



**Product Family:** [Multilayer Ceramic Capacitors -Flexible Termination](#)

**Part Number Series:** [CST High Voltage Series](#)



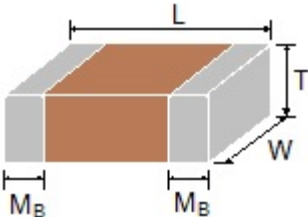
	<p><b>Construction:</b></p> <ul style="list-style-type: none"> <li>Flexible Terminations</li> <li>X7R, NPO dielectric material</li> <li>Wrap around electrodes</li> <li>100% matte tin over Ni terminations with Cu-polymer base (RoHS compliant) RoHS 2011/65/EU compliant and Pb Free terminations)</li> </ul>	<p><b>Features:</b></p> <ul style="list-style-type: none"> <li>0603,0805, 1206, 1210, 1808, and 1812 English sizes</li> <li>0.5pF to 1.0µF capacitance range—high capacitance to size ratio</li> <li>200V to 3000V</li> <li>High volume production suitable for commercial and special applications</li> </ul>
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**Description:**

The CST flexible termination High Voltage series is designed with a polymer layer in the end terminations of product, which can absorb mechanical stress caused by PCB handling in SMT line and also reduce the mechanical impact for the product. These products are ideal for DC to DC converters, back-lighting inverters, high voltage coupling/DC blocking, and snubbers in high frequency power converters.

**Product Dimensions:**

Size Inch (mm)	L (mm)	W (mm)	T (mm)/Symbol		Remark	MB (mm)
0603(1608)	1.60±0.20	0.80±0.10	0.80±0.07	S		0.40±0.15
	1.60±0.30	0.80±0.30	0.80±0.30	X		
0805 (2012)	2.00±0.20	1.25±0.10	0.60±0.10	A		0.50±0.20
			0.80±0.10	B		
	1.25±0.10	D	#			
	2.00±0.30	1.25±0.30	1.25±0.30	I	#	
1206 (3216)	3.20+0.4/-0.1	1.60±0.15	0.80±0.10	B		0.60±0.20 (0.5±0.25)*
			0.95±0.10	C	#	
	1.25±0.10	D	#			
	3.20+0.4/-0.1	1.60±0.20	1.60±0.20	G	#	
1210 (3225)	3.20±0.40	2.50±0.20	0.95±0.10	C	#	0.75±0.25
			1.25±0.10	D	#	
	1.60±0.20	G	#			
	3.20±0.60	2.50±0.50	2.00±0.20	K	#	
1808 (4520)	4.50+0.6/-0.4	2.03±0.25	2.50±0.50	M	#	0.50±0.25
			1.25±0.10	D	#	
			2.00±0.20	K	#	
1812 (4532)	4.50+0.6/-0.4	3.20±0.30	1.25±0.10	D	#	0.50±0.25
			1.60±0.20	G	#	
		2.00±0.20	K	#		
		3.20±0.40	2.50±0.50	2.50±0.50	M	



\*Reflow soldering is only recommended for 1206\_1000V ~3000V products.

**Part Numbering:** Ex: CSTC0805B251H473K-T3

Series	Termination	English Size (Metric)	Dielectric Type	Rated Voltage	Internal Code	Capacitance Value in pF	Capacitance Tolerance	T&R Packaging Quantity
CST	C = Cu-polymer/ Ni / Sn	0603 (1608) 0805 (2012) 1206 (3216) 1210 (3225) 1808 (4520) 1812 (4532)	B = X7R N = NPO (COG)	3 digits with the first 2 being significant. The last digit specifies the number of zeros. "R" denotes decimal position as necessary. Ex. 6R3=6.3V 101=100V	H High Voltage	3 digits with the first 2 being significant. The last digit specifies the number of zeros. "R" denotes decimal position as necessary.  Ex. 1R5=1.5pF 101=100pF	B = ±0.1pF C = ±0.25pF D = ±0.5pF F = ±1.0% G = ±2.0% J = ±5.0% K = ±10.0% M = ±20.0% Z = -20/+80%	-T05 = 500 -T1 = 1,000 -T2 = 2,000 -T3 = 3,000 -T4 = 4,000 -T5 = 5,000 -T6 = 6,000 -T9 = 9,000 -T10 = 10,000 -T15 = 15,000  (see packaging section for offering and corresponding reel diameter)

