1. **SUBJECT**: This specification applies on the chip capacitor array was made by SYNTON-TECH Corporation.
2. **PART NUMBER**: Part number of the chip capacitor array is identified by the Size, Cap. Nr. Dielectric, Cap. Value, tolerance and Voltage.

Example : DESCRIPTION : CA 0603 4C NPO 100PF K 50V

SYNTON CODE : CA 0603 4C N 101 K 50V

Size	Cap. Nr.	Dielectric	Cap. value	Tolerance	Voltage
0603	4C	N: NPO X: X7R Y : Y5V	3 Digits : 5R1 : 5.1PF 100 : 10PF 101 : 100PF 102 : 1NF 103 : 10NF 104 : 0.1UF	A: ±0.05PF B : ±0.10PF C : ±0.25PF D : ±0.5PF F : ±1% G : ±2% J : ±5% K : ±10% M : ±20% Z: -20~+80%	10V 16V 25V 50V 63V 100V 200V 250V 500V 1KV 2KV 3KV

APPROVED	CHECKED	DESIGNED	REMARK	DOCUMENT NO.
Carol	May	Chen		0201010120

3. ELECTRICAL CHARACTERISTICS FOR CLASS 2, CAPACITOR

Class 2 capacitors; X7R dielectric; NiSn terminations

DESCRIPTION	VALUE
Capacitors(E12 SERIES) 16V 25V 50V	 Under evaluation Under development 220 pF to 10nF
Tolerance on capacitance after 1000hrs	±5%; ±10%, ±20%
Test Voltage (DC) for 1 minute	2.5xU_R
Tan δ ; note1 16V 25V and 50V	 ≦2.5%
Insulation resistance after 1 minute at U_R(DC) C≦10nF C >10nF	 R_{ins} x C≧10^5 MΩ R_{ins} x C> 1000s
Ageing	Typical 1% per time decade
Resistance to soldering heat	260℃;10 seconds

Note:

1.Measured at 1V, 1KHz, using a four-gauge method.

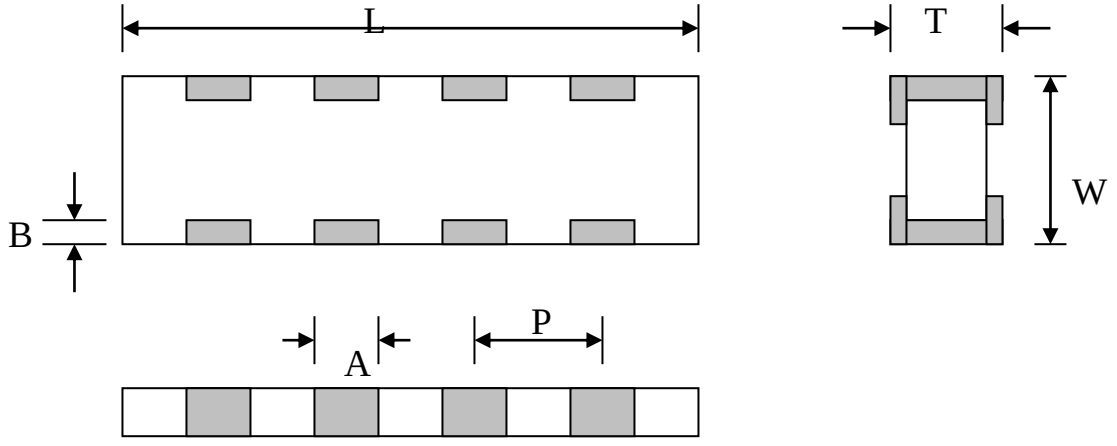
Class 1 capacitors; NPO dielectric; NiSn terminations

DESCRIPTION	VALUE
Capacitance range ors(E12 series);note 1	22pF to 1 nF
Tolerance on capacitance	±5%; ±10%
Tan δ ; note 1	≦0.1%
Test Voltage(DC) for 1 minute	2.5xU_R
Insulation resistance after 1 minute at U_R(DC)	＞100000 MΩ
Temperature coefficient	(0±30) x 10^{-6}/K
	260℃; 10 seconds

Note:

1.Measured at 1V, 1MHz for C≦1000pF and at 1V, 1KHz for C＞1000Pf,
Using a four-gauge method.

4. MECHANICAL DATA



Dimensional outline

Table 1 Capacitor dimensions for product size 0612 (4x0603)

CASE SIZE	L	W	T		A	B	P
			MIN.	MAX.			
Dimensions in millimeters							
(4x0603)	3.20±0.15	1.60±0.15	0.80	1.20	0.40±0.1	0.30±0.15	0.80±0.15
Dimensions in inches							
(4x0603)	0.125±0.006	0.063±0.006	0.031	0.047	0.018±0.006	0.012±0.006	0.031±0.006

