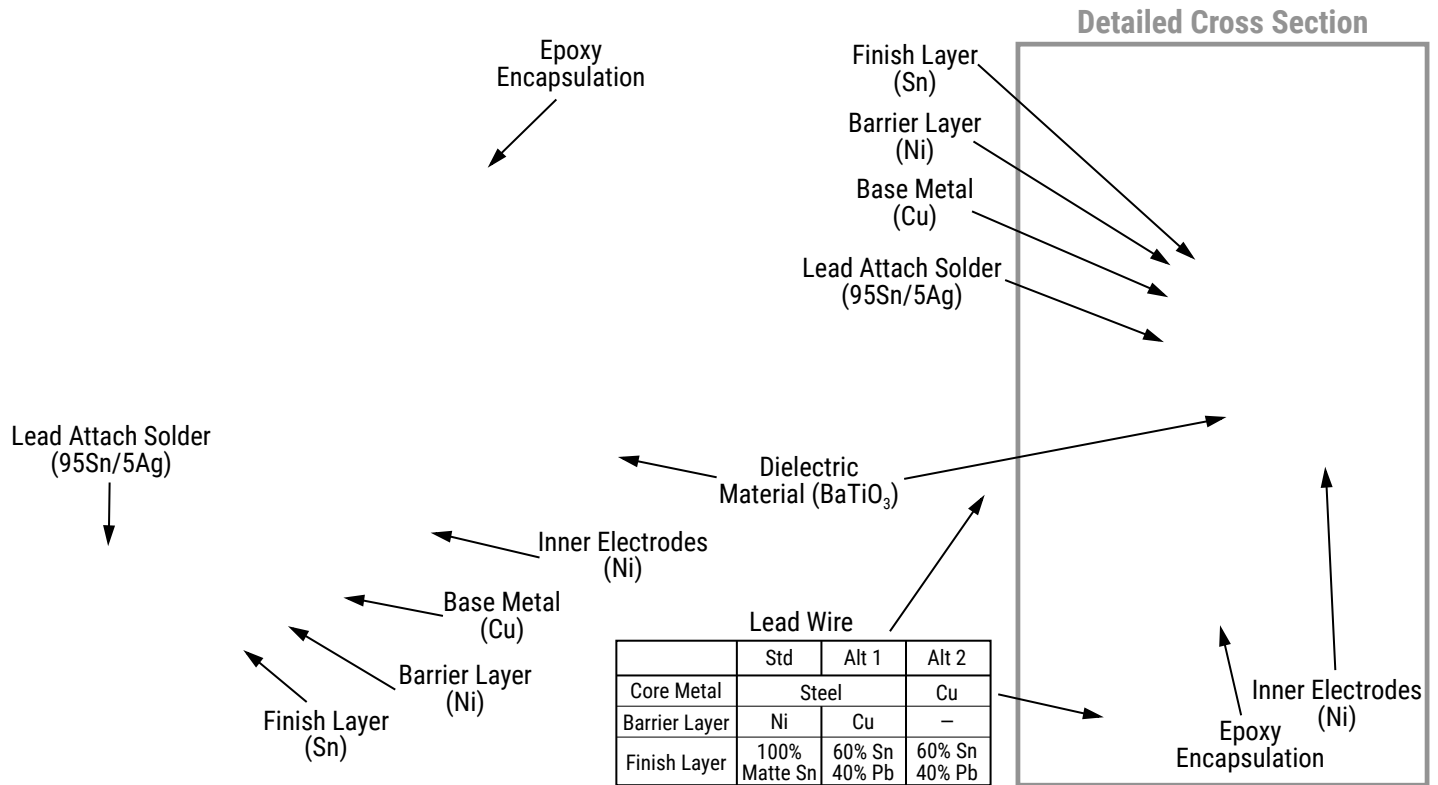
7XVIWW	6IJIVIRGI	8IWX SV -RWTIGXMSR 1IXLSH
Solderability	J-STD-002	1 E K R M ¼ G E X S R S R X M S R W E 1IXLSH % EX q' 'EXIKSV]
Temperature Cycling	JESD22 Method JA-104	G J G P I W q X S q' Q I E W Y V E Q I B X Y V W L S Y E J W X I M G S R G P Y W M S R
Biased Humidity	MIL-STD-202 Method 103	0 S E H L Y Q M H M X] L S Y V W q' 6, E R H V E X I H 2 1 I E W Y V I Q I R X E X L S Y V W - L S Y V W E J X I V X I W X 0 0 S [Z S P X L Y Q M H M X] L S Y V W 'q 6, E R H : 1 I E W Y V I Q I R X E X L S Y V W - L S Y V W E J X I V X I W X 0
Moisture Resistance	MIL-STD-202 Method 106	X ! L S Y V W G J G P I 7 X I T W E F R S X V I U Y M V I H 9 hours after test conclusion.
Thermal Shock	MIL-STD-202 Method 107	- { ' X S q' 2 S X I 2 Y Q F I V S J G J G P I W V I U Y M V I H • seconds. Dwell time – 15 minutes. Air – Air.
High Temperature Life	MIL-STD-202 Method 108/EIA-198	L S Y E / W q' q' J S > 9 [M X k V E X I S I P X E E T I P M I H
Storage Life	MIL-STD-202 Method 108	q' : (' J S V L S Y V W
Vibration	MIL-STD-202 Method 204	K J S V Q M R Y X I W G J G P I W I E G L S J S V M I R X E X secure points on one long side and 2 secure points at corners of opposite sides. Parts mounted within 2" from any secure point. Test from 10–2000 Hz.
Resistance to Soldering Heat	MIL-STD-202 Method 210	' S R H M X S S R I L S E X E Q T P S X W M R K Z W S P H I W S G I H Y V I
Terminal Strength	MIL-STD-202 Method 211	Conditions A (454g), Condition C (227g)
Mechanical Shock	MIL-STD-202 Method 213	Figure 1 of Method 213, Condition C.
Resistance to Solvents	MIL-STD-202 Method 215	Add aqueous wash chemical – OKEM Clean or equivalent.

