

MLCC Tin/Lead Termination “B”



General Specifications



AVX Corporation will support those customers for commercial and military Multilayer Ceramic Capacitors with a termination consisting of 5% minimum lead. This termination is indicated by the use of a “B” in the 12th position of the AVX Catalog Part Number. This fulfills AVX’s commitment to providing a full range of products to our customers. AVX has provided in the following pages a full range of values that we are currently offering in this special “B” termination. Please contact the factory if you require additional information on our MLCC Tin/Lead Termination “B” products.

Not RoHS Compliant

PART NUMBER (see page 2 for complete part number explanation)

LD05	5	A	101	J	A	B	2	A
Size	Voltage	Dielectric	Capacitance Code (In pF)	Capacitance Tolerance	Failure Rate	Terminations	Packaging	Special Code
LD02 - 0402 LD03 - 0603 LD04 - 0504* LD05 - 0805 LD06 - 1206 LD10 - 1210 LD12 - 1812 LD13 - 1825 LD14 - 2225 LD20 - 2220	6.3V = 6 10V = Z 16V = Y 25V = 3 35V = D 50V = 5 100V = 1 200V = 2 500V = 7	COG (NP0) = A X7R = C X5R = D X8R = F	2 Sig. Digits + Number of Zeros	B = ±.10 pF (<10pF) C = ±.25 pF (<10pF) D = ±.50 pF (<10pF) F = ±1% (≥ 10 pF) G = ±2% (≥ 10 pF) J = ±5% K = ±10% M = ±20%	A = Not Applicable	B = 5% min lead X = FLEXITERM® with 5% min lead**	2 = 7" Reel 4 = 13" Reel 7 = Bulk Cass. 9 = Bulk	A = Std. Product
						**X7R only	Contact Factory For Multiples	

*LD04 has the same CV ranges as LD03.

NOTE: Contact factory for availability of Tolerance Options for Specific Part Numbers.
Contact factory for non-specified capacitance values.

See FLEXITERM® section
for CV options

NP0	Refer to page 4 for Electrical Graphs
X7R	Refer to page 17 for Electrical Graphs
X7S	Refer to page 21 for Electrical Graphs
X5R	Refer to page 24 for Electrical Graphs
Y5V	Refer to page 27 for Electrical Graphs

MLCC Tin/Lead Termination "B"

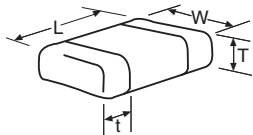


Capacitance Range (NP0 Dielectric)

PREFERRED SIZES ARE SHADED

SIZE	LD02			LD03			LD05				LD06								
Soldering	Reflow/Wave			Reflow/Wave			Reflow/Wave				Reflow/Wave								
Packaging	All Paper			All Paper			Paper/Embossed				Paper/Embossed								
(L) Length	mm (in.)			mm (in.)			mm (in.)				mm (in.)								
(W) Width	mm (in.)			mm (in.)			mm (in.)				mm (in.)								
(t) Terminal	mm (in.)			mm (in.)			mm (in.)				mm (in.)								
WVDC	16	25	50	16	25	50	100	16	25	50	100	200	16	25	50	100	200	500	
Cap (pF)	0.5	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	1.0	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	1.2	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	1.5	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	1.8	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	2.2	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	2.7	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	3.3	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	3.9	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	4.7	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	5.6	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	6.8	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	8.2	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	10	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	12	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	15	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	18	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	22	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	27	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	33	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	39	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	47	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	56	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	68	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	82	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	100	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	120	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	150	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	180	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J
	220	C	C	C	G	G	G	G	J	J	J	J	J	J	J	J	J	J	M
	270	C	C	C	G	G	G	G	J	J	J	J	M	J	J	J	J	J	M
	330	C	C	C	G	G	G	G	J	J	J	J	M	J	J	J	J	J	M
	390	C	C	C	G	G	G	G	J	J	J	J	M	J	J	J	J	J	M
	470	C	C	C	G	G	G	G	J	J	J	J	M	J	J	J	J	J	M
	560				G	G	G		J	J	J	J	M	J	J	J	J	J	M
	680				G	G	G		J	J	J	J		J	J	J	J	J	P
	820				G	G	G		J	J	J	J		J	J	J	J	M	
	1000				G	G	G		J	J	J	J		J	J	J	J	Q	
	1200								J	J	J			J	J	J	J	Q	
	1500								J	J	J			J	J	M	Q		
	1800								J	J	J			J	J	M	M		
	2200								J	J	N			J	J	M	P		
	2700								J	J	N			J	J	M	P		
	3300								J	J				J	J	M	P		
	3900								J	J				J	J	M	P		
	4700								J	J				J	J	M	P		
	5600													J	J	M			
	6800													M	M				
	8200													M	M				
Cap (µF)	0.010													M	M				
	0.012																		
	0.015																		
	0.018																		
	0.022																		
	0.027																		
	0.033																		
	0.039																		
	0.047																		
	0.068																		
	0.082																		
	0.1																		
WVDC	16	25	50	16	25	50	100	16	25	50	100	200	16	25	50	100	200	500	
SIZE	LD02			LD03			LD05				LD06								

