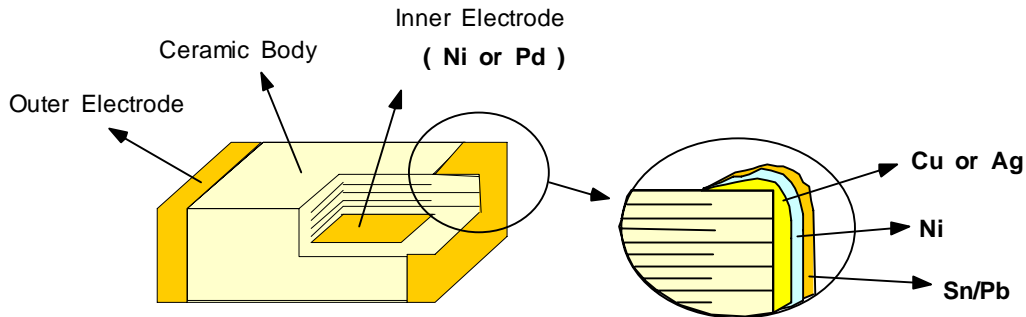


FEATURE



- Miniature Size
- Wide Capacitance, Temperature Compensation and Voltage Range
- Highly Reliable Performance
- Industry Standard Size
- Tape & Reel for Surface Mount Assembly

PART NUMBER CODE

CL 10 C 101 J B N C
 (1) (2) (3) (4) (5) (6) (7) (8)

(1) SAMSUNG Multilayer Ceramic Chip Capacitor

(2) Type(Size)

(3) Capacitance Temperature Characteristics

(4) Nominal Capacitance

(5) Capacitance Tolerance

(6) Rated Voltage

(7) Chip thickness

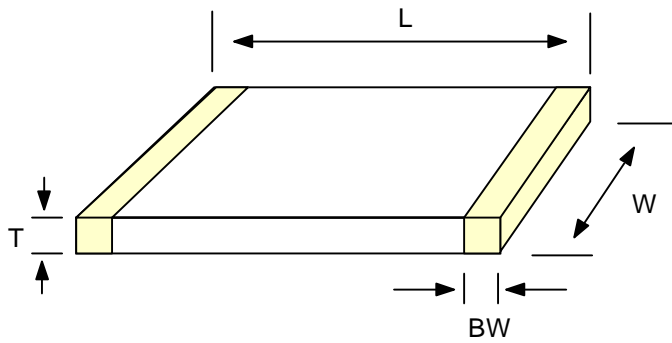
- **N** : standard thickness

- **A** : thinner than N

- **B** : thicker than N

(8) Packaging Type

CONFIGURATION AND DIMENSIONS



CODE	EIA CODE	DIMENSION (mm)			
		L	W	T (MAX)	BW
03	0201	0.6 +/- 0.03	0.3 +/- 0.03	0.3 +/- 0.03	0.15 +/- 0.05
05	0402	1.0 +/- 0.05	0.5 +/- 0.05	0.5 +/- 0.05	0.2 +0.15/-0.1
10	0603	1.6 +/- 0.1	0.8 +/- 0.1	0.8 +/- 0.1	0.3 +/- 0.2
21	0805	2.0 +/- 0.1	1.25 +/- 0.1	1.25 +/- 0.1	0.5+0.2/-0.3
31	1206	3.2 +/- 0.2	1.6 +/- 0.2	1.6 +/- 0.2	0.5+0.2/-0.3
32	1210	3.2 +/- 0.3	2.5 +/- 0.2	2.5 +/- 0.2	0.6 +/- 0.3
43	1812	4.5 +/- 0.4	3.2 +/- 0.3	2.5 +/- 0.2	0.8 +/- 0.3
55	2220	5.7 +/- 0.4	5.0 +/- 0.3	2.5 +/- 0.3	1.0 +/- 0.3

CAPACITANCE TEMPERATURE CHARACTERISTIC

@ CLASS I (Temperature Compensation)

