

% \ M Q E \ ' S R J S V Q E P P] ' S E X I H **KEMET**
 > 9 (M I P I G X V M G E R H : (' ' S Q Q I V G M E P

Overview

KEMET's Aximax conformally coated axial leaded ceramic capacitors in Z5U dielectric feature an 85°C maximum operating temperature and are considered resistance and capacitance stability are not of major concern. They are available in capacitance values from 10 pF to 1000 pF and voltage ratings from 25 V to 250 V. They are suitable for bypass and decoupling or +85°C.

& I R I X W

- Axial leaded form factor
- Conformally coated
- Operating temperature range of +10°C to +85°C
- Lead (Pb)-free, RoHS and REACH compliant
- DC voltage ratings of 25 V, 50 V, 100 V, 200 V, and 250 V
- Available capacitance tolerances of ±20% and +80%/-20%
- Non-polar device, minimizing installation concerns
- Excellent solderability



3 V H I V M R K - R J S V Q E X M S R

C	410	C	105	M	3	U	5	T	A	
Ceramic	Style/Size	7 T I G M Series	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Dielectric	Design	0 I E * H M R M W	Failure Rate	Packaging (C-Spec)
	410 412 420 430 440	C = Standard	First two digits represent W M K R M K Y V 8 W M H M K M T X G M	M = ±20% > ! —	3 = 25 5 = 50 1 = 100 2 = 200 A = 250	U = Z5U	5 = Multilayer	T = 100% Matte Sn H = SnPb (60/40)	Sn A = N/A	Blank = Bulk 7200 = 12" Reel 7293 = Ammo Pack

¹ Additional capacitance tolerance offerings may be available. Contact KEMET for details.

² Lead materials:

Standard: 100% matte tin (Sn) with nickel (Ni) underplate and steel core ("T" designation).

% P X I V R E X M Z I X M R 7 R P I E H 4 F R M W L [M X L G S T T I V G P E H W X I I P G S V I p ,
 % P X I V R E X M Z I X M R 7 R P I E H 4 F R M W L [M X L G S T T I V G S V I E Z E M P E F P I
 ' S R X E G X /) 1) 8 J S V ' 7 T I G H I X E M P W

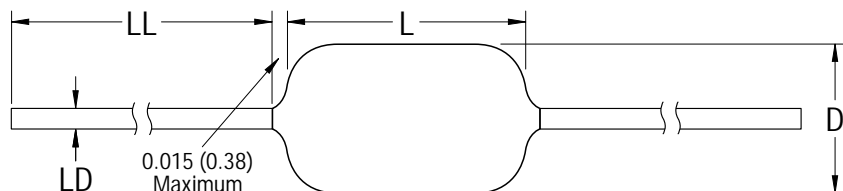
% TTPMGEXMSRW

Typical applications include limited temperature, decoupling and bypass.

% TTPMGEXMSR 2SXIW

8 L I V M I I Z M E G R V S X I G S Q Q I R S M W I S Z I V Q E S T P H P M E R X I M S R S C A I W W I W

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



7 I V M I W	7 X] P I Size	L 0 I R K X L Maximum	D L (M E Q I X I V Maximum	LD 0 I E H (M E Q I X I V Minimum	LL 0 I E H 0 I R K X L Minimum
C41X	410	0.170 (4.32)	0.095 (2.41)	—	1.0 (25.4)
	412	0.170 (4.32)	0.120 (3.05)		
C42X	420	0.200 (5.08)	0.100 (2.54)	—	
C43X	430	0.240 (6.10)	0.150 (3.81)	—	
C44X	440	0.260 (6.60)	0.150 (3.81)	—	

5 Y E P M a G E X M S R ' I V X M a G E X M S R

' S Q Q I V G W E F V S H E G W Y W N S Q R X I U R E P P M a (G E X M S R V X I M Q R K L S E R G S R H M E X M S R W
referenced in Table 2, Performance & Reliability.

