

' + (M I P I G X V M G i : (' ' S Q Q

Overview

/) 1) 8 m WHM I P I G X V M G I W Q E \ M Q Y Q G M V E G T Y T N P X I S E X L S [S R W S E R W X E F S M P M X]
 S T I V E X I M R K V E R M O V S R W M W I X E F P I G E T E G G X E R E G X E I W M U W M M G W L M R N S X W
 8 L) P I G X V S R M S R M P R W W I Q F I E X I I W M E P O L E M G E T E G M X X I R V G T X S M Q R Z H S P X E R K H
 % W W S G M E G L E S V E I G V X + H M M P I E G V M G F S E W R X I W P M G K L E F R M G E T E G M X X I R V G I R X S
 ' P E W Q E X I V S I Q E P S R S R X L O F V E W W E V G E X E M S F R M I P O X T I V E X T Y E G M Q X I E R R M Q M X I H
 X I Q T I V E S Q V I I R V E R E W R Y K W X S W H W S R E R X T T Q J V S Q ' q S q'

& I R I X W

- Lead (Pb)-free, RoHS, and REACH compliant
- EIA 201, 0402, 0603, 0805, 1206, 1210, 1808, 1812, 1825, 2220, and 2225 case sizes
- No piezoelectric noise
- Extremely low ESR and ESL

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

C	C	J	3	G	A	C	TU
Ceramic	Case Size (L" x W")	Capacitance Tolerance	Rated Voltage	Dielectric	Termination	Grade (C-Spec)	4 E G O E K M R K
	7 T I G M Series	' S H I T	Capacitance Tolerance	Electric	(I W M K R	* M R M W L	See p 4 E G O E K M R K C-Spec 3 V H I V M R K Opts 8 E F P R q S [
	0201 0402 0603 0805 1206 1210 1808 1812 1825 2220 2225	C = Standard	8 [S W I J S i T* (! r T* * ! r + ! r . ! r / ! r 1 ! r	G = COG	A = N/A	' ! 1 E X X I R	

¹ Flexible termination option is available. Please see FT-CAP product bulletin C1062_COG_FT-CAP_SMD
² Additional capacitance tolerance offerings may be available. Contact KEMET for details.
³ % H H M X M S R E P X I V Q M R E X M S R R M W L S T X M S R W Q E] F I E Z E M P E F P I ' S R X E G X /) 1) 8 J S V

4 EGOEKMRK ' 7TIG 3VHIVMRK 3TXMSRW 8EFPI

4 EGOEKMRK	8]T] 4 EGOEKMRK + VEH 3VHIVMRK 'SHI ' 7TIG
&YBΘK 9RQEVOIH	2SX VIUYMVIH 8
7" Reel/Unmarked	TU
13" Reel/Unmarked	7411 (EIA 0603 and smaller case size)) - % ERH PEVH
6IIP 9RQEVOIH	7081
6IIP 9RQEVOIH	7082

¹ Default packaging is "Bulk Bag". An ordering code C-Spec is not required for "Bulk Bag" packaging.

¹ 8LI XIVQW p1EVOIHq ERH p9RQEVOIHq TIVXEMR XS PEWIV QEVOMRK STXMSR SJ GET
 GETEGMXSVW XLEX LEZI RSX FIIR PEWIV QEVOIH 8LI STXMSR XS PEWIV QEVO MW R

² 8LI QQ TMXGL STXMSR EPPS[W JSV HSYFPI XLI TEGOEKMRK UYERXMX] SJ GETEGM
 WM^I HIZMGIW *SV QSVI MRJSVQEXMSR VIKEVHMRK QQ TMXGL STXMSR WII p8ETI

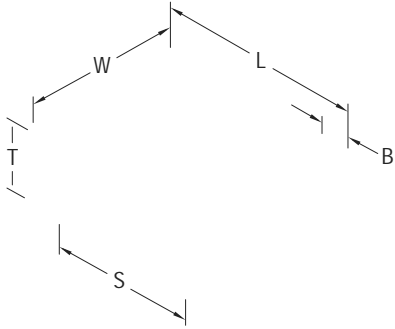
&IRIαXW GSRX H

u 4VIJGVETIEG WXSPEORMSRRIUYIEGMIRXLSI, ^VERKI
 u 2SEEGM GERQIXLW TIGS KTPWHH ZB XEKI
 u 2IKP QEFGI GERQIXLW TIGS Q TIVE JSYQ q'XS q'
 u 2SEEGM XIEFGI XQM
 u 2SR #S M QW RQ MMR R K P Θ S & MSR W
 u TYQ X XRM TP X XQH R E M M P S [M B K G I P W B H I V E F M P M X]
 u 7RTFX XW Q M R E M M S K R M S R M P E S R W Y I W X F Q M R Q Y Q