Symble	EIA Code	Temperature Coefficient(PPM/C)	* Temperature Characteristics	Operation Temperature Range
C	C0G(CH)	0 +/- 60	C Δ	-55 ~ +125C
P	P2H	-150 +/- 60	P Δ	
R	R2H	-220 +/- 60	R Δ	
S	S2H	-330 +/- 60	S Δ	
T	T2H	-470 +/- 60	T Δ	
U	U2J	-750 +/- 120	U Δ	
L	S2L	+350 ~ -1000	SL	

* Temperature Characteristics

Temperature Characteristics	below 2.0pF	2.2 ~ 3.9pF	above 4.0pF	above 10pF
C Δ	CK	CJ	CH	CG/CH
P Δ	PK	PJ	PH	PH
R Δ	RK	RJ	RH	RH
S Δ	SK	SJ	SH	SH
T Δ	TK	TJ	TH	TH
U Δ	UK	UJ	UJ	UJ

K : +/- PPM/c J : +/-120 PPM/c H : +/-60 PPM/c G : +/-30 PPM/c

CLASS II(High Dielectric Constant)

Symble	EIA Code	Capacitance Change (Δ C : %)	Operation Temperature Range
B	X7R	+/- 15	-55 ~ +125 C
F	Y5V	+22 ~ -82	-30 ~ +85 C

NOMINAL CAPACITANCE

The value of nominal capacitance is expressed in pico-Farad(pF) with a three-digit number.

The first two digits denote significant figures and the last digit denotes the multiple of 10 in pF.

For values below 1pF, the letter "R" is used as the decimal point and the last digit becomes significant.

example 100 = 10 x 10⁰ = 10pF
 222 = 22 x 10² = 2200pF
 020 = 2 x 10⁰ = 2pF
 1R5 = 1.5pF

CAPACITANCE TOLERANCE

Temperature Characteristics	Symbol	Tolerance	Applicable Capacitance & Range
COG(NPO) or T.C Series	B	+/- 0.1pF	0.5 ~ 3pF
	C	+/- 0.25pF	0.5 ~ 10pF
	D	+/- 0.5pF	
	F	+/- 1.0pF	
	F	+/- 1%	E-24 Series for over 10pF
	*G	+/- 2%	
	J	+/- 5%	
K	+/- 10%		
B(X7R)	J	+/- 5%	E-12 Series
	K	+/- 10%	
	M	+/- 20%	
F(Y5V)	Z	-20% ~ +80%	E-6 Series

Please Consult us for special tolerances. * : Option

RATED VOLTAGE

Symble	Rated Voltage(Vdc)
Q	6.3V
P	10V
O	16V
A	25V
B	50V
C	100V

PACKAGING TYPE

Symbol	Packaging	Symbol	Packaging
B	Bulk	D	Cardboard Tape, 13" Reel
P	Cassette	L	Cardboard Tape, 13" Reel
C	Cardboard Tape, 7" Reel	E	Embossed Tape, 7" Reel
O	Cardboard Tape, 10" Reel	F	Embossed Tape, 13" Reel

STANDARD CAPACITANCE STEP

Series	Capacitance Step											
E- 3	1.0				2.2				4.7			
E- 6	1.0	1.5	2.2	3.3	4.7	6.8						
E-12	1.0	1.2	1.5	1.8	2.2	2.7	3.3	3.9	4.7	5.6	6.8	8.2
E-24	1.0	1.2	1.5	1.8	2.2	2.7	3.3	3.9	4.7	5.6	6.8	8.2
	1.1	1.3	1.6	2.0	2.4	3.0	3.6	4.3	5.1	6.2	7.5	9.1

Standard Capacitance is " Each step * 10ⁿ"

CAPACITANCE RANGE

CLASS I

Temperature Characteristics	Size	Voltage	Capacitance Range (pF)										
			0.5	10	100	1000	10000	100000	1000000	10000000			
SL,UJ	05 (0402)	50V	██████████		240								
	10 (0603)	50 V	████████████████████			1000							
		100 V	██████████████████		680								
	21 (0805)	50 V	██████████████████			2700							
		100 V	██████████████████			1000							
	31 (1206)	50 V	██████████████████████████████				8200						
		100 V	████████████████████			3900							
	C(COG) & TC Series	03 (0201)	25V	██████████		100							
05 (0402)		25V	██████████		150								
		50V	██████████		150								
10 (0603)		25 V	████████████████████			1000							
		50 V	████████████████████			1000							
		100 V	██████████████████		300								
21 (0805)		50 V	██████████████████			2200							
		100 V	██████████████████			1200							
		200 V	██████████████████		560								
31 (1206)		25 V				1500	██████████	10000					
		50 V	██████████████████			4700							
		100 V	████████████████████			5100							
32 (1210)		50 V			560	██████████	47000						
		100 V				2200	██████████	18000					
43 (1812)		50V				1000	██████████	68000					
		100 V				1000	██████████	36000					

