1. DESCRIPTION

MLCC consists of a conducting material and electrodes. To manufacture a chip-type SMT and achieve miniaturization, high density and high efficiency, ceramic condensers are used.

PDC high capacitance MLCC offers low ESR and excellent frequency characteristics to be suited for coupling and decoupling applications in circuit. The high dielectric constant material X7R, X5R and Y5V are used for this series product.

2. FEATURES

a. Realize high capacitance in given sizes.
b. Capacitor with lead-free termination (pure Tin).

3. APPLICATIONS

a. Digital circuit coupling or decoupling applications.
b. For high frequency and high-density type power suppliers.
c. For bypassing.

4. HOW TO ORDER

MA	1210	XR	—	225	K	—	250	ER	G
PDC Family	**Size** Inch (mm) **0402** (1005) **0603** (1608) **0805** (2012) **1206** (3216) **1210** (3225) **1808** (4520) **1812** (4532) **1825** (4563) **2220** (5750) **2225** (5763)	**Dielectric** XR: X7R or X5R YV: Y5V		**Capacitance** Two significant digits followed by no. of zeros. And R is in place of decimal point. eg.: 106=10x10^6 =10μF	**Tolerance** **K**=±10% **M**=±20% **Z**=-20/+80%		**Rated voltage** Two significant digits followed by no. of zeros. And R is in place of decimal point. **6R3**=6.3 VDC **100=**10 VDC **160=**16 VDC **250=**25 VDC **500=**50 VDC **101=**100 VDC **251=**250 VDC	**Packaging** ER:Tape and Reel, Embossed Tape PR: Tape and Reel, Paper Tape No Code: Bulk	**Control Code**

5. EXTERNAL DIMENSIONS

Size Inch (mm)	L (mm)	W (mm)	Thickness mm	M_B min (mm)
0402 (1005)	1.00±0.05	0.50±0.05	0.50±0.05	0.15
0603 (1608)	1.60±0.10	0.80±0.10	0.80±0.07	0.20
	1.60+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10	
0805 (2012)	2.00±0.20	1.25±0.20	0.80±0.10	0.30
			1.25±0.10	
			1.25±0.20	
1206 (3216)	3.20±0.20	1.60±0.20	0.95±0.10	0.30
			1.25±0.10	
			1.60±0.20	
			1.15±0.15	
	3.20+0.30/-0.10	1.60+0.30/-0.10	1.60+0.30/-0.10	
1210 (3225)	3.20±0.40	2.50±0.30	0.95±0.10	0.30
			1.25±0.10	
			1.60±0.20	
			2.00±0.20	
			2.50±0.30	
1812 (4532)	4.50±0.40	3.20±0.30	1.25±0.10	0.26
			2.00±0.20	
			2.50±0.30	
1825 (4563)	4.50±0.40	6.30±0.40	2.00±0.20	0.26
			2.50±0.30	
2220 (5750)	5.70±0.40	5.00±0.40	2.00±0.20	0.30
			2.50±0.30	
2225 (5763)	5.70±0.40	6.30±0.40	2.00±0.20	0.30
			2.50±0.30	

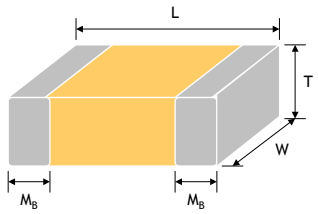

Fig. 1 The outline of MLCC

6. GENERAL ELECTRICAL DATA

Dielectric	X7R	X5R	Y5V
Size	0402, 0603, 0805, 1206, 1210, 1812, 1825, 2220, 2225		
Capacitance range*	100nF to 10μF	100nF to 22μF	150nF to 100μF
Capacitance tolerance**	K (±10%), M (±20%)		Z (-20/+80%)
Rated voltage (WVDC)	6.3V, 10V, 16V, 25V, 50V, 100V		
Tan δ*	Note 1		
Insulation resistance at Ur	RxC≥500ΩxF		
Operating temperature	-55 to +125°C	-55 to +85°C	-25 to +85°C
Capacitance characteristic	±15%		+30/-80%
Termination	Ni/Sn (lead-free termination)		

* Measured at 1.0±0.2Vrms, 1.0kHz±10% for C≤10μF; 0.5±0.2Vrms, 120Hz±20% for C>10μF, 30~70% related humidity, 25°C ambient temperature for X7R, X5R and at 20°C for Y5V.