Letter	A	C	E	G	J	K	M	N	P	Q	X	Y	Z
Max. Thickness	0.33 (0.013)	0.56 (0.022)	0.71 (0.028)	0.90 (0.035)	0.94 (0.037)	1.02 (0.040)	1.27 (0.050)	1.40 (0.055)	1.52 (0.060)	1.78 (0.070)	2.29 (0.090)	2.54 (0.100)	2.79 (0.110)
	PAPER					EMBOSSSED							



MLCC Tin/Lead Termination "B"

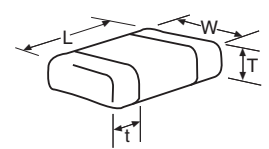


Capacitance Range (NP0 Dielectric)

PREFERRED SIZES ARE SHADED

SIZE		LD10					LD12					LD13			LD14		
Soldering		Reflow Only					Reflow Only					Reflow Only			Reflow Only		
Packaging		Paper/Embossed					All Embossed					All Embossed			All Embossed		
(L) Length	mm	3.20 ± 0.20 (0.126 ± 0.008)					4.50 ± 0.30 (0.177 ± 0.012)					4.50 ± 0.30 (0.177 ± 0.012)			5.72 ± 0.25 (0.225 ± 0.010)		
(W) Width	mm	2.50 ± 0.20 (0.098 ± 0.008)					3.20 ± 0.20 (0.126 ± 0.008)					6.40 ± 0.40 (0.252 ± 0.016)			6.35 ± 0.25 (0.250 ± 0.010)		
(t) Terminal	mm	0.50 ± 0.25 (0.020 ± 0.010)					0.61 ± 0.36 (0.024 ± 0.014)					0.61 ± 0.36 (0.024 ± 0.014)			0.64 ± 0.39 (0.025 ± 0.015)		
WVDC		25	50	100	200	500	25	50	100	200	500	50	100	200	50	100	200
Cap (pF)	0.5																
	1.0																
	1.2																
	1.5																
	1.8																
	2.2																
	2.7																
	3.3																
	3.9																
	4.7																
	5.6																
	6.8																
	8.2																
	10					J											
	12					J											
	15					J											
	18					J											
	22					J											
	27					J											
	33					J											
	39					J											
	47					J											
	56					J											
	68					J											
	82					J											
	100					J											
	120					J											
	150					J											
	180					J											
	220					J											
	270					J											
	330					J											
	390					M											
	470					M											
	560	J	J	J	J	M											
	680	J	J	J	J	M											
	820	J	J	J	J	M											
	1000	J	J	J	J	M	K	K	K	K	M	M	M	M	M	M	P
	1200	J	J	J	M	M	K	K	K	K	M	M	M	M	M	M	P
	1500	J	J	J	M	M	K	K	K	K	M	M	M	M	M	M	P
	1800	J	J	J	M		K	K	K	K	M	M	M	M	M	M	P
	2200	J	J	J	Q		K	K	K	K	P	M	M	M	M	M	P
	2700	J	J	J	Q		K	K	K	P	Q	M	M	M	M	M	P
	3300	J	J	J			K	K	K	P	Q	M	M	M	M	M	P
	3900	J	J	M			K	K	K	P	Q	M	M	M	M	M	P
	4700	J	J	M			K	K	K	P	Q	M	M	M	M	M	P
	5600	J	J				K	K	M	P	X	M	M	M	M	M	P
	6800	J	J				K	K	M	X		M	M	M	M	M	P
	8200	J	J				K	M	M			M	M		M	M	P
Cap (µF)	0.010	J	J				K	M	M			M	M		M	M	P
	0.012	J	J				K	M				M	M		M	M	P
	0.015						M	M				M	M		M	M	Y
	0.018						M	M				P	M		M	M	Y
	0.022						M	M				P			M	Y	Y
	0.027						M	M				P			P	Y	Y
	0.033						M	M				P			P		
	0.039						M	M				P			P		
	0.047						M	M				P			P		
	0.068						M	M							P		
	0.082						M	M							Q		
	0.1														Q		
WVDC		25	50	100	200	500	25	50	100	200	500	50	100	200	50	100	200