Multilayer Chip Capacitors - General

CLASS II , B(X7R)

Temperature Characteristics	Size	Voltage	Capacitance Range (pF)							
			10	100	1000	10000	100000	1000000	100000000	
B(X7R)	03 (0201)	16 V		100	2200					
		25 V		100	1000					
	05 (0402)	10 V		100			100000			
		16 V		100			68000			
		25 V		100			10000			
	10 (0603)	50 V		100			4700			
		6.3V							1000000	
		10 V		100			470000			
		16 V		100			220000			
		25 V		100			47000			
		50 V		100			27000			
	21 (0805)	100 V		100			4700			
		6.3V						2200000	4700000	
		10 V		100					1000000	
		16 V		100					1000000	
		25 V		100					330000	
		50 V		100					100000	
	31 (1206)	100 V		100					33000	
		6.3V						6800000	10000000	
		10 V			1000				4700000	
		16 V			1000				3300000	
		25 V			1000				1000000	
		50 V			1000				470000	
	32 (1210)	100 V			1000				150000	
		6.3V						10000000	22000000	
		10 V			1000				10000000	
		16 V			1000				10000000	
		25 V			1000				1000000	
		50 V			1000				470000	
	43 (1812)	100 V			1000				430000	
		10V							10000000	22000000
		16V								
		25V								
		50V				10000			3300000	
		100 V				10000			820000	

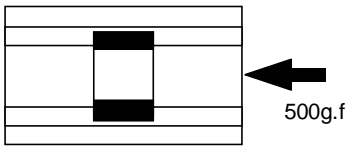
Multilayer Chip Capacitors - General

CLASS II , F(Y5V)

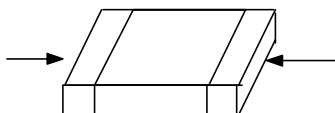
Temperature Characteristics	Size	Voltage	Capacitance Range (pF)								
			10	100	1000	10000	100000	1000000	10000000	100000000	
F(Y5V)	05 (0402)	10 V			2200	██████████	220000				
		16 V			2200	██████████	220000				
		25 V			2200	██████████	33000				
		50 V			2200	██████████	10000				
	10 (0603)	10 V			2200	████████████████████	1000000				
		16 V			2200	██████████████████	470000				
		25 V			2200	██████████████████	330000				
		50 V			2200	██████████████████	100000				
	21 (0805)	10 V					1000000	██████████	4700000		
		16 V			10000	████████████████████	2200000				
		25 V			10000	████████████████████	1000000				
		50 V			10000	██████████████████	470000				
	31 (1206)	10 V				100000	████████████████████	10000000			
		16 V			10000	████████████████████	4700000				
		25 V			10000	████████████████████	3300000				
		50 V			10000	██████████████████	680000				
	32 (1210)	10 V					10000000	██████████	22000000		
		16 V				100000	████████████████████	10000000			
		25 V				100000	████████████████████	3300000			
		50 V				100000	██████████	1000000			
55 (2220)	10V								██████████	100000000	

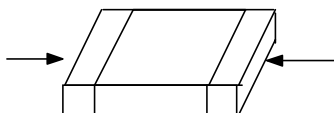
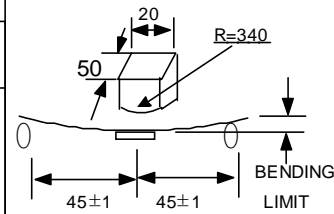
Multilayer Chip Capacitors – General