** 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.

Note 1

X7R/X5R

Rated vol.	D.F.	Exception of D.F.	
≥50V	≤2.5%	≤3%	0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF
25V	≤3.5%	≤5%	0805≥1μF; 1210≥10μF
		≤7%	0603≥0.33μF; 1206≥4.7uF
		≤10%	0402≥0.10μF; 0603≥0.47uF; 0805≥2.2uF; 1206≥6.8μF
16V	≤3.5%	≤5%	0402≥0.033μF; 0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7uF
		≤10%	0603≥0.68uF; 0805≥2.2uF; 1206≥4.7uF; 1210≥22μF
10V	≤5.0%	≤10%	0402≥0.33μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2uF; 1210≥22μF
		≤15%	0402≥1μF
6.3V	≤10%	≤15.0%	0603≥10μF; 0805≥4.7μF; 1210≥100μF
		≤20.0%	0402≥2.2μF

Y5V

Rated vol.	D.F.	Exception of D.F.	
≥50V	≤5.0%	≤7%	0603≥0.1uF; 0805≥0.47μF
35V	≤7%	---	---
25V	≤5.0%	≤7%	0402≥0.068μF; 0603≥0.1uF; 0805≥0.33μF; 1206≥1μF; 1210≥4.7μF
		≤9%	0402≥0.068μF; 0603≥0.47μF 1206≥4.7uF
16V (C<1.0μF)	≤7.0%	≤9%	0402≥0.068μF; 0603≥0.68μF
16V (C≥1.0μF)	≤9.0%	≤12.5%	0805≥3.3μF; 1206≥10μF; 1210≥22μF; 1812≥47μF
10V	≤12.5%	---	
6.3V	≤20%	---	--

7. CAPACITANCE RANGE

7-1 X7R Dielectric

DIELECTRIC		X7R																						
SIZE		0603				0805				1206					1210					1812					
RATED VOLTAGE (VDC)		10	16	25	50	6.3	10	16	25	6.3	10	16	25	50	10	16	25	50	100	10	16	25	50	100	250
Capacitance	0.10μF (104)																								
	0.15μF (154)																								
	0.22μF (224)																								
	0.33μF (334)																								
	0.47μF (474)																								
	0.68μF (684)																								
	1.0μF (105)																								
	1.5μF (155)																								
	2.2μF (225)																								
	3.3μF (335)																								
	4.7μF (475)																								
	6.8μF (685)																								
	10μF (106)																								
	22uF(226)																								

DIELECTRIC		X7R								
SIZE		1825			2220			2225		
RATED VOLTAGE (VDC)		50	100	250	50	100	250	50	100	250
Capacitance	1.0μF (105)									
	1.2μF (125)									
	1.5μF (155)									
	2.2μF (225)									
	2.7μF (225)									
	3.3μF (335)									
	3.9μF (395)									
	4.7μF (475)									
	5.6μF (565)									
	6.8μF (685)									

7-2 X5R Dielectric

DIELECTRIC		X5R																			
SIZE		0402			0603				0805				1206				1210			
RATED VOLTAGE (VDC)		6.3	10	16	6.3	10	16	25	6.3	10	16	25	6.3	10	16	25	6.3	10	16	25
Capacitance	0.027μF (273)																			
	0.033μF (333)																			
	0.039μF (393)																			
	0.047μF (473)																			
	0.056μF (563)																			
	0.068μF (683)																			
	0.082μF (823)																			
	0.10μF (104)																			
	0.15μF (154)																			
	0.22μF (224)																			
	0.27uF (274)																			
	0.33μF (334)																			
	0.47μF (474)																			
	0.68μF (684)																			
	0.82μF (824)																			
	1.0μF (105)																			
	1.5μF (155)																			
	2.2μF (225)																			
	3.3μF (335)																			
	4.7μF (475)																			
	6.8μF (685)																			
	10μF (106)																			
	22μF (226)																			
	47μF (476)																			
	100μF (107)																			