Letter	A	C	E	G	J	K	M	N	P	Q	X	Y	Z
Max. Thickness	0.33 (0.013)	0.56 (0.022)	0.71 (0.028)	0.90 (0.035)	0.94 (0.037)	1.02 (0.040)	1.27 (0.050)	1.40 (0.055)	1.52 (0.060)	1.78 (0.070)	2.29 (0.090)	2.54 (0.100)	2.79 (0.110)
	PAPER					EMBOSSSED							



MLCC Tin/Lead Termination “B”



Capacitance Range (X8R Dielectric)

SIZE		LD03		LD05		LD06	
	WVDC	25V	50V	25V	50V	25V	50V
271	Cap 270	G	G				
331	(pF) 330	G	G	J	J		
471	470	G	G	J	J		
681	680	G	G	J	J		
102	1000	G	G	J	J	J	J
152	1500	G	G	J	J	J	J
182	1800	G	G	J	J	J	J
222	2200	G	G	J	J	J	J
272	2700	G	G	J	J	J	J
332	3300	G	G	J	J	J	J
392	3900	G	G	J	J	J	J
472	4700	G	G	J	J	J	J
562	5600	G	G	J	J	J	J
682	6800	G	G	J	J	J	J
822	8200	G	G	J	J	J	J
103	Cap 0.01	G	G	J	J	J	J
123	(µF) 0.012	G	G	J	J	J	J
153	0.015	G	G	J	J	J	J
183	0.018	G	G	J	J	J	J
223	0.022	G	G	J	J	J	J
273	0.027	G	G	J	J	J	J
333	0.033	G	G	J	J	J	J
393	0.039	G	G	J	J	J	J
473	0.047	G	G	J	J	J	J
563	0.056	G		N	N	M	M
683	0.068	G		N	N	M	M
823	0.082			N	N	M	M
104	0.1			N	N	M	M
124	0.12			N	N	M	M
154	0.15			N	N	M	M
184	0.18			N		M	M
224	0.22			N		M	M
274	0.27					M	M
334	0.33					M	M
394	0.39					M	
474	0.47					M	
684	0.68						
824	0.82						
105	1						
SIZE	WVDC	25V	50V	25V	50V	25V	50V
		LD03		LD05		LD06	

Letter	A	C	E	G	J	K	M	N	P	Q	X	Y	Z
Max. Thickness	0.33 (0.013)	0.56 (0.022)	0.71 (0.028)	0.90 (0.035)	0.94 (0.037)	1.02 (0.040)	1.27 (0.050)	1.40 (0.055)	1.52 (0.060)	1.78 (0.070)	2.29 (0.090)	2.54 (0.100)	2.79 (0.110)
	PAPER					EMBOSSSED							

MLCC Tin/Lead Termination “B”



Capacitance Range (X7R Dielectric)