%TTPMGEXMSRW

8]T MGTETP M GERQIXLW TIGS KTPWHH ZB XEKI G MUMXW BSRW V GY XLPWM & Y V VHIIGS YTPMRK
 F]TE WPKIXMRKZSPIREKTTVIFVSGDRR KÜ-® G%B,^ G R(H€@G R(H< ptp PQ€-šÉá âp

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



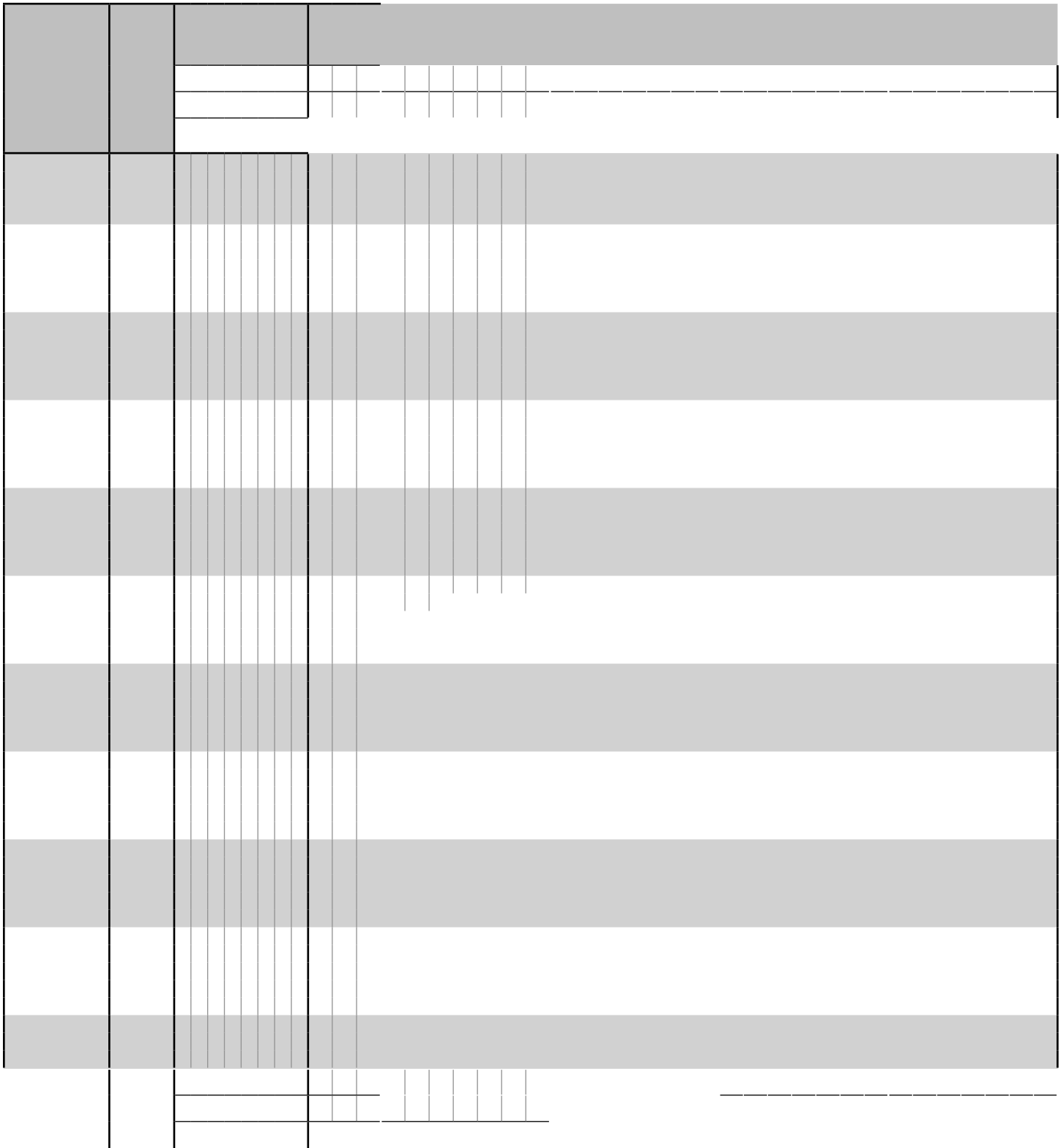
8EFPI % i 'ETEGMXERGI 6ERKI 7IPIGXMSR ;EXIVJEPP