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

0 I E H F J 6) I % ' E R G S , G S Q T P M E R S Y Q T X M L S I R W H I M K L X M R R M V I I E H R M W L
4 S H Y S G H I M K L P R E F R 4 F M V I I E H R M V S Q I E 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 ; M V I 0 I E H	RoHS) I I Q T X M S R S H I	REACH S Q T P M E R F e e	, E P S K I R
400 (C4XX)	100% Matte Sn	Yes	n/a	Yes
	Sn60/Pb40	No	n/a	Yes

1 6) % ' , G S Q T P M E R G I a S H O M G S E X W M R / S H Y Q X E R G I W S J : I V] , M K L ' S R G I V R 7 : ,'

8EFPI % i ' 7X]PI 7M^I 'ETEGMXERGI 6ERKI ;EXIVJEP

		' 7X]PI 7M^I		(MEQIXIV \		0IRKXL
6EXIH :SPXEKI :('			50	100		
:SPXEKI 'SHI		3	5	1		A
'ETEGMXE	'ETEGMXERGI Tolerance	'ETEGMXERGI		'SHI	%ZEMPEFPI	'ETEGM
220pF	M = ±20% Z = +80%, -20%	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	
0.033µF		333	333	333	333	
0.039µF		393	393	393	393	
0.047µF		473	473	473	473	
0.056µF		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				
0.82µF	824					
1.0µF	105					
6EXIH :SPXEKI :('			50	100		
:SPXEKI 'SHI		3	5	1		A

8EFPI ' i ' 7X]PI 7M^I 'ETEGMXERGI 6ERKI ;EXIVJEPF

		7X]PI 7M^I		(MEQIXIV \		0IRKXL
6EXIH :SPXEKI :('			50	100		
:SPXEKI 'SHI		3	5	1		A
'ETEGMXERGI	'ETEGMXERGI Tolerance	'ETEGMXERGI		'ETEGMXERGI 'SHI	%ZEMPEFPI	'ETEGMXERGI
470pF	M = ±20% Z = +80%, -20%	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		
0.033µF		333	333	333		
0.039µF		393	393	393		
0.047µF		473	473	473		
0.056µF		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	274			
0.33µF	334	334	334			
0.39µF	394	394	394			
0.47µF	474	474	474			
0.56µF	564	564				
0.68µF	684	684				
0.82µF	824	824				
1.0µF	105	105				
6EXIH :SPXEKI :('			50	100		
:SPXEKI 'SHI		3	5	1		A

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

		' 7X]PI 7M^I		(MEQIXIV \		0IRKXL
6EXIH :SPXEKI :('			50	100		
:SPXEKI 'SHI		3	5	1		A
'ETEGMXERGI	'ETEGMXERGI Tolerance	'ETEGMXERGI		'SHI	%ZEMPEFPI	'ETEGM
0.033µF	M = ±20% Z = +80%, -20%	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		
0.18µF		184	184	184		
0.22µF		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			
0.68µF		684	684			
0.82µF		824	824			
1.0µF		105	105			
1.2µF		125	125			
1.5µF		155	155			
1.8µF		185	185			
2.0µF		205	205			
2.2µF		225	225			
2.7µF		275				
3.3µF	335					
3.9µF	395					
4.7µF	475					
6EXIH :SPXEKI :('			50	100		
:SPXEKI 'SHI		3	5	1		A