PREFERRED SIZES ARE SHADED

SIZE	LD02			LD03						LD05						LD06									
Soldering	Reflow/Wave			Reflow/Wave						Reflow/Wave						Reflow/Wave									
Packaging	All Paper			All Paper						Paper/Embossed						Paper/Embossed									
(L) Length	1.00 ± 0.10 (0.040 ± 0.004)			1.60 ± 0.15 (0.063 ± 0.006)						2.01 ± 0.20 (0.079 ± 0.008)						3.20 ± 0.20 (0.126 ± 0.008)									
(W) Width	0.50 ± 0.10 (0.020 ± 0.004)			0.81 ± 0.15 (0.032 ± 0.006)						1.25 ± 0.20 (0.049 ± 0.008)						1.60 ± 0.20 (0.063 ± 0.008)									
(t) Terminal	0.25 ± 0.15 (0.010 ± 0.006)			0.35 ± 0.15 (0.014 ± 0.006)						0.50 ± 0.25 (0.020 ± 0.010)						0.50 ± 0.25 (0.020 ± 0.010)									
WDC	16	25	50	6.3	10	16	25	50	100	200	6.3	10	16	25	50	100	200	6.3	10	16	25	50	100	200	500
Cap (pF)																									
100																									
150																									
220			C																						
330			C					G	G	G		J	J	J	J	J	J								K
470			C					G	G	G		J	J	J	J	J	J								K
680			C					G	G	G		J	J	J	J	J	J								K
1000			C					G	G	G		J	J	J	J	J	J								K
1500			C					G	G	G		J	J	J	J	J	J		J	J	J	J	J	J	M
2200			C					G	G	G		J	J	J	J	J	J		J	J	J	J	J	J	M
3300		C	C					G	G	G		J	J	J	J	J	J		J	J	J	J	J	J	M
4700		C	C					G	G	G		J	J	J	J	J	J		J	J	J	J	J	J	M
6800	G	C	C					G	G	G		J	J	J	J	J	J		J	J	J	J	J	J	P
Cap (µF)																									
0.010	C	C						G	G	G		J	J	J	J	J	J		J	J	J	J	J	J	P
0.015	C	C						G	G	G		J	J	J	J	J	J		J	J	J	J	J	J	M
0.022	C	C						G	G	G		J	J	J	J	J	N		J	J	J	J	J	J	M
0.033								G	G	G		J	J	J	J	N	N		J	J	J	J	J	J	M
0.047							G	G	G	G		J	J	J	J	N	N		J	J	J	J	J	J	M
0.068							G	G	G	G		J	J	J	J	N	N		J	J	J	J	J	J	P
0.10		C*					G	G	G	G		J	J	J	J	N	N		J	J	J	J	J	M	P
0.15				G	G	G						J	J	J	N	N	N		J	J	J	J	J	J	Q
0.22				G	G	G						J	J	N	N	N	N		J	J	J	J	J	J	Q
0.33												N	N	N	N	N	N		J	J	M	P	Q	Q	
0.47							J*					N	N	N	N	N	N		M	M	M	P	Q	Q	
0.68							J*	J*				N	N	N					M	M	Q	Q	Q	Q	
1.0							J*	J*				N	N	N*					M	M	Q	Q	Q	Q	
1.5																			P	Q	Q	Q			
2.2				J*											P*				Q	Q	Q				
3.3																									
4.7													P*	P*											
10																			Q*	Q*	Q*				
22																			Q*						
47																									
100																									
WDC	16	25	50	6.3	10	16	25	50	100	200	6.3	10	16	25	50	100	200	6.3	10	16	25	50	100	200	500
SIZE	LD02			LD03						LD05						LD06									

Letter	A	C	E	G	J	K	M	N	P	Q	X	Y	Z
Max. Thickness	0.33 (0.013)	0.56 (0.022)	0.71 (0.028)	0.90 (0.035)	0.94 (0.037)	1.02 (0.040)	1.27 (0.050)	1.40 (0.055)	1.52 (0.060)	1.78 (0.070)	2.29 (0.090)	2.54 (0.100)	2.79 (0.110)
	PAPER					EMBOSSSED							

= Under Development

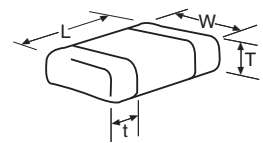
MLCC Tin/Lead Termination “B”



Capacitance Range (X7R Dielectric)

PREFERRED SIZES ARE SHADED

SIZE	LD10								LD12				LD13		LD20				LD14			
	10	16	25	50	100	200	500		50	100	200	500	50	100	25	50	100	200	50	100		
Soldering	Reflow Only								Reflow Only				Reflow Only		Reflow Only				Reflow Only			
Packaging	Paper/Embossed								All Embossed				All Embossed		All Embossed				All Embossed			
(L) Length	3.20 ± 0.20 (0.126 ± 0.008)								4.50 ± 0.30 (0.177 ± 0.012)				4.50 ± 0.30 (0.177 ± 0.012)		5.70 ± 0.40 (0.225 ± 0.016)				5.72 ± 0.25 (0.225 ± 0.010)			
(W) Width	2.50 ± 0.20 (0.098 ± 0.008)								3.20 ± 0.20 (0.126 ± 0.008)				6.40 ± 0.40 (0.252 ± 0.016)		5.00 ± 0.40 (0.197 ± 0.016)				6.35 ± 0.25 (0.250 ± 0.010)			
(t) Terminal	0.50 ± 0.25 (0.020 ± 0.010)								0.61 ± 0.36 (0.024 ± 0.014)				0.61 ± 0.36 (0.024 ± 0.014)		0.64 ± 0.39 (0.025 ± 0.015)				0.64 ± 0.39 (0.025 ± 0.015)			
WVDC	10	16	25	50	100	200	500	50	100	200	500	50	100	25	50	100	200	50	100			
Cap (pF)	100	150	220	330	470	680																
	1000	1500	2200	3300	4700	6800																
Cap (µF)	0.010	0.015	0.022	0.033	0.047	0.068		0.10	0.15	0.22	0.33	0.47	0.68	1.0	1.5	2.2	3.3	4.7	10	22	47	100
	J	J	J	J	J	J	M	K	K	K	K	M	M	X	X	X	X	M	P			
	J	J	J	J	J	J	P	K	K	K	P	M	M	X	X	X	X	M	P			
	J	J	J	J	J	J	Q	K	K	K	Z	M	M	X	X	X	X	M	P			
	J	J	J	J	J	J	M	K	K	K	Z	M	M	X	X	X	X	M	P			
	J	J	J	J	J	J	Z	K	K	P		M	M	X	X	X	X	M	P			
	J	J	J	J	P	Z		K	K	P		M	M	X	X	X	X	M	P			
	M	M	M	M	Q			K	M	X		M	M	X	X	X	X	M	P			
	M	M	P	X	X			M	Q			M	P	X	X			M	P			
	N	N	P	X	Z			M	X			M	P	X	X			M	P			
	N	N	Z	Z	Z			Z	Z			M		X	X			M	X			
	X	X	Z	Z	Z			Z	Z					X	X			M				
	X	X	Z	Z				Z						X	Z							
	X	X	Z	Z				Z						X	Z							
	Z	Z												Z								
	Z																					
	Z																					
	Z																					
WVDC	10	16	25	50	100	200	500	50	100	200	500	50	100	25	50	100	200	50	100			