'ETEGMXERGI VERKI -RGPYHIW) HIGELI ZEPYIW SRP] M I
\\z %ZEMPEFPI SRP] MR (. / 1 XSPIVERGI
\\s %ZEMPEFPI SRP] MR . / 1 XSPIVERGI
8LIWI TVSHYGXW EVI TVSXIGXIH YRHIV 97 4EXIRXW

SXLIV TEXIRXW

8EFPI % i 'ETEGMXERGI 6ERKI 7IPIGXMSR ;EXIVJEPP



'ETEGMXERGI VERKI -RGPYHIW) HIGEH ZEPYIW SRP] M I
 \\z %ZEMPEFPI SRP] MR (. / 1 XSPIVERGI
 \\s %ZEMPEFPI SRP] MR . / 1 XSPIVERGI
 8LIWI TVSHYGXW EVI TVSXIGXIH YRHIV 97 4EXIRXW

SXLIV TEXIRXW

8EFPI & i 'ETEGMXERGI 6ERKI 7IPIGXMSR ;EXIVJEPP



'ETEGMXERGI VERKI -RGPYHIW) HIGEH ZEPYIW SRP] M I
8LIWI TVSHYGXW EVI TVSXIGXIH YRHIV 97 4EXIRXW

SXLIV TEXIRXW

8EFPI % i 'LMT 8LMGORIWW 8ETI 6IIP 4EGOEKMRK 5Y

8LMGORIWW 'SHI	7M^I 6ERKI	8LMGORIWW 6ERKI	4ETI QQ	5YER 6IIP	XMX] 6IIP	4PEWXM 6IIP	5YER 6IIP	XMX] 6IIP
AB	0201	0.30±0.03	15,000	0	0	0		
BB	0402	0.50±0.05	10,000	50,000	0	0		
BD	0402	0.55±0.05	10,000	50,000	0	0		
'*	0603	0.80±0.07	4,000	15,000	0	0		
CH	0603	0.85±0.07	4,000	10,000	0	0		
DM	0805	0.70±0.20	4,000	15,000	0	0		
DN	0805	0.78±0.10	4,000	15,000	0	0		
DP	0805	0.90±0.10	4,000	15,000	0	0		
DE	0805	1.00±0.10	0	0	2,500	10,000		
(*	0805	1.10±0.10	0	0	2,500	10,000		
DG	0805	1.25±0.15	0	0	2,500	10,000		
EB	1206	0.78±0.10	4,000	10,000	4,000	10,000		
EC	1206	0.90±0.10	0	0	4,000	10,000		
ED	1206	1.00±0.10	0	0	2,500	10,000		
EE	1206	1.10±0.10	0	0	2,500	10,000		
)*	1206	1.20±0.15	0	0	2,500	10,000		
EH	1206	1.60±0.20	0	0	2,000	8,000		
* &	1210	0.78±0.10	0	0	4,000	10,000		
* '	1210	0.90±0.10	0	0	4,000	10,000		
*)	1210	1.00±0.10	0	0	2,500	10,000		
**	1210	1.10±0.10	0	0	2,500	10,000		
* +	1210	1.25±0.15	0	0	2,500	10,000		
*,	1210	1.55±0.15	0	0	2,000	8,000		
* 1	1210	1.70±0.20	0	0	2,000	8,000		
* .	1210	1.85±0.20	0	0	2,000	8,000		
*/	1210	2.10±0.20	0	0	2,000	8,000		
NC	1706	1.00±0.15	0	0	4,000	10,000		
0*	1808	1.00±0.15	0	0	2,500	10,000		
GB	1812	1.00±0.10	0	0	1,000	4,000		
GD	1812	1.25±0.15	0	0	1,000	4,000		
GH	1812	1.40±0.15	0	0	1,000	4,000		
GG	1812	1.55±0.10	0	0	1,000	4,000		
GK	1812	1.60±0.20	0	0	1,000	4,000		
GJ	1812	1.70±0.15	0	0	1,000	4,000		
GN	1812	1.70±0.20	0	0	1,000	4,000		
GM	1812	2.00±0.20	0	0	500	2,000		
HB	1825	1.10±0.15	0	0	1,000	4,000		
HE	1825	1.40±0.15	0	0	1,000	4,000		
HG	1825	1.60±0.20	0	0	1,000	4,000		
JB	2220	1.00±0.15	0	0	1,000	4,000		
JD	2220	1.30±0.15	0	0	1,000	4,000		
JE	2220	1.40±0.15	0	0	1,000	4,000		
.*	2220	1.50±0.15	0	0	1,000	4,000		
JG	2220	1.70±0.15	0	0	1,000	4,000		
JL	2220	2.00±0.20	0	0	500	2,000		
KE	2225	1.40±0.15	0	0	1,000	4,000		
8LMGORIWW 'SHI	7M^I 6ERKI	8LMGORIWW 6ERKI	4ETI QQ	5YER 6IIP	XMX] 6IIP	4PEWXM 6IIP	5YER 6IIP	XMX] 6IIP

