High Voltage Ceramic Chip Capacitors
Type CFH

Δ Features

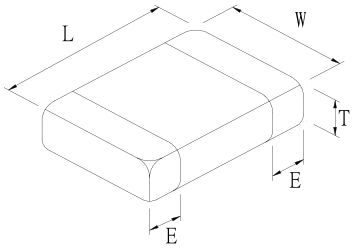
- Surface Mount
- Rated Voltage: 250 VAC, 3000VDC
- Chip Size: 1808, 1812

Δ Applications

- Suitable for wave and reflow soldering
- Use in mobile, facsimile, telephone and other telecom electronic equipment where lightning surges occur.

Δ Dimensions

Size		1808	1812
(L) Length	mm	4.60±0.30	0.30± 4.60
	(in)	(0.181±0.12)	(0.12±0.181)
(W) Width	mm	2.00±0.20	0.20±3.20
	(in)	(0.080±0.008)	(0.008±0.126)
(E) Termination	mm	0.64±0.38	0.64±0.38
	(in)	(0.025±0.015)	(0.015±0.025)
(T) Thickness	mm	2.20	2.70
	(in)	(0.087)	(0.106)



Δ Specifications

	Size	Length / Width	Volt	Capacitance
X7R	1812	L: 4.60±0.030mm (0.181±0.012) W: 3.20±0.030mm (0.126±0.012)	250	300pF-2700pF X2Y3 - TUV/UL
	1808	L: 4.60±0.030mm (0.181±0.012) W: 2.00±0.020mm (0.080±0.008)	250	150pF-1000pF X2Y3 - SEMKO
			250	150pF-1800pF X2Y3 - TUV/UL
NPO	1808	L: 4.60±0.030mm (0.181±0.012) W: 2.00±0.020mm (0.080±0.008)	250	5.0pF-220pF X2Y3 - SEMKO
			250	3pF-1000pF X2Y3 - TUV/UL

Liberty Bell Components, Inc. 11631 Seaboard Circle, Stanton, CA 90680 (888)820-8885
Fax: (888)820-8884 email: sales@libertycomponents.com website: www.libertycomponents.com

High Voltage Ceramic Chip Capacitors
Type CFH

∆ Electrical

Test	Test Conditions	Post-Test Inspection Requirements
Temperature Coefficients	Operating temp. range: -55 to +125°C	**Class I:** ∆C: 0±30ppm/°C **Class II:** ∆C: ≤ ±15%
Capacitance	**Class I:** 1MHz, 1Vrms **Class II:** 1KHz, 1Vrms	Capacitance is within specified tolerance
Dissipation Factor (D.F.) and Tangent of Loss Angle (tanδ)	**Class I:** 1MHz, 1Vrms **Class II:** 1KHz, 1Vrms	**Class I:** ≤ 0.1% **Class II:** ≤ 2.5%
Insulation Resistance (I.R.)	**Class I:** After 60 sec charging at 500V (DC) 25°C, 55% RH max. **Class II:** After 60 sec charging at 500V (DC) 25°C, 55% RH max.	**Class I:** ≥100GΩ or ≥1000MΩ.µF Whichever is smaller **Class II:** ≥10GΩ or ≥100MΩ.µF Whichever is smaller
Impulse Voltage	Each Individual Capacitor shall be subjected to a 2.5KV(X2/Y3) impulse	No breakdown or failure
Withstanding Voltage	Test 1.5KV AC for 60 sec	No breakdown or failure

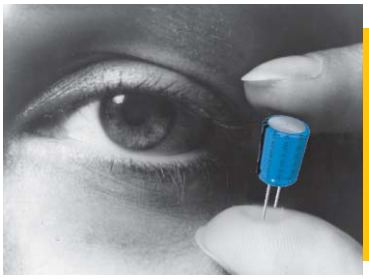
Liberty Bell Components, Inc. 11631 Seaboard Circle, Stanton, CA 90680 (888)820-8885
Fax: (888)820-8884 email: sales@libertycomponents.com website: www.libertycomponents.com