7XSVEKI , ERHPMRK

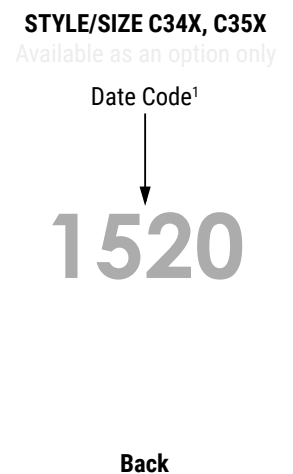
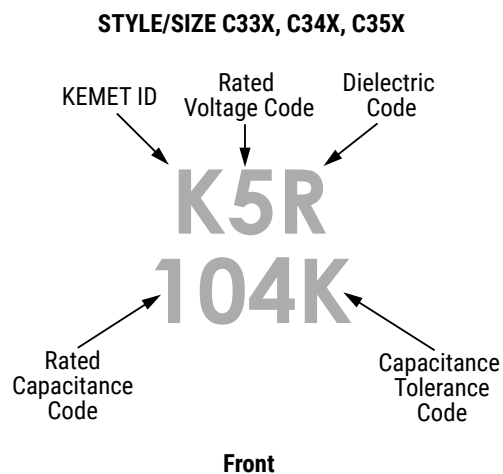
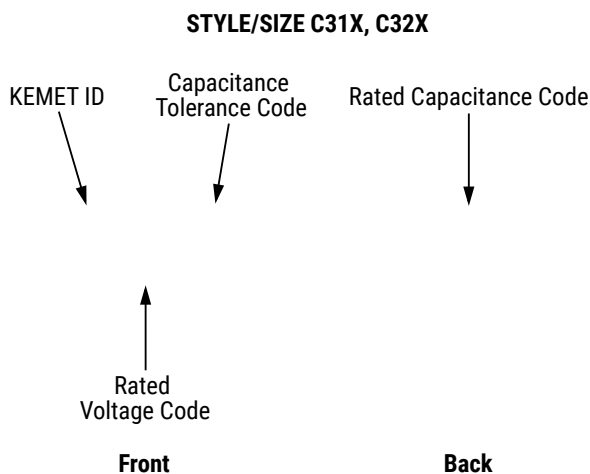
The un-mounted storage life of a leaded ceramic capacitor is dependent upon storage and atmospheric conditions as well as packaging materials. While the ceramic chips enveloped under the epoxy coating themselves are quite robust, the epoxy coating is susceptible to degradation under high temperatures, high humidity, corrosive atmospheres, and long term storage. In addition, packaging materials will be degraded by high temperature and exposure to direct sunlight – reels may soften or warp, and tape peel force may increase.