4EGOEKI UYERXMX] FEWIH SR #RMWLIH GLMT XLMGORIWW WTIGM#GEXMSRW
 1 -J SVHIVMRK YWMRK XLI QQ 8ETI ERH 6IIP TMXGL STXMSR XLI TEGOEKMRK UYERX
 QIXVMG GEWI WM^I HIZMGIW *SV QSVI MRJSVQEXMSR VIKEVHMRK QQ TMX

8EFPI & i & YPO 4EGOEKMRK 5YERXXMIW

4EGOEKMRK 8]T+		0SSWI 4EGOEKMRK	
4EGOEKMRK		& Y & HJEYPX	
4EGOEKMRK		N/A ²	
'EWI 7M^I		4EGOEKMRK 5YERXXMIW	
EIA (in)	Metric (mm)	1MRMQYQ	1E\MQYQ
0402	1005	1	50,000
0603	1608		
0805	2012		
1206	3216		
1210	3225		
1808	4520		20,000
1812	4532		
1825	4564		
2220	5650		
2225	5664		

TMIGIW YRMX TEGO

¹ 8LI 4EGOEKMRK ' 7TIG MWE XS HMKMX GSHI [LMGL MHIRXMIW XLI TEGOEKMRK MRGPYHIH MR XLI XLXLVSYKL RH GLEVEGXIV TSWMXMSRW SJ XLI SVHIVMRK GSH 'SQQIVGMEP +VEHI TVSHYGX SVHIVIH [MXLSYX E TEGOEKMRK ' 7TIG [MPP HIJEYPX X bag packaging option for Automotive Grade products.

² % TEGOEKMRK ' 7TIG WII RSXI EFE 2 GOEE €

8EFPI i 'LMT 'ETEGMXSV 0ERH 4EXXIVR (IWMKR 6IGSQ

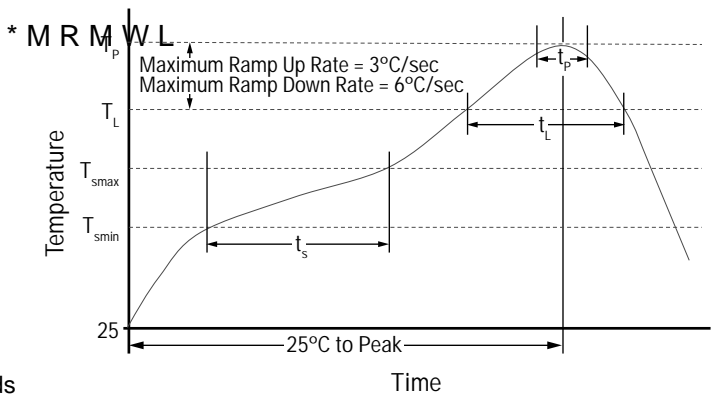
)-% 7M^ 'SH	1IXV 7M^ 'SH	(IRWMX] 0IZIP %					(IRWMX] 0IZIP &					(IRWMX] 0IZIP '				
		C	Y	X	:	:	C	Y	X	:	:	C	Y	X	:	:
0201	0603	0.38	0.56	0.52	1.80	1.00	0.33	0.46	0.42	1.50	0.80	0.28	0.36	0.32	1.20	0.60
0402	1005	0.50	0.72	0.72	2.20	1.20	0.45	0.62	0.62	1.90	1.00	0.40	0.52	0.52	1.60	0.80
0603	1608	0.90	1.15	1.10	4.00	2.10	0.80	0.95	1.00	3.10	1.50	0.60	0.75	0.90	2.40	1.20
0805	2012	1.00	1.35	1.55	4.40	2.60	0.90	1.15	1.45	3.50	2.00	0.75	0.95	1.35	2.80	1.70
1206	3216	1.60	1.35	1.90	5.60	2.90	1.50	1.15	1.80	4.70	2.30	1.40	0.95	1.70	4.00	2.00
1210	3225	1.60	1.35	2.80	5.65	3.80	1.50	1.15	2.70	4.70	3.20	1.40	0.95	2.60	4.00	2.90
1210																

