

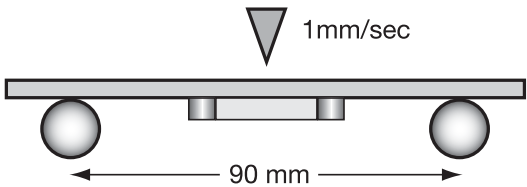
Automotive MLCC

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	0402		0603			0805			1206					1210			
	Reflow/Wave		Reflow/Wave			Reflow/Wave			Reflow/Wave					Reflow Only			
	25V	50V	25V	50V	100V	25V	50V	100V	25V	50V	100V	200V	500V	25V	50V	100V	200V
100 10pF	C	C	G	G	G	J	J	J	J	J	J	J	J				
120 12	C	C	G	G	G	J	J	J	J	J	J	J	J				
150 15	C	C	G	G	G	J	J	J	J	J	J	J	J				
180 18	C	C	G	G	G	J	J	J	J	J	J	J	J				
220 22	C	C	G	G	G	J	J	J	J	J	J	J	J				
270 27	C	C	G	G	G	J	J	J	J	J	J	J	J				
330 33	C	C	G	G	G	J	J	J	J	J	J	J	J				
390 39	C	C	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			G	G		J	J	J	J	J	J	J	J				
681 680			G	G		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				
122 1200																	
152 1500																	
182 1800																	
222 2200																	
272 2700																	
332 3300																	
392 3900																	
472 4700																	
103 10nF																	
	25V	50V	25V	50V	100V	25V	50V	100V	25V	50V	100V	200V	500V	25V	50V	100V	200V
	0402		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					EMBOSSED							

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	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	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	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	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	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	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	J		K	K	K	K	K	K			
563	0.056					G	G	G				J	J	J	M			J	J	J	M	J	J	J		K	K	K	M	K	K			
683	0.068					G	G	G				J	J	J	M			J	J	J	M	J	J	J		K	K	K	M	K	K			
823	0.082					G	G	G				J	J	J	M			J	J	M	J	J	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	J		K	K	K	M	K	K			
124	0.12											J	J	N	N			J	J	M	M					K	K	K	P	K	K			
154	0.15											M	N	N	N			J	J	M	M					K	K	K	P	K	K			
224	0.22				G							M	N	N	N			J	M	M	Q					M	M	M	P	M	M			
334	0.33											N	N	N	N			J	M	P	Q					P	P	P	Q	X	X			
474	0.47											N	N	N	N			M	M	P	Q					P	P	P	Q	X	X			
684	0.68											N	N	N	N			M	Q	Q	Q					P	P	Q	X	X	X			
105	1											N	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	Z			
475	4.7																	Q	Q							X	Z	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. 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							