RELIABILITY AND TEST CONDITIONS

NO	ITEM	PERFORMANCE	TEST CONDITION																	
1	APPEARANCE	NO ABNORMAL EXTERIOR APPEARANCE	THROUGH MICROSCOPE(x10)																	
2	INSULATION RESISTANCE	10,000Mohm OR 500Mohm uF PRODUCT WHICHEVER IS SMALLER (RATED VOLTAGE IS BELOW 16V : 10,000Mohm OR 100Mohm uF)	RATED VOLTAGE SHALL BE APPLIED. MEASUREMENT TIME IS 60 ~ 120 RATED VOLTAGE TIME 60 SEC.																	
3	WITHSTANDING VOLTAGE	NO DIELECTRIC BREAKDOWN OR MECHANICAL BREAKDOWN	CLASS I : 300% OF THE RATED VOLTAGE FOR 1-5 SEC, CLASS II :250% OF THE RATED VOLTAGE FOR 1-5 SEC IS APPLIED WITH LESS THAN 50mA CURRENT																	
4	CAPACITANCE	CLASS I WITHIN THE SPECIFIED TOLERANCE	CAPACITANCE	FREQUENCY	VOLTAGE															
			1,000pF AND BELOW	1MHZ+/-10%	0.5 ~ 5 Vrms															
		MORE THAN 1,000pF	1KHZ+/-10%																	
		CLASS II WITHIN THE SPECIFIED TOLERANCE	CAPACITANCE	FREQUENCY	VOLTAGE															
22uF AND BELOW	1KHZ+/-10%		1.0+/-0.2Vrms																	
MORE THAN 22uF	120Hz+/-20%		0.5+/-0.1Vrms																	
5	Q	CLASS I OVER 30pF : Q >= 1,000 LESS THAN 30pF: Q >=400 +20xC (C : CAPACITANCE)	CAPACITANCE	FREQUENCY	VOLTAGE															
			1,000pF AND BELOW	1MHZ+/-10%	0.5 ~ 5 Vrms															
			MORE THAN 1,000pF	1KHZ+/-10%																
6	Tan delta	CLASS II	CAPACITANCE	FREQUENCY	VOLTAGE															
			22uF AND BELOW	1KHZ+/-10%	1.0+/-0.2Vrms															
			MORE THAN 22uF	120Hz+/-20%	0.5+/-0.1Vrms															
<table border="1"> <thead> <tr> <th>Char.</th> <th>25V and over</th> <th>16V</th> <th>10V</th> <th>6.3V</th> </tr> </thead> <tbody> <tr> <td>B</td> <td>0.025 MAX</td> <td>0.035 MAX</td> <td>0.035 MAX</td> <td>0.05 MAX</td> </tr> <tr> <td>F</td> <td>0.05 MAX</td> <td>0.07 MAX (C<1.0uF) 0.09 MAX (C>=1.0uF)</td> <td>0.125 MAX</td> <td>-</td> </tr> </tbody> </table>			Char.	25V and over	16V	10V	6.3V	B	0.025 MAX	0.035 MAX	0.035 MAX	0.05 MAX	F	0.05 MAX	0.07 MAX (C<1.0uF) 0.09 MAX (C>=1.0uF)	0.125 MAX	-			
Char.	25V and over	16V	10V	6.3V																
B	0.025 MAX	0.035 MAX	0.035 MAX	0.05 MAX																
F	0.05 MAX	0.07 MAX (C<1.0uF) 0.09 MAX (C>=1.0uF)	0.125 MAX	-																
7	ADHESIVE STRENGTH OF TERMINATION	NO INDICATION OF PEELING SHALL OCCUR ON THE TERMINAL ELECTRODE.	<p>A 500g.f PRESSURE SHALL BE APPLIED FOR 10+/-1 SECOND.</p> 																	

Multilayer Chip Capacitors - General

NO	ITEM	PERFORMANCE	TEST CONDITION									
8	BENDING STRENGTH	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR.									
		CAPACITANCE	CHARACTER	CHANGE OF CAPACITANCE								
	CLASS I		WITHIN +/-5% OR +/- 0.5 pF WHICHEVER IS LARGER									
	CLASS II		B(X7R) WITHIN +/-12.5% F WITHIN +/-30%									
9	SOLDERABILITY	MORE THAN 95% OF THE TERMINAL SURFACE IS TO BE SOLDERED NEWLY, SO METAL PART(A) DOES NOT COME OUT OR DISSOLVE	SOLDER TEMPERATURE : 230+/-5c SOLDER : H63A FLUX : ROSIN PRE-HEATING : AT 80-120c FOR 10-30SEC.									
												