Letter	A	C	E	G	J	K	M	N	P	Q	X	Y	Z
Max. Thickness	0.33 (0.013)	0.56 (0.022)	0.71 (0.028)	0.90 (0.035)	0.94 (0.037)	1.02 (0.040)	1.27 (0.050)	1.40 (0.055)	1.52 (0.060)	1.78 (0.070)	2.29 (0.090)	2.54 (0.100)	2.79 (0.110)
	PAPER					EMBOSS							



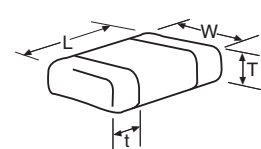
MLCC Tin/Lead Termination “B”



Capacitance Range (X5R Dielectric)

PREFERRED SIZES ARE SHADED

SIZE	LD02	LD03	LD05	LD06	LD10	LD12
Soldering	Reflow/Wave					
Packaging	All Paper		All Paper		Paper/Embossed	
(L) Length	mm (in.)	1.00 ± 0.10 (0.040 ± 0.004)	1.60 ± 0.15 (0.063 ± 0.006)	2.01 ± 0.20 (0.079 ± 0.008)	3.20 ± 0.20 (0.126 ± 0.008)	3.20 ± 0.20 (0.126 ± 0.008)
(W) Width	mm (in.)	0.50 ± 0.10 (0.020 ± 0.004)	0.81 ± 0.15 (0.032 ± 0.006)	1.25 ± 0.20 (0.049 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	2.50 ± 0.20 (0.098 ± 0.008)
(t) Terminal	mm (in.)	0.25 ± 0.15 (0.010 ± 0.006)	0.35 ± 0.15 (0.014 ± 0.006)	0.50 ± 0.25 (0.020 ± 0.010)	0.50 ± 0.25 (0.020 ± 0.010)	0.50 ± 0.25 (0.020 ± 0.010)
WVDC	4 6.3 10 16 25 50	4 6.3 10 16 25 35 50	6.3 10 16 25 35 50	6.3 10 16 25 35 50	4 6.3 10 16 25 35 50	6.3 10 25 50
Cap (pF)	100					
	150					
	220	C				
	330	C				
	470	C				
	680	C				
	1000	C				
	1500	C				
	2200	C				
	3300	C				
	4700	C		G		
	6800	C		G		
Cap (µF)	0.010	C		G		
	0.015	C		G		
	0.022	C		G	N	
	0.033	C		G	N	
	0.047	C		G	N	
	0.068	C		G	N	
	0.10	C		G	N	
	0.15			G	N	
	0.22	C*		G	N	Q
	0.33			G	N	
	0.47	C*		G	N	Q
	0.68	C*		G	N	Q
	1.0	C*		G	N	Q
	1.5			G	N	Q
	2.2	C*		G*	N	Q
	3.3			J*	N	Q
	4.7	E*		J*	N*	Q
	10			K*	N*	Q
	22				P*	Q*
	47					Q*
	100					Q*



Letter	A	C	E	G	J	K	M	N	P	Q	X	Y	Z
Max. Thickness	0.33 (0.013)	0.56 (0.022)	0.71 (0.028)	0.90 (0.035)	0.94 (0.037)	1.02 (0.040)	1.27 (0.050)	1.40 (0.055)	1.52 (0.060)	1.78 (0.070)	2.29 (0.090)	2.54 (0.100)	2.79 (0.110)
	PAPER					EMBOSS							

- = Under Development
- = *Optional Specifications – Contact factory

NOTE: Contact factory for non-specified capacitance values