7SPHIVMRK 4VSGIWW

6IGSQQIRHH 7SPHIVMRK 8IGLRMUYI
 7PHIEZIS WFSHV S J S) %GW WMMW ER
 %FB X M) %GW WMMW MFCMM XISW B PV S S R P

6IGSQQIRHH 6I S[7SPHIVMRK 4VS PI
 /) 1) 8 M VQ M P V M Y W Q E S Y R X P X V G P V E F G E T G E G M X (S O' W W E V G S Q T E) X M K E Z I W M B K P E P
 G S R Z I G O M S F R T S L V E W I F S X I G L R M U Y U W E S X M I R K S Q T S R M W G S Q Q I R S H M H X V I Q L I V Q E P
 W X V I W Y W M I G S Q Q I T R V S O S I R H M S O M S R Z W G R M S I F S I I F I G L T V S G B I R H M S X M S I R W
 . 7 8 (W X E R J S O S M W X I R W I X K M X M R M I I Z M G E W E J I N P X L V E Q E R M O S Y Q W I F S T E W W I W
 E X L I W S R H M X M S R W

4VS PI *IE XYVI	8IVQMREXMSR	
	SnPb	1 EX XIR
4VILIE X 7SE		
8IQTIVEXYVI 1M _{Smin}	q'	q'
8IQTIVEIXEYMQ 8Q _{Smax}	q'	q'
Time (t) from T _{Smin} to T _{Smax}	60 – 120 seconds	60 – 120 seconds
Ramp-Up Rate _L (t _p)	q' WIGS QE\MQYQ	q' WIGS QE\MQYQ
0MU Y M H S T Y W E X Y V I	q'	q'
8M Q S Z O W Y M H S Y W	60 – 150 seconds	60 – 150 seconds
4IE Q T I V E X Y V I	q'	q'
8M Q M L M R S J E M Q Y Q	20 seconds	30 seconds
4IE Q T I V E X Y V I	QE\MQYQ	QE\MQYQ
Ramp-Down Rate _p (t _L)	q' WIGS QE\MQYQ	q' WIGS QE\MQYQ
8M Q I q' X S I E O	Q R I Y X I W	Q R I Y X I W
8IQTIVEXYVI	QE\MQYQ	QE\MQYQ



2SXI %PP XIQTIVEXYVIW VIJIV XS XLI GIRXIV SJ XLI TEGOEKI QIEWYVIH SR XLI
 GETEGM XSV FSH] WYVJEGI XLEX MW JEGMRK YT HYVMRK EWWIQFP] VI S[

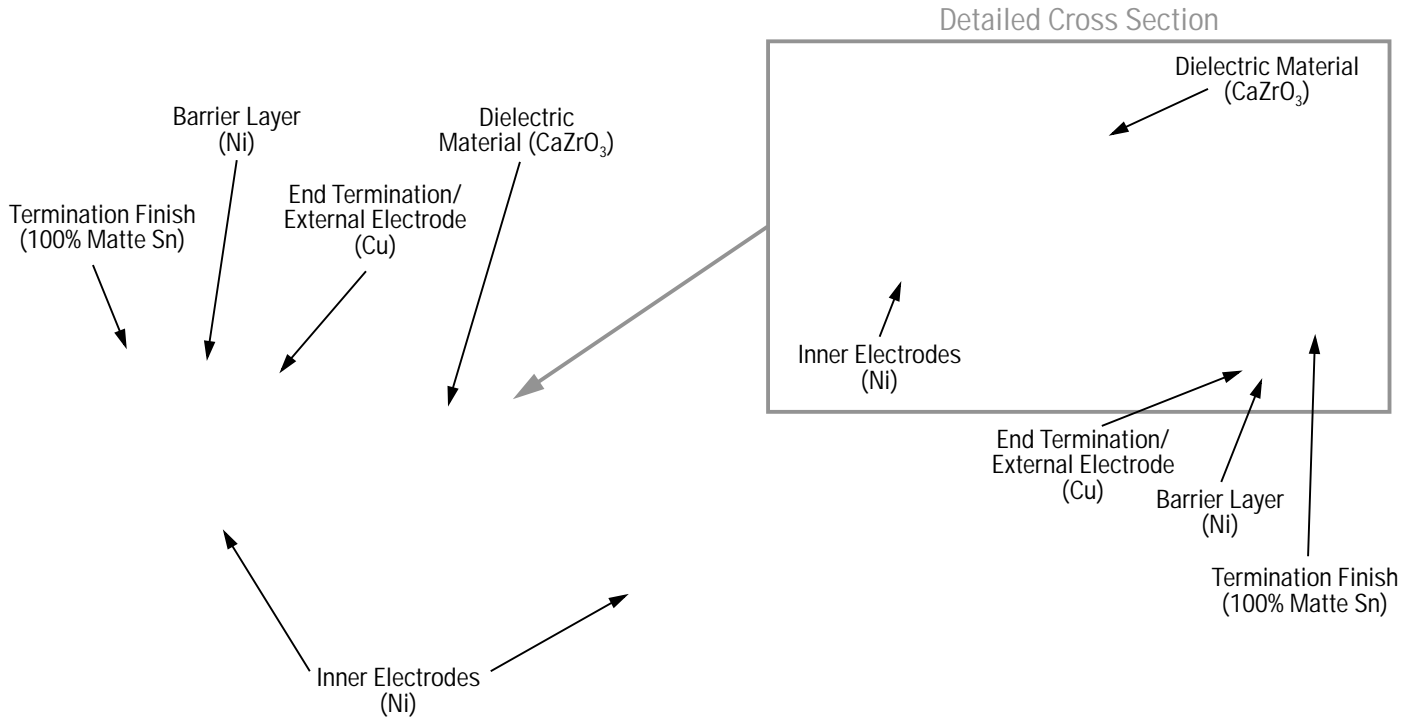
8EFPI i 4IVJSVQERGI 6IPMEFMPMX] 8IWX 1IXLSHW E