KEMET recommends storing the un-mounted capacitors in their original packaging, in a location away from direct sunlight and where the temperature and relative humidity do not exceed 40 degrees centigrade and 70% respectively. For optimal solderability, capacitor stock should be used promptly, preferably within 18 months of receipt. For applications requiring high temperatures, high humidity, corrosive atmospheres, and long term storage. In addition, packaging materials will be degraded by high temperature and exposure to direct sunlight – reels may soften or warp, and tape peel force may increase. For devices, it is important to verify that your process does not affect product quality and performance. KEMET recommends testing and evaluating the performance of a cleaned, bonded or molded product prior to implementing and/or qualifying these processes.

' S R W X V Y G X M S R



1 E V O M R K



' 8 S T V S T V V P Y X W R G P S X L N S R M R L Q E V O M R K V Q E X Z S R L H
G Q T S R S R R I C R K 4) ' Q Y W X E H H X E L I R S X L S V H I C R K

(EXI 'SHI	
1 E R Y J E G X M R K	M R E R Y J E G X M R K
15 = 2015	20 = Week 20 (of mfg. calendar year)

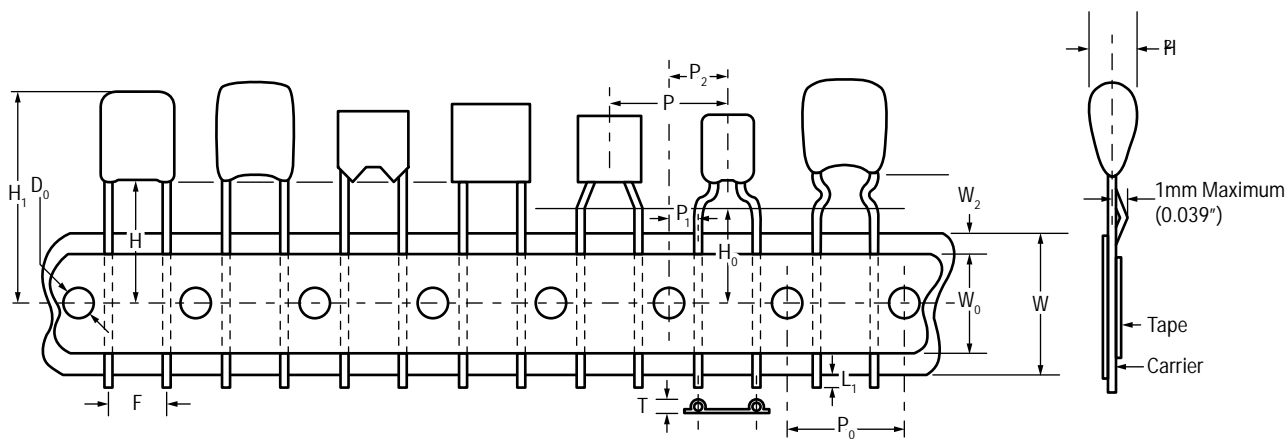
4 E G O E K M R K 5 Y E R X M X M I W

7 X J P I 7 X E R H E V H & Y P O Size 5 Y E R X M X J 1 E \ M Q Y Q	Ammo Pack 5 Y E R X M X J 1 E \ M Q Y Q	6 I I P 5 Y E 6 I I P
315	500/Bag	2500
316		
317		
318		
320		
321		N/A
322		2500
323		
324		
325		
326		
327		
328		
330	250/Bag	1500
331		N/A
333		1500
335		
336		
340	100/Bag	1000
346		1000
350	50/Bag	500
356		

8ETI 6IIP 4EGOEKMRK -RJSVQEXMSR

KEMET offers standard reeling of Molded and Conformally Coated Radial Leaded Capacitors in accordance with EIA standard 468. Parts are taped to a tagboard carrier strip, and wound on a reel as shown in Figure 1. Kraft paper interleaving is inserted between the layers of capacitors on the reel. Ammopack is also available, with the same lead

XETI GSR¼ KYVEXMSR ERH TEGOEKI UYERXMXMIW



'IVEQMG 6EHMEP 8ETI ERH 6IIP (MQIRWMSRW

Metric will govern

'SRWXERX (MQIRWMSRW , 1MPPMQIXIVW -RGLIW								
D ₀ ±0.2 (0.008)	P ₀ ±0.3 (0.012)	² ±0.2 (0.008)	L ₁ Maximum	t ±0.2 (0.008)	T Maximum	W ₋ -	W ₀ Minimum	W ₂ Maximum
4.00 (0.157)	12.7 (0.500)	4.0 (0.157)	1.0 (0.039)	0.7 (0.051)	1.5 (0.059)	18.0 (0.709)	5.0 (0.197)	3.0 (0.118)