**Packaging Style and Quantity:**

Size	Thickness/Symbol (mm)		Paper tape		Plastic tape	
			7" reel	13" reel	7" reel	13" reel
0603	0.80±0.07	S	4k	15k	-	-
	0.80 ±0.30	X	4k	15k		
0805	0.60±0.10	A	4k	15k	-	-
	0.80±0.10	B	4k	15k	-	-
	1.25±0.10	D	-	-	3k	10k
	1.25±0.30	I	-	-	3k	10k
1206	0.80±0.10	B	4k	15k	-	-
	0.95±0.10	C	-	-	3k	10k
	1.25±0.10	D	-	-	3k	10k
	1.60±0.20	G	-	-	2k	10k
1210	1.60±0.50	P	-	-	2k	9k
	0.95±0.10	C	-	-	3k	10k
	1.25±0.10	D	-	-	3k	10k
	1.60±0.20	G	-	-	2k	-
1808	2.00±0.20	K	-	-	1k	6k
	2.50±0.50	M	-	-	1k	6k
	1.25±0.10	D	-	-	2k	10k
1812	2.00±0.20	K	-	-	1k	6k
	1.25±0.10	D	-	-	1k	5k
	1.60±0.20	G	-	-	1k	-
	2.00±0.20	K	-	-	1k	-
	2.50±0.50	M	-	-	0.5k	3k

**Electrical Specifications:**

Dielectric	NP0	X7R
Size	0603, 0805, 1206, 1210, 1808, 1812	
Capacitance*	0.5pF to 0.01µF	100pF to 1.0µF
Capacitance tolerance***	Cap≤5pF: C (±0.25pF) 5pF<Cap<10pF: D (±0.5pF) Cap≥10pF: F (±1%), G (±2%), J (±5%),K (±10%)	K (±10%), M (±20%)
Rated voltage (WVDC)	200V to 3000V	
Q/DF*	Cap<30pF: Q≥400+20C Cap≥30pF: Q≥1000	DF≤2.5%
Insulation resistance at Ur**	Ur=200~630V: ≥10GΩ or RxC≥100Ω-F whichever is smaller Ur=1000~3000V: ≥10GΩ	
Dielectric strength	200~300V: ≥2 x WVDC 500~999V: ≥1.5 x WVDC 1000~3000V: ≥1.2 x WVDC	
Operating temperature	-55 to +125°C	
Capacitance characteristic	±30ppm	±15%
Termination	Ni/Sn (lead-free termination)	

\* Measured at the condition of 30~70% related humidity.

NP0: Apply 1.0±0.2Vrms, 1.0MHz±10% for Cap≤1000pF and 1.0±0.2Vrms, 1.0kHz±10% for Cap>1000pF, 25°C at ambient temperature X7R,

\*\* Preconditioning for Class II MLCC: Perform a heat treatment at 150±10°C for 1 hour, then leave in ambient condition for 24±2 hours before measurement.

