

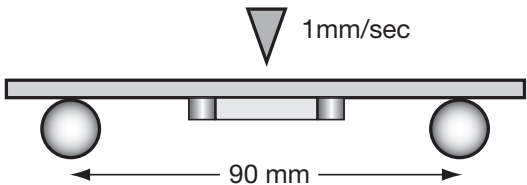
Automotive MLCC

NP0/X7R Dielectric

FLEXITERM® FEATURES

a) Bend Test

The capacitor is soldered to the PC Board as shown:



b) Temperature Cycle testing

FLEXITERM® has the ability to withstand at least 1000 cycles between -55°C and +125°C

Typical bend test results are shown below:

Style	Conventional Term	Soft Term
0603	>2mm	>5
0805	>2mm	>5
1206	>2mm	>5

Automotive MLCC - NP0

Capacitance Range

Soldering		0603			0805			1206					1210			
		Reflow/Wave			Reflow/Wave			Reflow/Wave					Reflow Only			
		25V	50V	100V	25V	50V	100V	25V	50V	100V	200V	500V	25V	50V	100V	200V
100	10pF	G	G	G	J	J	J	J	J	J	J	J				
120	12	G	G	G	J	J	J	J	J	J	J	J				
150	15	G	G	G	J	J	J	J	J	J	J	J				
180	18	G	G	G	J	J	J	J	J	J	J	J				
220	22	G	G	G	J	J	J	J	J	J	J	J				
270	27	G	G	G	J	J	J	J	J	J	J	J				
330	33	G	G	G	J	J	J	J	J	J	J	J				
390	39	G	G	G	J	J	J	J	J	J	J	J				
470	47	G	G	G	J	J	J	J	J	J	J	J				
510	51	G	G	G	J	J	J	J	J	J	J	J				
560	56	G	G	G	J	J	J	J	J	J	J	J				
680	68	G	G	G	J	J	J	J	J	J	J	J				
820	82	G	G	G	J	J	J	J	J	J	J	J				
101	100	G	G	G	J	J	J	J	J	J	J	J				
121	120	G	G	G	J	J	J	J	J	J	J	J				
151	150	G	G	G	J	J	J	J	J	J	J	J				
181	180	G	G	G	J	J	J	J	J	J	J	J				
221	220	G	G	G	J	J	J	J	J	J	J	J				
271	270	G	G	G	J	J	J	J	J	J	J	J				
331	330	G	G	G	J	J	J	J	J	J	J	J				
391	390	G	G		J	J	J	J	J	J	J	J				
471	470	G	G		J	J	J	J	J	J	J	J				
561	560				J	J	J	J	J	J	J	J				
681	680				J	J	J	J	J	J	J	J				
821	820				J	J	J	J	J	J	J	J				
102	1000				J	J	J	J	J	J	J	J	J	J	J	J
122	1200							J	J	J	J	J	J	J	M	M
152	1500							J	M	M	M	M	J	J	M	M
182	1800							J	M	M	M	M	J	J	M	M
222	2200							J	M	M	M	M	J	J	M	M
272	2700												J	J	M	
332	3300												J	J	P	
392	3900												J	J	P	
472	4700												J	J	P	
103	10nF															
		25V	50V	100V	25V	50V	100V	25V	50V	100V	200V	500V	25V	50V	100V	200V
		0603			0805			1206					1210			

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

Automotive MLCC - X7R

Capacitance Range

Soldering			0402			0603						0805						1206						1210				1812		2220					
			Reflow/Wave			Reflow/Wave						Reflow/Wave						Reflow/Wave						Reflow Only				Reflow Only		Reflow Only					
			16V	25V	50V	10V	16V	25V	50V	100V	200V	250V	16V	25V	50V	100V	200V	250V	16V	25V	50V	100V	200V	250V	500V	16V	25V	50V	100V	50V	100V	25V	50V	100V	
221	Cap	220	C	C	C																														
271	(pF)	270	C	C	C																														
331		330	C	C	C																														
391		390	C	C	C																														
471		470	C	C	C																														
561		560	C	C	C																														
681		680	C	C	C																														
821		820	C	C	C																														
102		1000	C	C	C		G	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	J	K	K	K	K	K	K			
182		1800	C	C	C		G	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	J	K	K	K	K	K	K			
222		2200	C	C	C		G	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	J	K	K	K	K	K	K			
332		3300	C	C	C		G	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	J	K	K	K	K	K	K			
472		4700	C	C	C		G	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	J	K	K	K	K	K	K			
103	Cap	0.01	C				G	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	J	K	K	K	K	K	K			
123	(µF)	0.012	C				G	G	G				J	J	J	M	J	J	J	J	J	J	J	J			K	K	K	K	K	K			
153		0.015	C				G	G	G				J	J	J	M	J	J	J	J	J	J	J	J			K	K	K	K	K	K			
183		0.018	C				G	G	G				J	J	J	M	J	J	J	J	J	J	J	J			K	K	K	K	K	K			
223		0.022	C				G	G	G				J	J	J	M	J	J	J	J	J	J	J	J			K	K	K	K	K	K			
273		0.027	C				G	G	G				J	J	J	M	J	J	J	J	J	J	J	J			K	K	K	K	K	K			
333		0.033	C				G	G	G				J	J	J	M	J	J	J	J	J	J	J	J			K	K	K	K	K	K			
473		0.047					G	G	G				J	J	J	M	J	J	J	J	M	J	J	J			K	K	K	K	K	K			
563		0.056					G	G	G				J	J	J	M			J	J	J	M	J	J			K	K	K	M	K	K			
683		0.068					G	G	G				J	J	J	M			J	J	J	M	J	J			K	K	K	M	K	K			
823		0.082					G	G	G				J	J	J	M			J	J	J	M	J	J			K	K	K	M	K	K			
104		0.1					G	G	G				J	J	J	M	M		J	J	J	M	J	J			K	K	K	M	K	K			
124		0.12											J	J	J	M	N		J	J	M	M					K	K	K	P	K	K			
154		0.15											M	N	M	N			J	J	M	M					K	K	K	P	K	K			
224		0.22				G							M	N	M	N			J	M	M	Q					M	M	M	P	M	M			
334		0.33											N	N	M	N			J	M	P	Q					P	P	P	Q	X	X			
474	Cap	0.47											N	N	M	N			M	M	P	Q					P	P	P	Q	X	X			
684		0.68											N	N	N				M	Q	Q	Q					P	P	Q	X	X	X			
105		1											N	N	N				M	Q	Q	Q					P	Q	Q	X	X	X			
155		1.5																	Q	Q	Q						P	Q	Z	Z	X	X			
225		2.2																	Q	Q	Q						X	Z	Z	Z	Z	Z			
335		3.3																	Q	Q							X	Z	Z	Z	Z				
475		4.7																	Q	Q							X	Z	Z	Z	Z				
106		10																									Z	Z						Z	Z
226		22																																Z	
			16V	25V	50V	10V	16V	25V	50V	100V	200V	250V	16V	25V	50V	100V	200V	250V	16V	25V	50V	100V	200V	250V	500V	16V	25V	50V	100V	50V	100V	25V	50V	100V	
			0402			0603						0805						1206						1210				1812		2220					

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						EMBOSSED							

Automotive MLCC - X8R

Capacitance Range

SIZE		0603		0805		1206	
Soldering		Reflow/Wave		Reflow/Wave		Reflow/Wave	
	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						
	WVDC	25V	50V	25V	50V	25V	50V
SIZE		0603		0805		1206	

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