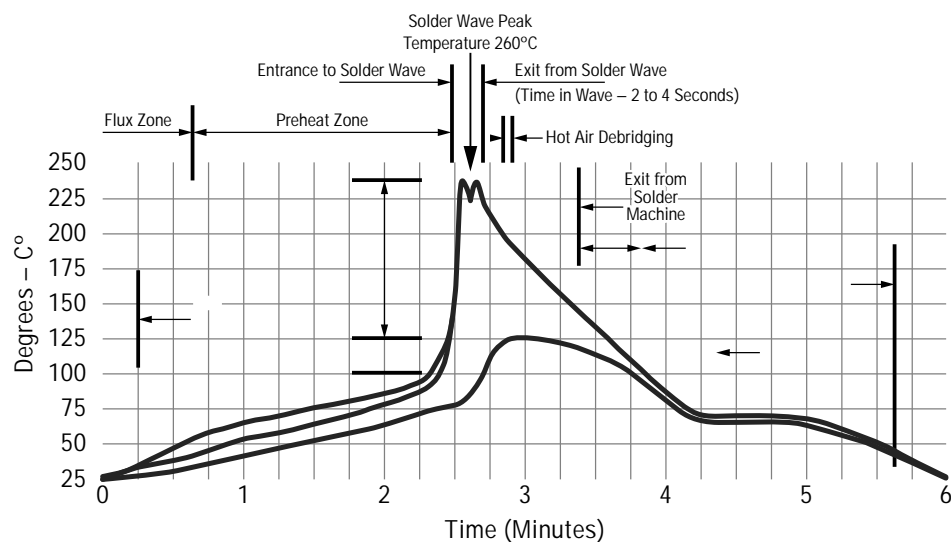
7SPHIVMRK 4VSGIWW

6IGSQQIRHIH 7SPHIVMRK 1IXLSHW

- Solder Wave
- Hand Soldering (Manual)

6IGSQQIRHIH 7SPHIVMRK 4VSαPI

u3TXM; QZQSP#V\$αPI



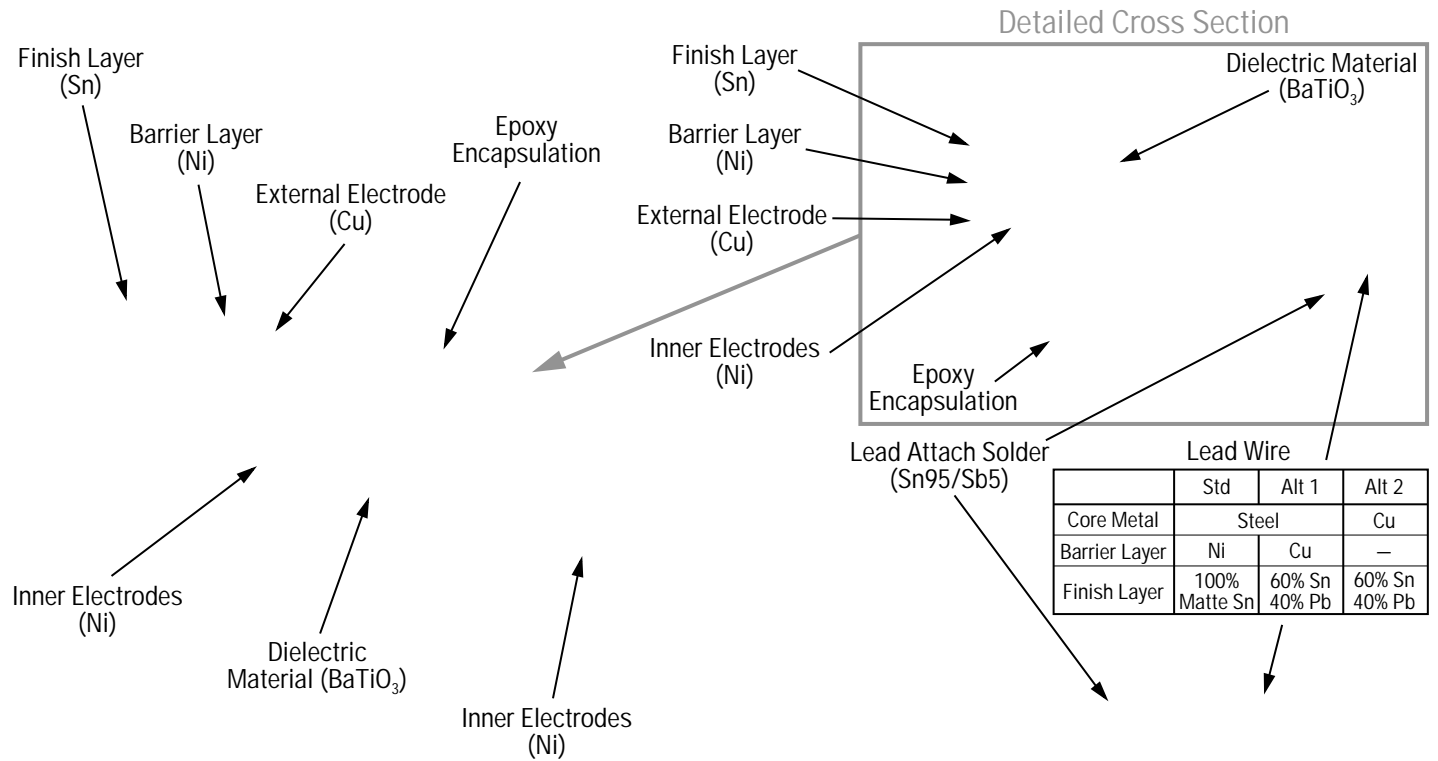
8EFPI i 4IVJSVQERGI 6IPMEFMPMX] 8IWX 1IXLSHW E