**Capacitance Range–NPO Dielectric** ( 0603, 0805, 1206, 1210, 1808, 1812 English sizes):

• **Middle Voltage– 200V to 630V**

DIELECTRIC		NPO																				
SIZE		0603		0805				1206				1210				1808		1812				
RATED VOLTAGE		200	250	200	250	500	630	200	250	500	630	200	250	500	630	500	630	200	250	500	630	
Capacitance	0.5pF (0R5)	S	S	A	A	A	A															
	1.0pF (1R0)	S	S	A	A	A	A															
	1.2pF (1R2)	S	S	A	A	A	A															
	1.5pF (1R5)	S	S	A	A	A	A	B	B	B	B											
	1.8pF (1R8)	S	S	A	A	A	A	B	B	B	B					D	D					
	2.2pF (2R2)	S	S	A	A	A	A	B	B	B	B					D	D					
	2.7pF (2R7)	S	S	A	A	A	A	B	B	B	B					D	D					
	3.3pF (3R3)	S	S	A	A	A	A	B	B	B	B					D	D					
	3.9pF (3R9)	S	S	A	A	A	A	B	B	B	B					D	D					
	4.7pF (4R7)	S	S	A	A	A	A	B	B	B	B					D	D					
	5.6pF (5R6)	S	S	A	A	A	A	B	B	B	B					D	D					
	6.8pF (6R8)	S	S	A	A	A	A	B	B	B	B					D	D					
	8.2pF (8R2)	S	S	A	A	A	A	B	B	B	B					D	D					
	10pF (100)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	12pF (120)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	15pF (150)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	18pF (180)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	22pF (220)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	27pF (270)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	33pF (330)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	39pF (390)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	47pF (470)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	56pF (560)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	68pF (680)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	82pF (820)	S	S	A	A	B	B	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	100pF (101)	S	S	A	B	B	B	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	120pF (121)	S	S	A	B	D	D	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	150pF (151)	S	S	B	D	D	D	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	180pF (181)	S	S	B	D	D	D	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	220pF (221)	S	S	D	D	D	D	B	B	B	B	C	C	C	C	D	D	D	D	D	D	D
	270pF (271)	X	X	D	D	D	D	B	C	C	C	C	C	C	C	K	K	D	D	D	D	D
	330pF (331)	X	X	D	D	D	D	B	C	C	C	C	C	C	C	K	K	D	D	D	D	D
	390pF (391)	X	X	D	D	D	D	B	C	C	C	C	C	C	C	K	K	D	D	D	D	D
	470pF (471)	X	X	D	D	I	I	C	C	C	C	C	C	C	C	K	K	D	D	D	D	D
	560pF (561)			D	D	I	I	C	D	D	D	C	C	C	C	K	K	D	D	D	D	D
	680pF (681)			D	D	I	I	C	D	D	D	C	C	C	C	K	K	D	D	D	D	D
	820pF (821)			D	D	I	I	C	G	G	G	C	C	C	C	K	K	D	D	D	D	D
	1,000pF (102)			D	D	I	I	C	G	G	G	D	D	D	D	K	K	D	D	D	D	D
	1,200pF (122)			D	D			C	G	G	G	D	D	D	D	K	K	D	D	D	D	D
	1,500pF (152)			D	D			D	G	G	G	D	D	D	D	K	K	D	D	D	D	D
1,800pF (182)			D	D			D	G	G	G	D	D	D	D	K	K	D	D	D	D	D	
2,200pF (222)			D	D			D	G	G	G	D	D	D	D	K	K	D	D	D	D	D	
2,700pF (272)							D	G			D	D	D	D			D	D	D	D	D	
3,300pF (332)							D	G			D	D	D	D			D	D	D	D	D	
3,900pF (392)							D	G			D	D	D	D			D	D				
4,700pF (472)							D	G			G	G					D	D				
5,600pF (562)											G	G					D	D				
6,800pF (682)											G	G					D	D				
8,200pF (822)											G	G										
0.01µF (103)											G	G										

\*The letter in cell is expressed the symbol of product thickness.