'IVEQMG 6EHMEP 8ETI ERH 6IIP (MQIRWMSRW GSRX

Metric will govern

:EVMEFPI (MQIRWMSRW , 1MPPMQIXIVW -RGLIW							
F ±0.78 (0.030)	P ₁ ±0.30 (0.012)	P ±0.3 (0.012)	P ₂ ±1.3 (0.51)	H		H ₀	
				7XVEMKLX 0IEH 'SR¼ KYVEXMSR ² *SVQI			
				Packaging C-Spec			
				7301/7305	7303/7317	7301/7305	7303/7317
2.54 (0.100)	5.08 (0.200)	12.7 (0.500)	6.35 (0.250)	16.0±0.5 (0.630±0.020)	18.0 (0.709) Minimum	16.0±0.5 (0.630±0.020)	18.0 (0.709) Minimum
4.32 (0.170)	3.89 (0.153)	12.7 (0.500)	6.35 (0.250)				
5.08 (0.200)	3.81 (0.150)	12.7 (0.500)	6.35 (0.250)				
5.59 (0.220)	3.25 (0.128)	12.7 (0.500)	6.35 (0.250)				
6.98 (0.275)	2.54 (0.100)	12.7 (0.500)	6.35 (0.250)				
7.62 (0.300)	2.24 (0.088)	12.7 (0.500)	6.35 (0.250)				
9.52 (0.375)	7.62 (0.300)	12.7 (0.500)	6.35 (0.250)				
10.16 (0.400)	7.34 (0.290)	25.4 (1.000)	N/A				
12.06 (0.475)	6.35 (0.250)	25.4 (1.000)	N/A				
14.60 (0.575)	5.08 (0.200)	25.4 (1.000)	N/A				
17.14 (0.675)	3.81 (0.15)	25.4 (1.000)	N/A				

¹ 1IEWYVIH EX XLI IKVIWW JVSQ XLI GEVVMIV XETI SR XLI GSQTSRIRX WMHI

² *SVQIH PIEH GSR¼ KYVEXMSR MRGPYHIW WLSYPHIV FIRH MRWMHI OMRO SYXW
 GSR¼ KYVEXMSRW WII (MQIRWMSRW WIGXMSR SJ XLMW HSGYQIRX
 8LI 4EGOEKMRK ' 7TIG MW E HMKMX GSHI [LMGL MHIRXM¼ IW XLI TEGOEKMRK X]T
 MRGPYHIH MR XLI XL XLVSYKL XL GLEVEGXIV TSWMXMSRW SJ XLI SVHIVMRK GSHI

7JQFSP 6IJIVIRGI 8EFP	
D ₀	Sprocket Hole Diameter
P ₀	Sprocket Hole Pitch
P	Component Pitch
F	Lead Spacing
P ₁	Sprocket Hole Center to Lead Center
P ₂	Sprocket Hole Center To Component Center
H	Height to Seating Plane (Straight Leads Only)
H ₀	Height to Seating Plane (Formed Leads Only)
H ₁	Component Height Above Tape Center
² ,	Component Alignment
L ₁	Lead Protrusion
t	Composite Tape Thickness
W	Carrier Tape Width
W ₀	Hold-Down Tape Width
W ₂	Hold-Down Tape Location

/) 1) 8) P I G X V S R M G W ' S V T S V E X M S R 7 E P I W 3 ¾ G I W

* S V E G S Q T P I X I P M W X S J S Y V K P S F E P W E P I W S ¾ G I W T P I E W I Z M W M X

(M W G P E M Q I V

% P P T V S H Y G X W T I G M ¼ G E X M S R W W X E X I Q I R X W M R J S V Q E X M S R E R H H E X E G S P P I G X M Z I P] X L I ^
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7 X E X I Q I R X W S J W Y M X E F M P M X] J S V G I V X E M R E T T P M G E X M S R W E V I F E W I H S R /) 1) 8) P I G X V S R M G W
 E T T P M G E X M S R W F Y X E V I R S X M R X I R H I H X S G S R W X M Y X I • E R H /) 1) 8 W T I G M ¼ G E P P] H M W G P E M
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