10	RESISTANCE TO SOLDERING HEAT	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR									
		CAPACITANCE	CHARACTERISTIC	CAP. CHANGE								
	CLASS I		WITHIN +/-2.5% OR +/-0.25pF WHICHEVER IS LARGER									
	CLASS II		B WITHIN +/-7.5% F WITHIN +/-20%									
	Q	30pF AND OVER : Q>= 1000 LESS THAN 30pF : Q>= 400+20xC	DIP : SOLDER TEMPERATURE OF 270+/-5c DIP TIME : 10+/-1 SEC. EACH TERMINATION SHALL BE FULLY IMMERSED AND PREHEATED AS FOLLOWING: <table border="1" data-bbox="989 1209 1324 1344"> <thead> <tr> <th>STEP</th> <th>TEMP.(C)</th> <th>TIME (SEC.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>80~100</td> <td>60</td> </tr> <tr> <td>2</td> <td>150~180</td> <td>60</td> </tr> </tbody> </table> MEASURE AT ROOM TEMP. AFTER COOLING FOR CLASS I : 24 +/- 2 HOURS CLASS II : 48 +/- 4 HOURS	STEP	TEMP.(C)	TIME (SEC.)	1	80~100	60	2	150~180	60
	STEP	TEMP.(C)		TIME (SEC.)								
	1	80~100		60								
	2	150~180		60								
Tan delta	TO SATISFY THE SPECIFIED INITIAL VALUE											
INSULATION RESISTANCE	TO SATISFY THE SPECIFIED INITIAL VALUE											
WITHSTANDING VOLTAGE	TO SATISFY THE SPECIFIED INITIAL VALUE											



STEP	TEMP.(C)	TIME (SEC.)
1	80~100	60
2	150~180	60

Multilayer Chip Capacitors – General

NO	ITEM	PERFORMANCE	TEST CONDITION					
11	VIBRATION TEST	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR.					
		CAPACITANCE	CHARACTERISTIC	CAP. CHANGE				
			CLASS I	WITHIN +/-2.5% OR +/-0.25pF WHICHEVER IS LARGER				
			CLASS II	B WITHIN +/-5% F WITHIN +/-20%				
		Q CLASS I	30pF AND OVER : Q>= 1000 LESS THAN 30pF : Q>= 400+20xC	THE CAPACITOR SHALL BE SUBJECTED TO A HARMONIC MOTION HAVING A TOTAL AMPLITUDE OF 1.5mm. THE ENTIRE FREQUENCY RANGE, FROM 10 TO 55Hz AND RETURN TO 10Hz, SHALL BE TRAVERSED IN 1 MINUTE. THIS CYCLE SHALL BE PERFORMED 2 HOURS IN EACH THERE MUTUALLY PERPENDICULAR DIRECTION, FOR TOTAL PERIOD OF 6 HOURS.				
		Tan delta CLASS II	TO SATISFY THE SPECIFIED INITIAL VALUE					
		INSULATION RESISTANCE	TO SATISFY THE SPECIFIED INITIAL VALUE					
12	HUMIDITY (STEADY STATE)	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR					
		CAPACITANCE	CHARACTERISTIC	CAPACITANCE CHANGE				
			CLASS I	WITHIN +/-5% OR +/-0.5pF WHICHEVER IS LARGER				
			CLASS II	B WITHIN +/-12.5% F WITHIN +/-30%				
		Q CLASS I	30pF AND OVER : Q>= 350 10 ~30pF : Q>= 275 + 2.5°C LESS THAN 10pF : Q>= 200 + 10xC	TEMPERATURE : 40+/-2C RELATIVE HUMIDITY : 90-95 %RH TEST TIME : 500 +12/-0 Hr. MEASURE AT ROOM TEMPERATURE AFTER COOLING FOR CLASS I : 24+/-2 Hr. CLASS II : 48+/-4 Hr.				
		Tan delta CLASS II	Char.		25V and over	16V	10V	6.3V
			B		0.05 MAX	0.05 MAX	0.05 MAX	0.075 MAX
F	0.075 MAX	0.1 MAX (C<1.0uF) 0.125 MAX (C>=1.0uF)	0.15 MAX		-			
INSULATION RESISTANCE	MINIMUM INSULATION RESISTANCE: 1,000 Mohm OR 50Mohm*uF PRODUCT WHICHEVER IS SMALLER							