7XVIWW	Reference	8IWX SV -RWTIGXMSR 1IXLSH
Solderability	J-STD-002	1EKRM GEXSRHM XMSRW E 1IXLSH % EX q' 'EXIKSV]
Temperature Cycling	.)7(1IXLSH	G]GP+W q'S q'QIEWYVEQIB &YVWL SYE/JXIMG & RGPYWMSR
Biased Humidity	1-0 78(1IXLSH	0SEH LYQMHHX] LSYVW q' 6, ERH VEXIH 2 1IEWYVIQIRX EX LSYVW — LSYVW EJXIV XIWX 0S[ZSPX LYQMHHX] LSYVW 'q 6, ERH 1IEWYVIQIRX EX LSYVW — LSYVW EJXIV XIWX
Moisture Resistance	1-0 78(1IXLSH	X! LSYVW G]GPI 7XITW E FRSX VIUYMVIH 9 LSYVW EJXIV XIWX GSRGPYWMSR
8LIVQEBGO	-0 178(1IXLSH	{'XS q' 2SXI 2YQFIV SJ G]GPIW VIUYMVIH seconds. Dwell time -15 minutes. Air – Air.
,MQLQTIV EXMJI	1-0 78(1IXLSH /EIA -198	LSYVW q' qJSV 9[MX &VE XZISIP XEETIP MIH
Storage Life	1-0 78(1IXLSH	q' :(' JSV LSYVW
Vibration	1-0 78(1IXLSH	K JSV QMRYXIW G]GPIW IEGL SJ SVMIRXEX secure points on one long side and 2 secure points at corners of opposite sides. Parts QSYRXIH [MXMLR JVSQ ER] WIGYVI TSMRX 8IWX
Resistance to Soldering Heat	1-0 78(1IXLSH	'SRHM XMSR LSEVXE Q TPSXW MRKZPWSPHIWSGIHYVI
8IVQMRVEIRK XLE	78(1IXLSH	Conditions A (454g), Condition C (227g)
1IGLERMSCEP	1-0 78(1IXLSH	*MKYS/1IXLSH'SRHM XMSR
Resistance to Solvents	1-0 78(1IXLSH	%HEUYI \$YWG LIQM G/E P'PIESR/UYMZEPIRX

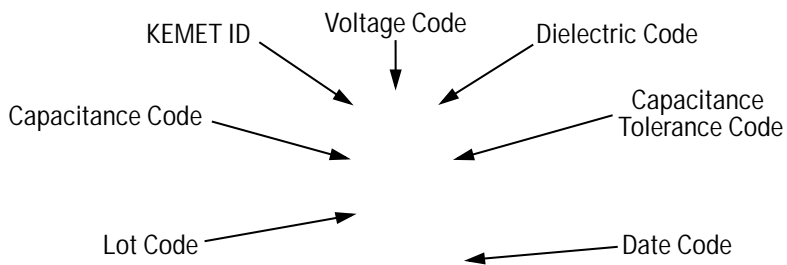
7XSVEKI ,ERHPMRK

8LYR QS WYXS PEBU IEHGHE QETG QMMXSR HYTSR XS VEERIK QSW GISR WMSR W
[IPPEWEGOEKEXRVMERVIG QMGTg À Đ Ftp M Tg'= G I ÊÊÊÊÊÊÊÊsÓc0fv ð P 7h-© Q'= E W

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



1 E V O M R K



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

4EGOEKMRK 5YERXMXMIW

7X]PI 7M^Bulk 5YERX	7XERH 5YERX	EQS 4EGO 5YERXMX] Maximum	Reel 5YERXMX] Maximum 611P
410	300/Box		
412	200/Box	4000	5000
420	300/Box		
430	200/Box	2000	2500
440	200/Box		

8ETI 6IIP 4EGOEKMRK -RJSVQEXMSR

KEMET offers standard reeling of molded and conformally coated axial leaded ceramic capacitors for automatic insertion

SV PIEH JSVQMRK QEGLMRIW MR EGGSVHERGI [MXL)-% WXRHEVH /)1)8mW MRXIVREP WTIGM μ GEXMSR JSYV HMKMX WYJ μ \ MW TPEGIH EX XLI IRH SJ XLI TEVX RYQFIV XS HIWMKREXI XETI ERH VIIP packaging, e.g., C410C104Z5U5CA7200.