High Voltage Ceramic Chip Capacitors
Type CFH

Δ Environmental

Test	Test Conditions	Post-Test Inspection Requirements	
Solderability	Immersed in Solder bath at 245 ± 5°C for 5 ± 0.5 sec.	No Visible Damage At least 75% of termination area should be well tinned	
Resistance to Soldering Heat	Immersed in Solder bath at 245 ± 5°C for 5 ± 0.5 sec. Recovery: 12 ± 1hr.	No Visible Damage	
		Class I:	ΔC/C: ≤±2.5% or 0.25pF whichever is larger
			I.R.: More than 10GΩ
			D.F.: ≤2.5%
		Class II:	ΔC/C: ≤10%
			I.R.: More than 1GΩ
			D.F.: ≤2.5%
Endurance (Life Test)	Preconditioning 1000^{+48}_{-0} hr. at upper category temperature applied at: 1.25U_R (X1,X2) or 1.7U_R (Y2,Y3) Once every hour the voltage shall be increased to 1000Vrms for 0.1 sec. Recovery: 12 ± 1hr.	No Visible Damage	
		Class I:	ΔC/C: ≤±5%
			I.R.: More than 1GΩ
			D.F.: ≤0.25%
		Class II:	ΔC/C: ≤10%
			I.R.: ≥ 1GΩ or 50MΩ·μF whichever is smaller
			D.F.: ≤2.5%
Humidity Test (Damp heat, steady state)	Preconditioning 500^{+24}_{-0} hr. at 40 ± 2°C, 90~95% relative humidity. The capacitor with rated voltage (250VAC) applied. Recovery: 12 ± 1hr.	No Visible Damage	
		Class I:	ΔC/C: ≤±5% or 0.5pF whichever is larger
			I.R.: More than 10GΩ
			D.F.: ≤2.5%
		Class II:	ΔC/C: ≤10%
			I.R.: ≥ 1GΩ or 50MΩ·μF whichever is smaller
			D.F.: ≤5%
Adhesion Strength of Termination	Capacitors mounted on a substrate. A force of 5N applied perpendicular to the place of substrate and parallel the line joining the center of terminations for 10±1 sec.	No Visible Damage	
Resistance to Flexure Stress	Capacitors mounted on a substrate. The board shall then be bent by 1mm at a rate of 1mm/sec.	No Visible Damage Change in capacitance is less than 10%	
Active Flammability	The capacitor is applied Ur(250VAC). Then each sample shall be subjected to 20 discharges from a tank capacitor, charge to a voltage that, when discharged, places Ui 2500V for X_2Y_3, Ui 5000V for X_1Y_2 across the capacitor under test. The interval between successive discharges shall be 5 sec.	The cheese cloth shall not burn with a flame.	

Liberty Bell Components, Inc. 11631 Seaboard Circle, Stanton, CA 90680 (888)820-8885
Fax: (888)820-8884 email: sales@libertycomponents.com website: www.libertycomponents.com



High Voltage Ceramic Chip Capacitors
Type CFH

Δ Ordering

CFH	1808	N	-	100	J	-	302	E	D	G
(1)	(2)	(3)		(4)	(5)		(6)	(7)	(8)	(9)

(1)	Series	CFH:	X2Y3
(2)	Size Code	1808	
		1812	
(3)	Dielectric Code	N:	COG (1BCG)
		X:	X7R (2R1)
(4)	Capacitance Code	Capacitance expressed in pF. First two digits are significant figures. The third Digit denotes number of zeros. Use R for decimal point for values less than 10pF. (eg. R47: 0.47pF)	
(5)	Tolerance Code	Code	Tolerance
		C	±0.25pF
		D	±0.5pF
		F	±1%
		G	±2%
		J	±5%
		K	±10%
		M	±20%
		Z	+80% -20%
		Other Tolerances Available Upon Request	
(6)	Rated Voltage Code	302:	3000V
(7)	Packaging Code	TR:	Tape and Reel, Cardboard Tape
		ER:	Tape and Reel, Embossed Tape
		No Code:	Bulk
(8)	Thickness Code	Code	Tolerance (mm)
		B	0.71-0.90
		C	0.91-1.30
		D	1.31-1.50
		E	1.51-1.80
		F	1.81-2.20
		G	2.21-2.70
(9)	Special Code	G:	Cd/Pb Free

Liberty Bell Components, Inc. 11631 Seaboard Circle, Stanton, CA 90680 (888)820-8885
Fax: (888)820-8884 email: sales@libertycomponents.com website: www.libertycomponents.com