7XVIWW	6IJIVIRGI	8IWX SV -RWTIGXMSR 1IXLSH
8IVQMREPRKXL	JIS-C-6429	%TTIRHM\ 2SXI 7XERHEVH XIVQMREXMSR W]WX JS'V+ *PI\XFR QMRVE X\X\$CQ Q QMRMQYQ
&SE*PH	JIS-C-6429	1EKRM GEXSRHRMXMSRW
Solderability	J-STD-002	E1IXLSHL\$V\X q'HMLEEX q'
		F1IXLSBX q'G\IKSV]
		G1IXLSH\IKS\X q'
8IQTIVE XGPRM RK .1)X(LS%)]GPIW — q'XS q' 1IEWYVIQIRX EX LS GSRGPYWMSR
&MEYQHMHM X]	1-0i78(i 1IXLSH 103	0SEH ,YQMhMX] LSYVW q' 6, ERH VEXIH 1IEWYVIQIRX EX LSYVW — LSYVW E]XIV XIWX
1SMW6YMMWX ERGI	1-0i78(i 1IXLSH 106	OS[:SPX ,YQMhMX] LSYVW q' 6, ERH : 1IEWYVIQIRX EX LSYVW — LSYVW E]XIV XIWX
8LIVQE BGO	1-0i78(i 1IXLSH 107	X! LSYVW G]GPI 7XITW E ERH FRSX VIUYMVI 1IEWYVIQIRX EX LSYVW — LSYVW E]XIV XIWX
,M8LQTIV EOMVI	1-0i78(i 1IXLSH 108 /EIA-198	— q' q' 2SXI 2YQFIV SJ G]GPIW VIUYMVIH i WIGSRHW H[IPP XMQI i QMRYXIW %MV i %MV
7XSE KJM	1-0i78(i 1IXLSH 108	LSYV\XV q' q]S\ 6> 9ERH : [MXkVE X]SIP XEETKIP MIH
:MEXMSR	1-0i78(i 1IXLSH 204	q' :(' JSV LSYVW
1IGLERMGP	1-0i78(i 1IXLSH 213	K W JSV QMRYXIW G]GPIW IEGL SJ SVMIRX WIGY S MSR RP S R\K RHWIG Y S MRX SW S]VT SW M H]W XV QSYRXIH [MXLMR JVSQ ER] WIGYVI TSMRX 8IWX
Resistance to Solvents	1-0i78(i 1IXLSH 215	*MKYSJ IXLSH'SRHM'XMSR
		%HEUYI \$YWG LIQ MBG]EIPP IESRUYMZEPIRX