**Capacitance Range—X7R Dielectric** ( 0603, 0805, 1206, 1210, 1808, 1812 English sizes):

• **Middle Voltage- 200V to 630V**

DIELECTRIC		X7R																			
SIZE		0603		0805				1206				1210				1808		1812			
RATED VOLTAGE (VDC)		200	250	200	250	500	630	200	250	500	630	200	250	500	630	500	630	200	250	500	630
Capacitance	100pF (101)	X	X	D	D	B	B	D	D	D	D										
	120pF (121)	X	X	D	D	B	B	D	D	D	D										
	150pF (151)	X	X	D	D	B	B	D	D	D	D					D	D				
	180pF (181)	X	X	D	D	B	B	D	D	D	D					D	D				
	220pF (221)	X	X	D	D	B	B	D	D	D	D					D	D				
	270pF (271)	X	X	D	D	B	B	D	D	D	D					D	D				
	330pF (331)	X	X	D	D	B	B	D	D	D	D					D	D				
	390pF (391)	X	X	D	D	B	B	D	D	D	D					D	D				
	470pF (471)	X	X	D	D	B	B	D	D	D	D					D	D				
	560pF (561)	X	X	D	D	B	B	D	D	D	D					D	D				
	680pF (681)	X	X	D	D	B	B	D	D	D	D					D	D				
	820pF (821)	X	X	D	D	B	B	D	D	D	D					D	D				
	1,000pF (102)	X	X	D	D	B	B	D	D	D	D	C	C	D	D	D	D	D	D	D	D
	1,200pF (122)	X	X	D	D	B	B	D	D	D	D	C	C	D	D	D	D	D	D	D	D
	1,500pF (152)	X	X	D	D	B	B	D	D	D	D	C	C	D	D	D	D	D	D	D	D
	1,800pF (182)	X	X	D	D	B	B	D	D	D	D	C	C	D	D	D	D	D	D	D	D
	2,200pF (222)	X	X	D	D	B	B	D	D	D	D	C	C	D	D	D	D	D	D	D	D
	2,700pF (272)	X	X	D	D	B	B	D	D	D	D	C	C	D	D	D	D	D	D	D	D
	3,300pF (332)	X	X	D	D	B	B	D	D	D	D	C	C	D	D	D	D	D	D	D	D
	3,900pF (392)	X	X	D	D	B	B	D	D	D	D	C	C	D	D	D	D	D	D	D	D
	4,700pF (472)	X	X	D	D	D	D	D	D	D	D	C	C	D	D	D	D	D	D	D	D
	5,600pF (562)	X	X	D	D	D	D	D	D	D	D	C	C	D	D	K	K	D	D	D	D
	6,800pF (682)	X	X	D	D	D	D	D	D	D	D	C	C	D	D	K	K	D	D	D	D
	8,200pF (822)	X	X	D	D	D	D	D	D	D	D	C	C	D	D	K	K	D	D	D	D
	0.010µF (103)	X	X	D	D	D	D	D	D	D	D	C	C	D	D	K	K	D	D	D	D
	0.012µF (123)			D	D	D	D	D	D	D	D	C	C	D	D	K	K	D	D	D	D
	0.015µF (153)			D	D	D	D	D	D	D	D	C	C	D	D	K	K	D	D	D	D
	0.018µF (183)			D	D	D	D	D	D	D	D	C	C	D	D	K	K	D	D	D	D
	0.022µF (223)			D	D	D	D	D	D	G	G	C	C	D	D	K	K	D	D	D	D
	0.027µF (273)			D	D			D	D	G	G	C	C	G	G	K	K	D	D	D	D
	0.033µF (333)			D	D			G	G	G	G	C	C	G	G	K	K	D	D	D	D
	0.039µF (393)			D	D			G	G	G	G	C	C	G	G	K	K	D	D	D	D
	0.047µF (473)			D	D			G	G	G	G	D	D	G	G	K	K	D	D	D	D
	0.056µF (563)			D	D			G	G	G	G	D	D	G	G	K	K	D	D	K	K
	0.068µF (683)			D	D			G	G			G	G	K	K	K	K	D	D	K	K
0.082µF (823)			D				G	G			G	G	K	K			D	D	K	K	
0.10µF (104)			D				G	G			G	G	K	K			D	D	K	K	
0.12µF (124)											G	G					D	D	M	M	
0.15µF (154)												M	M				K	K	M	M	
0.18µF (184)													M	M			K	K	M	M	
0.22µF (224)														M	M		K	K	M	M	
0.27µF (274)															M	M	K	K			
0.33µF (334)																M	K	K			
0.39µF (394)																	K	K			
0.47µF (474)																	K	K			
0.56µF (564)																		M	M		
0.68µF (684)																		M	M		
0.84µF (844)																		M	M		
1.0µF (105)																		M	M		

The letter in cell is expressed the symbol of product thickness.

**Capacitance Range—NPO Dielectric** (0805, 1206, 1210, 1808, 1812 English sizes):

• **High Voltage 1kV to 3kV**

DIELECTRIC		NPO															
SIZE		0805		1206			1210			1808				1812			
RATED VOLTAGE		1000	1000	1500	2000	1000	1500	2000	1000	1500	2000	3000	1000	1500	2000	3000	
<b>C a p a c i t a n c e</b>	0.5pF (0R5)	D															
	1.0pF (1R0)	D															
	1.2pF (1R2)	D															
	1.5pF (1R5)	D	B	B	B												
	1.8pF (1R8)	D	B	B	B												
	2.0pF (2R0)	D	B	B	B				D	D	D	D					
	2.2pF (2R2)	D	B	B	B				D	D	D	D					
	2.7pF (2R7)	D	B	B	B				D	D	D	D					
	3.3pF (3R3)	D	B	B	B				D	D	D	D					
	3.9pF (3R9)	D	B	B	B				D	D	D	D					
	4.7pF (4R7)	D	B	B	B				D	D	D	D					
	5.6pF (5R6)	D	B	B	B				D	D	D	D					
	6.8pF (6R8)	D	B	B	B				D	D	D	D					
	8.2pF (8R2)	D	B	B	B				D	D	D	D					
	10pF (100)	D	B	B	B	C	C	C	D	D	D	D	D	D	D	D	
	12pF (120)	D	B	B	B	C	C	C	D	D	D	D	D	D	D	D	
	15pF (150)	D	B	B	B	C	C	C	D	D	D	D	D	D	D	D	
	18pF (180)	D	B	B	B	C	C	C	D	D	D	D	D	D	D	D	
	22pF (220)	D	B	B	B	C	C	C	D	D	D	D	D	D	D	D	
	27pF (270)	D	B	B	B	C	C	C	D	D	D	D	D	D	D	D	
	33pF (330)	D	B	C	C	C	C	C	D	D	D	D	D	D	D	D	
	39pF (390)	D	B	C	C	C	C	C	D	D	D	D	D	D	D	D	
	47pF (470)	D	C	C	C	C	C	C	D	D	D	D	D	D	D	D	
	56pF (560)	D	C	D	D	C	D	D	D	D	D	D	D	D	D	D	
	68pF (680)	D	C	D	D	C	D	D	D	D	D	D	D	D	D	D	
	82pF (820)	D	D	D	D	C	D	D	D	D	D	D	D	D	D	D	
	100pF (101)	D	D	D	D	D	D	D	D	D	K	K	D	D	D	D	
	120pF (121)	D	D	G	G	D	D	D	D	D	K	K	D	D	D	D	
	150pF (151)	D	D	G	G	D	G	G	D	K	K	K	D	D	D	D	
	180pF (181)	D	G	G	G	D	G	G	D	K	K	K	D	D	K	K	
220pF (221)	D	G	G	G	G	G	G	D	K	K	K	D	D	K	K		
270pF (271)	D	G	P	P	G	K	K	K	K	K	K	D	K	K	K		
330pF (331)	D	G	P	P	G	K	K	K	K	K	K	D	K	K	K		
390pF (391)	D	G	P	P	G	M	M	K	K	K		D	K	K	K		
470pF (471)		G			G	M	M	K	K	K		K	K	K	K		
560pF (561)		G			G			K	K	K		K	K	K			
680pF (681)		G			G			K	K	K		K	K	K			
820pF (821)		G			G			K				K	K	K			
1,000pF (102)		G			G			K				K	K	K			
1,200pF (122)												K					
1,500pF (152)												K					