* THE INITIAL VALUE OF HIGH DIELECTRIC CONSTANT SERIES SHALL BE MEASURED AFTER THE HEAT TREATMENT OF 150 +/-10C, 1hr AND SITTING OF 48+/-4hr AT ROOM TEMPERATURE & ROOM HUMIDITY.

Multilayer Chip Capacitors – General

NO	ITEM	PERFORMANCE	TEST CONDITION														
13	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR	APPLIED VOLTAGE : RATED VOLTAGE														
	CAPACITANCE	CHARACTERISTIC	CAPACITANCE CHANGE														
		CLASS I	WITHIN +/-7.5% OR +/-0.75pF WHICHEVER IS LARGER	TEMPERATURE : 40+/-2 C RELATIVE HUMIDITY : 90-95%RH													
		CLASS II	<table border="1"> <tr> <td>B</td> <td>WITHIN +/-12.5%</td> </tr> <tr> <td>F</td> <td>WITHIN +/-30%</td> </tr> </table>	B	WITHIN +/-12.5%	F	WITHIN +/-30%	TEST TIME : 500 +12/-0 Hr.									
	B	WITHIN +/-12.5%															
F	WITHIN +/-30%																
Q CLASS I	30pF AND OVER : Q>= 200 30pF AND BELOW : Q>= 100 + 10/3xC	CURRENT APPLIED : 50mA MAX.															
Tan delta CLASS II	<table border="1"> <tr> <th>Char.</th> <th>25V and over</th> <th>16V</th> <th>10V</th> <th>6.3V</th> </tr> <tr> <td>B</td> <td>0.05 MAX</td> <td>0.05 MAX</td> <td>0.05 MAX</td> <td>0.075 MAX</td> </tr> <tr> <td>F</td> <td>0.075 MAX</td> <td>0.1 MAX (C <1.0uF) 0.125 MAX (C>=1.0uF)</td> <td>0.15 MAX</td> <td>-</td> </tr> </table>	Char.	25V and over	16V	10V	6.3V	B	0.05 MAX	0.05 MAX	0.05 MAX	0.075 MAX	F	0.075 MAX	0.1 MAX (C <1.0uF) 0.125 MAX (C>=1.0uF)	0.15 MAX	-	MEASURING AT ROOM TEMPERATURE AFTER COOLING FOR CLASS I : 24+/-2 Hr. CLASS II : 48+/-4 Hr.
Char.	25V and over	16V	10V	6.3V													
B	0.05 MAX	0.05 MAX	0.05 MAX	0.075 MAX													
F	0.075 MAX	0.1 MAX (C <1.0uF) 0.125 MAX (C>=1.0uF)	0.15 MAX	-													
INSULATION RESISTANCE	MINIMUM INSULATION RESISTANCE: 500 Mohm OR 25Mohm uF PRODUCT, WHICHEVER IS SMALLER.																
14	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR	APPLIED VOLTAGE : 200% OF RATED VOLTAGE														
	CAPACITANCE	CHARACTERISTIC	CAP. CHANGE														
		CLASS I	WITHIN +/-3% OR +/-0.3pF, WHICHEVER IS LARGER	TEST TIME : 1000 +48/-0 Hr. CURRENT APPLIED : 50mA MAX.													
		CLASS II	<table border="1"> <tr> <td>B</td> <td>WITHIN +/-12.5%</td> </tr> <tr> <td>F</td> <td>WITHIN +/-30%</td> </tr> </table>	B	WITHIN +/-12.5%	F	WITHIN +/-30%	<table border="1"> <tr> <th>CHAR.</th> <th>TEMP.</th> </tr> <tr> <td>CLASS I</td> <td>125 +/-3 C</td> </tr> <tr> <td rowspan="2">CLASS II</td> <td>B</td> <td>125 +/-3 C</td> </tr> <tr> <td>F</td> <td>85 +/-3 C</td> </tr> </table>	CHAR.	TEMP.	CLASS I	125 +/-3 C	CLASS II	B	125 +/-3 C	F	85 +/-3 C
	B	WITHIN +/-12.5%															
F	WITHIN +/-30%																
CHAR.	TEMP.																
CLASS I	125 +/-3 C																
CLASS II	B	125 +/-3 C															
	F	85 +/-3 C															
Q CLASS I	30pF AND OVER : Q >= 350 10 ~ 30 pF : Q >= 275 + 2.5xC LESS THAN 10pF : Q >=200 + 10xC																
Tan delta CLASS II	<table border="1"> <tr> <th>Char.</th> <th>25V over</th> <th>16V</th> <th>10V</th> <th>6.3V</th> </tr> <tr> <td>B</td> <td>0.05 MAX</td> <td>0.05 MAX</td> <td>0.05 MAX</td> <td>0.075 MAX</td> </tr> <tr> <td>F</td> <td>0.075 MAX</td> <td>0.1 MAX (C <1.0uF) 0.125 MAX (C>=1.0uF)</td> <td>0.15 MAX</td> <td>-</td> </tr> </table>	Char.	25V over	16V	10V	6.3V	B	0.05 MAX	0.05 MAX	0.05 MAX	0.075 MAX	F	0.075 MAX	0.1 MAX (C <1.0uF) 0.125 MAX (C>=1.0uF)	0.15 MAX	-	(INITIAL VALUE MEASUREMENT) FOR CLASS II CAPACITORS, 200 % OF RATED VOLTAGE SHALL BE APPLIED FOR 1 HOUR AT THE MAXIMUM OPERATING TEMPERATURE, THEN KEEP IT AT ROOM TEMPERATURE. FOR 48 +/- 4 Hrs.
Char.	25V over	16V	10V	6.3V													
B	0.05 MAX	0.05 MAX	0.05 MAX	0.075 MAX													
F	0.075 MAX	0.1 MAX (C <1.0uF) 0.125 MAX (C>=1.0uF)	0.15 MAX	-													
INSULATION RESISTANCE	MINIMUM INSULATION RESISTANCE: 1,000 Mohm OR 50Mohm uF PRODUCT WHICHEVER IS SMALLER																