7XSVEKI ERH ,ERHPMRK

'IVE QMLC E TE GMLSSYMMK SWRIS V QSEPOINRZIM VSR QMRXOL MTLWQ W EPV]IWW S F M R X SXURZMVSRQIRXW

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



' E T E G M X S V 1 E V O M R K 3 T X M S R E P

0 E V Q I E V O S M R M B S E Z E M S R E F P I

u ' + 9 R V R F R I 6 E R = : H M I G X V M G I W

• EIA 002 case size devices

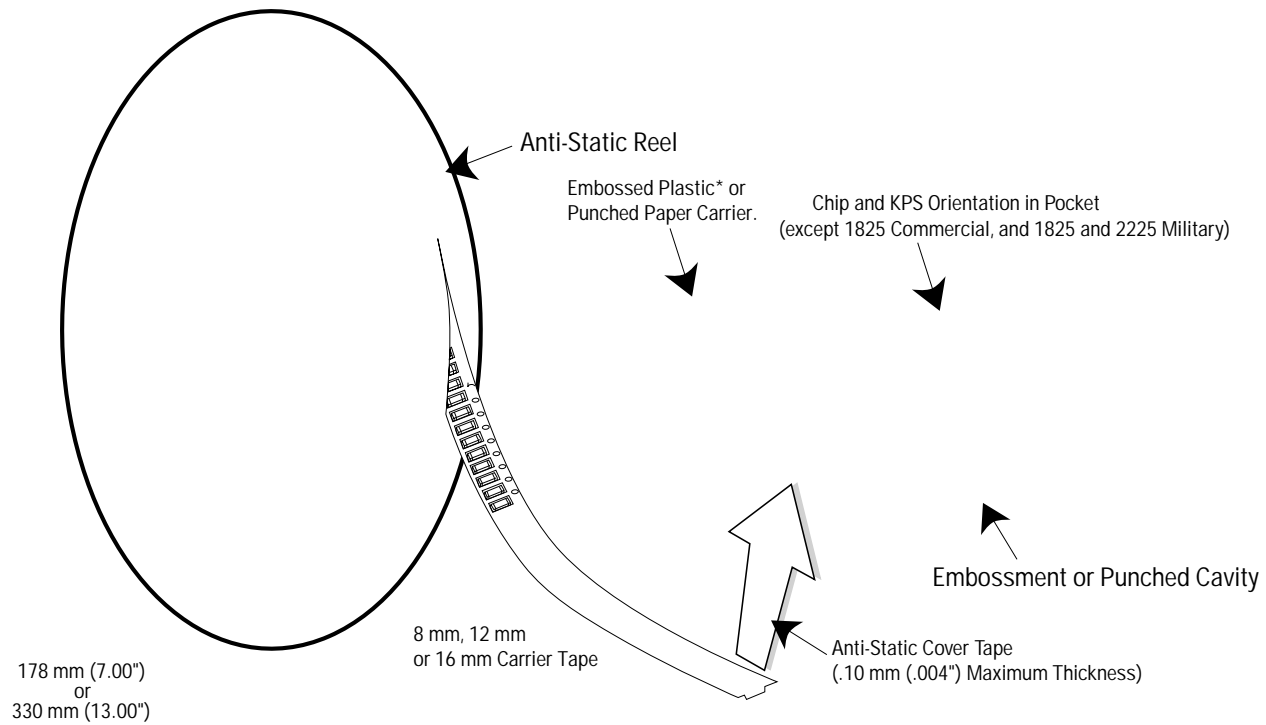
u) - % G W W M H Z M Q M X P M B P I Q M R S X M S R

u / 4' S Q Q I V E M S B Q S X W Z I M E X G C H Z I M G I W

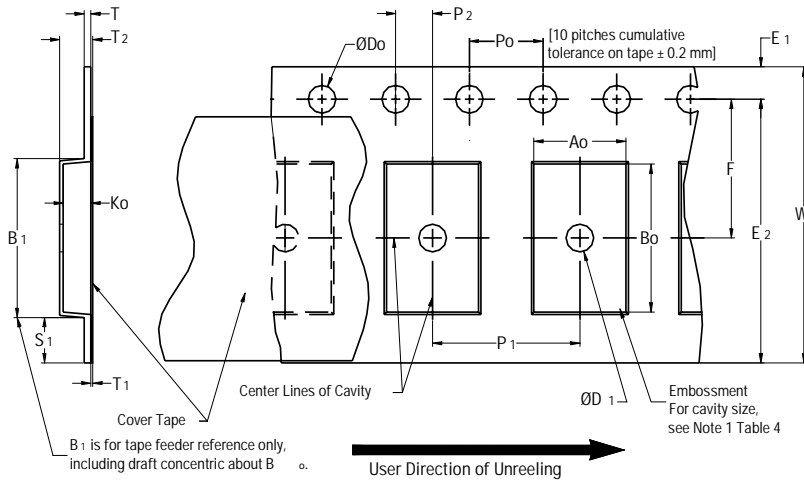
8 L I V G I E T E G E M W S T W P R V Q B S Q I H J