5. DIMENSIONS OF SOLDER LANDS

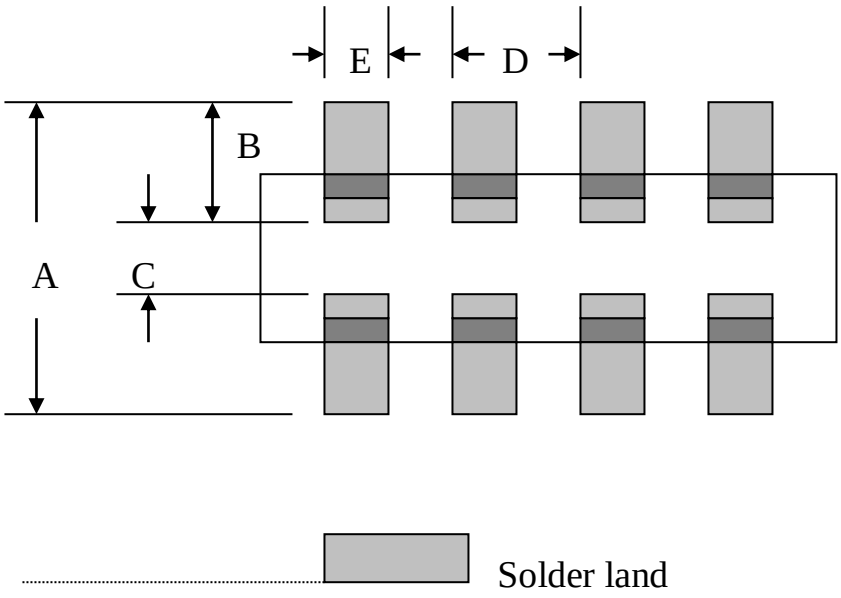


Table 2 Solder land dimensions

CASE SIZE	TOOTPRINT DIMENSIONS(mm)				
	A	B	C	D	E
(4x0603)	2.54±0.15	0.89±0.10	0.76±0.10	0.80±0.10	0.45±0.10

6. TESTS AND REQUIREMENTS

IEC 384-10	Test items	Conditions	Requirements		
			NPO	X7R	Y5V
4.9	Bending	Bending rate 1mm/s,jig,Radius 340mm	ΔC/C≦1%	ΔC/C≦10%	ΔC/C≦20%
4.10	Resistance to soldering heat	260±5℃ for 10±0.5s in static solder bath	ΔC/C≦0.5% or 0.5pF,whichever is greater	-5%≦ΔC/C 10%	-10%≦ΔC/C 20%
4.11	Solderability	235±5℃ for 2±0.5s in a static solder bath	75% minimum coverage of metallic area		
4.12	Rapid change of temperature	NPO/X7R:-55℃ to +125℃ 5 cycles Y5V:-25℃ to +85,5cycles	ΔC/C≦1% or 1pF,whichever is greater	ΔC/C:≦ 15%	ΔC/C:≦ 20%
4.14	Damp heat, Steady state	At 40℃,90 to 95% RH and Ur Applied for 56 days	ΔC/C;2% or 1pF whichever is greater Tan δ ≦2xspecified Value IR:2500MΩ or RxC≧25s whichever is less	ΔC/C; ≦15% Tan δ ≦ 7% IR:1000MΩ or RxC≧25s whichever is less	ΔC/C; ≦30% Tan δ ≦ 7% IR:1000MΩ or RxC≧25s whichever is less
4.15	Endurance	At upper category temperature 2xUr applied for 42 days	ΔC/C;2% or 1pF whichever is greater Tan δ ≦2xspecified Value IR:4000MΩ or RxC≧40s whichever is less	ΔC/C; ≦15% Tan δ ≦ 7% IR:2000MΩ or RxC≧50s whichever is less	ΔC/C; ≦30% Tan δ ≦ 7% IR:2000MΩ or RxC≧50s whichever is less

7. TESTS AND REQUIREMENTS

Tape Width: mm

NPO

		50V	25V	16V
Cap.(pF)	**Code 10-12**	**CA0603**	**under development**	
22	220			
27	270			
33	330			
39	390			
47	470			
56	560			
68	680			
82	820			
100	101			
120	121	0.8+/-0.1		
150	151			
180	181			
220	221			
270	271			
330	331			
390	391			
470	471			
560	561			

In Columns:
Thickness Class

THICKNESS CLASS AND PACKAGING QUANTITIES

8mm TAPE WIDTH AMOUNT PER REEL

Thickness	**180mm/7”**	
Classes(mm)	**Paper**	**BLISTER**
0.8+/-0.1	4000	4000

8. PECIFICATION & PACKING

Tape Width: mm

X7R

		50V	25V	16V
Cap.(pF)	**Code 10-12**	**CA0603**	**under development**	
220	221	0.8+/-0.1		
270	271			
330	331			
390	391			
470	471			
560	561			
680	681			
820	821			
1000	102			
1200	122			
1500	152			
1800	182			
2200	222			
2700	272			
3300	332			
3900	392			
4700	472			
5600	562			
6800	682			
8200	822			
10000	103			

In Columns:
Thickness Class

THICKNESS CLASS AND PACKAGING QUANTITIES

8mm TAPE WIDTH AMOUNT PER REEL

Thickness	**180mm/7”**		**330mm/13”**	
Classes(mm)	**Paper**	**BLISTER**	**Paper**	**BLISTER**
0.8+/-0.1	4000	4000	10000	10000