Multilayer Chip Capacitors – General

NO	ITEM	PERFORMANCE	TEST CONDITION															
15	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR	CAPACITORS SHALL BE SUBJECTED TO FIVE CYCLES OF THE TEMPERATURE CYCLE AS FOLLOWING <table border="1" data-bbox="997 474 1343 857"> <thead> <tr> <th>STEP</th> <th>TEMP.(C)</th> <th>TIME (MIN)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>MIN. RATED TEMP. +0/-3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25</td> <td>2~3</td> </tr> <tr> <td>3</td> <td>MAX. RATED TEMP. +3/-0</td> <td>30</td> </tr> <tr> <td>4</td> <td>25</td> <td>2~3</td> </tr> </tbody> </table>	STEP	TEMP.(C)	TIME (MIN)	1	MIN. RATED TEMP. +0/-3	30	2	25	2~3	3	MAX. RATED TEMP. +3/-0	30	4	25	2~3
	STEP	TEMP.(C)		TIME (MIN)														
	1	MIN. RATED TEMP. +0/-3		30														
	2	25		2~3														
	3	MAX. RATED TEMP. +3/-0		30														
	4	25		2~3														
	CAPACITANCE	CHARACTERISTIC		CAP. CHANGE														
CLASS I		WITHIN +/-2.5% OR +/-0.25pF WHICHEVER IS LARGER																
		CLASS II	WITHIN +/-7.5%															
		B	WITHIN +/-20%															
	F	WITHIN +/-20%																
Q CLASS I	30 pF AND OVER : Q >= 1000 LESS THAN 30pF:Q >=400 +20xC																	
Tan delta CLASS II	TO SATISFY THE SPECIFIED INITIAL VALUE																	
INSULATION RESISTANCE	TO SATISFY THE SPECIFIED INITIAL VALUE	MEASURE AT ROOM TEMPERATURE AFTER COOLING FOR CLASS I : 24+/-2 Hr. CLASS II : 48+/-4 Hr.																