\*The letter in cell is expressed the symbol of productthickness.

**Capacitance Range—X7R Dielectric** ( 0603, 0805, 1206, 1210, 1808, 1812 English sizes):

- **High Voltage 1kV to 3kV**

DIELECTRIC		X7R													
SIZE	0805	1206			1210			1808				1812			
RATED VOLTAGE	1000	1000	1500	2000	1000	1500	2000	1000	1500	2000	3000	1000	1500	2000	3000
100pF (101)	B	D	D	D	D	D	D								
120pF (121)	B	D	D	D	D	D	D								
150pF (151)	B	D	D	D	D	D	D	D	D	D	D				
180pF (181)	B	D	D	D	D	D	D	D	D	D	D				
220pF (221)	B	D	D	D	D	D	D	D	D	D	D				
270pF (271)	B	D	D	D	D	D	D	D	D	D	D	D	D	D	K
330pF (331)	B	D	D	D	D	D	D	D	D	D	K	D	D	D	K
390pF (391)	B	D	D	D	D	D	D	D	D	D	K	D	D	D	K
470pF (471)	B	D	D	D	D	D	D	D	D	D	K	D	D	D	K
560pF (561)	B	D	D	D	D	D	D	D	D	D	K	D	D	D	K
680pF (681)	B	D	D	D	D	D	D	D	D	D	K	D	D	D	K
820pF (821)	B	D	G	G	D	D	D	D	D	D	K	D	D	D	K
1,000pF (102)	B	D	G	G	D	D	D	D	K	K	K	D	D	D	K
1,200pF (122)	B	D	G	G	D	M	M	D	K	K	K	D	D	D	K
1,500pF (152)	D	D	G	G	D	M	M	D	K	K	K	D	D	D	K
1,800pF (182)	D	D	G	G	D	M	M	D	K	K	K	D	G	G	M
2,200pF (222)	D	D	G	G	D	M	M	D	K	K		D	G	G	M
2,700pF (272)		D	G	G	D	M	M	D	K	K		D	G	G	M
3,300pF (332)		D	G	G	D	M	M	D	K	K		D	K	K	M
3,900pF (392)		D	G		G	M	M	D	K	K		D	K	K	
4,700pF (472)		D	G		G	M	M	D	K	K		D	K	K	
5,600pF (562)		D	G		G			K	K	K		D			
6,800pF (682)		D	G		G			K				D			
8,200pF (822)		D			G			K				D			
0.010μF (103)		D			G			K				D			
0.012μF (123)		G			G			K				K			
0.015μF (153)		G			G			K				K			
0.018μF (183)					G			K				M			
0.022μF (223)					G			K				M			
0.033μF (333)								K				M			
0.039μF (393)								K				M			
0.047μF (473)								K				M			
0.10μF (104)												M			

\*The letter in cell is expressed the symbol of productthickness.