8ETI 6IIP 4EGOEKMRK -RJSVQEXMSR

/)1)8 SJJIVW QYPXMPEJIV GIVEQMG GLMT GETEGMXSVW TEGOEKIH MR
)-% 7XERHEVH 8LMW TEGOEKMRK W]WXIQ MW GSQTEXMFPI [MXL EF
HIXEMPW SR VIIPMRK UYERXMXMIW JSV GSQQIVGM EP GLMTW



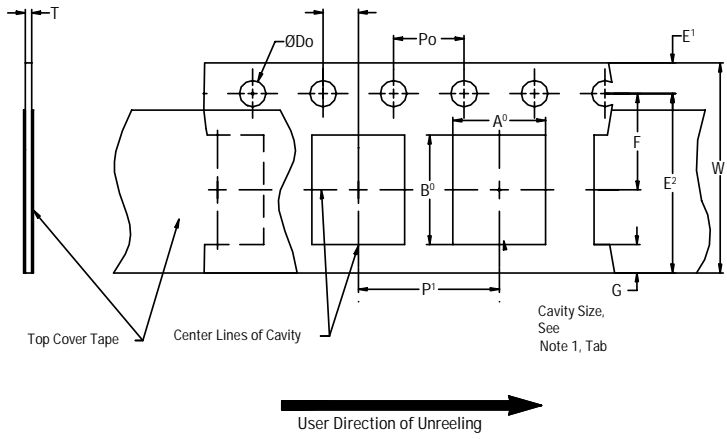
* MKYVI i) QFSWWIH 4PEWXMG 'EVVMIV 8ETI (MQIRWM



8EFPI i) QFSWWIH 4PEWXMG 'EVVMIV 8ETI (MQIRWMS
 1IXVMG [MPP KSZIVR

'SRWXERX (MQIRWMSRW j 1MPPMQIXIVW -RGLIW									
Tape Size	D ₀	D ₁ 1 M R M Note 1	E ₁	P ₀	P ₂	R Referenc Note 2	S ₁ 1 M R M Note 3	T 1 E \ M Q	T ₁ 1 E \ M Q

* MKYVI i 4YRGLIH 4ETIV 'EVVMIV 8ETI (MQIRWMSRW



4 EGOEKMRK -RJSVQEXMSR 4IVJSVQERGI 2SXIW

'SZIV 8ETI &VIEO *SVGI /K QMRMQYQ

'SZIV 8ETI 4IIP 7XVIRKXL SJ XLI GSZIV XETI JVSQ XLI

8ETI ; MHXL	4IIP 7XVIRKXL			
8 mm	XS	2I[XSR	XS	KJ
12 and 16 mm	XS	2I[XSR	XS	KJ

8LI HMVIGXMSR SJ XLI TYP P WLEPP FI STTSWMXI XLI HMVIGXMSR SJ X
 q XS q JVSQ XLI TPERI SJ XLI GEVVMIV XETI (YVMRK TIIPMRK XL
 r QQ QMRYXI
 0EFIPMRK &EV GSHI PEFIPMRK WXERHEVH SV GYWXSQ WLEPP FI S
 7XERHEVHW ERH .

*MKYVI i 1E\MQYQ 'SQTSRIRX 6SXEXMSR

* MKYVI i 6 IIP (MQIRWMSRW

/)1)8)PIGXVSRMG 'SVTSVEXMSR 7EPIW 3J α GIW

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

(MWGP EMQIV

%PP TVSHYGX WTIGM α GEXMSRW WXEXIQIRXW MRJSVQEXMSR ERH HEXE GSPPIGX MZIP] XLI p
GLIGOMRK ERH ZIVMJ]MRK XLI I\XIRX XS [LMGL XLI -RJSVQEXMSR GSRXEMRIH MR XLMW TYFPMO
%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 α GEPP] HMWGP EMQ
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
%PXL SYKL /)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 VIHRYRHERGMIW MR SVHIV XS IRWYV
TVSTIVX] HEQEKI
%PXL SYKL EPP TVSHYGXiVIPEXIH [EVRMRKW GEYXMSRW ERH RSXIW QYWX FI SFWIVZIH XLI GY
QIEWYVIW QE] RSX FI VIUYMVIH