4ETIV PF XIWX QMRMQYQ MW MRWIVXIH FIX[IIR XLI PE]IVW SJ GETEGMXSVW [SYRH SR VIIPW JSV GSQTSRIRX TMXGL • 'ETEGMXSV PIEH PIRKXL QE] I\XIRH SRP] E QE\MQYQ SJ QQ FI]SRH XLI XETIW_m IHKIW 'ETEGMXSVW EVI GIRXIVIH MR E VS[FIX[IIR XLI X[S XETIW ERH [MPP HIZMEXI SRP] r QQ JVSQ XLI VS[GIRXIV % QMRMQYQ SJ GQ PIEHIV XETI MW TVSZMHIH EX IEGL μ RMWLIH PIRKXL SJ XETIH GSQTSRIRXW 9RMZIVWEP WTPMGMRK GPMTW EVI YWIH XS GSRRIGX XLI XETI

8EFPI i 'IVEQMG %\MEP 8ETI ERH 6IIP (MQIRWMSRW
Metric will govern

(MQIRWMSRW j 1MPPMQIXI) V W - BGLIW		Symbol Reference Table	
Axial Capacitor Body Diameter	A	A	'S Q T S R I R X
		B	Inside Tape Spacing

/)1)8)PIGXVSRMGW 'SVTSVEXMSR 7EPIW 3J¤ GIW

*SV E GSQTPIXI PMWX SJ SYV KPSFEP WEPIW SJ¤ GIW TPIEWI ZMWMX

(MWGP EMQIV

%PP TVSHYGX WTIGM¤ GEXMSRW WXEXIQIRXW MRJSVQEXMSR ERH HEXE GSPPIGXZIP] XLI p
GLIGOMRK ERH ZIVMJ]MRK XLI I\XIRX XS [LMGL XLI -RJSVQEXMSR GSRXEMRIH MR XLMW TYFPM

%PP -RJSVQEXMSR KMZIR LIVIMR MW FIPMIZIH XS FI EGGYVEXI ERH VIPMEFPI FYX MX MW TVIW
7XEXIQIRXW SJ WYMXEFMPMX] JSV GIVXEMR ETTPMGEXMSRW EVI FEWIH SR /)1)8)PIGXVSRMGW
ETTPMGEXMSRW FYX EVI RSX MRXIRHIH XS GSRWXMXYXI i ERH /)1)8 WTIGM¤ GEPP] HMWGPEM
8LI -RJSVQEXMSR MW MRXIRHIH JSV YWI SRP] F] GYWXSQIVW [LS LEZI XLI VIUYMWMXI I\TIVMIR
XIGLRMGEP EHZMGI MRJIVVIH JVSQ XLMW -RJSVQEXMSR SV SXLIV[MWI TVSZMHIH F] /)1)8 [MXL
SFPMKEXMSR SV PMEFMPMX] JSV XLI EHZMGI KMZIR SV VIWYPXW SFXEMRIH

%PXLSYKL /)1)8 HIWMKRW ERH QERYJEGXYVIW MXW TVSHYGXW XS XLI QSWX WXVMRKIRX UYEP
JEMPYVIW QE] WXMPP SGGYV %GGSVHMRKP] GYWXSQIV ETTPMGEXMSRW [LMGL VIUYMVI E LMK
WYGL EW MRWXEPPEXMSR SJ TVSXIGXMZI GMVGYMXV] SV VIHRRHERGMIW MR SVHIV XS IRWYV
property damage.

%PXLSYKL EPP TVSHYGXiVIPEXIH [EVRMRKW GEYXMSRW ERH RSXIW QYWX FI SFWIVZIH XLI GY
QIEWYVIW QE] RSX FI VIUYMVIH