7-3 Y5V Dielectric

DIELECTRIC		Y5V										
SIZE		0402		0603				0805				
RATED VOLTAGE (VDC)		63	10	63	10	16	25V	6.3	10	16	25	50
Capacitance	0.15μF (154)											
	0.22μF (224)											
	0.33μF (334)											
	0.47μF (474)											
	0.68μF (684)											
	1.0μF (105)											
	1.5μF (155)											
	2.2μF (225)											
	3.3μF (335)											
	4.7μF (475)											
	6.8μF (685)											
	10μF (106)											
	22μF (226)											

DIELECTRIC		Y5V													
SIZE		1206					1210						1812		
RATED VOLTAGE (VDC)		10	16	25	35	50	6.3	10	16	25	35	50	10	16	25	50
Capacitance	1.0μF (105)														
	1.5μF (155)														
	2.2μF (225)														
	3.3μF (335)														
	4.7μF (475)														
	6.8μF (685)														
	10μF (106)														
	22μF (226)														
	47μF (476)														
	100μF (107)														

8. RELIABILITY TEST CONDITIONS AND REQUIREMENTS

<table>
<tr><th>No.</th><th>Item</th><th>Test Condition</th><th>Requirements</th></tr>
<tr><td>1.</td><td>Visual and Mechanical</td><td>---</td><td>* No remarkable defect.
* Dimensions to conform to individual specification sheet.</td></tr>
<tr><td>2.</td><td>Capacitance</td><td>Cap≤10μF, 1.0±0.2Vrms, 1kHz±10%</td><td>* Shall not exceed the limits given in the detailed spec.</td></tr>
<tr><td>3.</td><td>Q/ D.F. (Dissipation Factor)</td><td>Cap>10μF, 0.5±0.2Vrms, 120Hz±20%</td><td>X7R, X5R:
<table>
<tr><th>Rated vol.</th><th>D.F.</th><th colspan="2">Exception of D.F.</th></tr>
<tr><td>≥50V</td><td>≤2.5%</td><td>≤3%</td><td>0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF</td></tr>
<tr><td rowspan="3">25V</td><td rowspan="3">≤3.5%</td><td>≤5%</td><td>0805≥1μF; 1210≥10μF</td></tr>
<tr><td>≤7%</td><td>0603≥0.33μF; 1206≥4.7uF</td></tr>
<tr><td>≤10%</td><td>0402≥0.10μF; 0603≥0.47uF; 0805≥2.2uF 1206≥6.8μF</td></tr>
<tr><td rowspan="2">16V</td><td rowspan="2">≤3.5%</td><td>≤5%</td><td>0402≥0.033μF; 0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF;1210≥4.7uF</td></tr>
<tr><td>≤10%</td><td>0603≥0.68uF; 0805≥2.2uF; 1206≥4.7uF 1210≥22μF</td></tr>
<tr><td rowspan="2">10V</td><td rowspan="2">≤5.0%</td><td>≤10%</td><td>0402≥0.33μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2uF; 1210≥22μF</td></tr>
<tr><td>≤15%</td><td>0402≥1μF</td></tr>
<tr><td rowspan="2">6.3V</td><td rowspan="2">≤10%</td><td>≤15%</td><td>0603≥10μF;0805≥4.7μF; 1210≥100μF</td></tr>
<tr><td>≤20%</td><td>0402≥2.2μF</td></tr>
</table>
Y5V
<table>
<tr><th>Rated vol.</th><th>D.F.</th><th colspan="2">Exception of D.F.</th></tr>
<tr><td>≥50V</td><td>≤5.0%</td><td>≤7%</td><td>0603≥0.1uF; 0805≥0.47μF</td></tr>
<tr><td>35V</td><td>≤7%</td><td>---</td><td>---</td></tr>
<tr><td rowspan="2">25V</td><td rowspan="2">≤5.0%</td><td>≤7%</td><td>0402≥0.068μF; 0603≥0.1uF; 0805≥0.33μF; 1206≥1μF; 1210≥4.7μF</td></tr>
<tr><td>≤9%</td><td>0402≥0.068μF; 0603≥0.47μF 1206≥4.7uF</td></tr>
<tr><td>16V (C<1.0μF)</td><td>≤7.0%</td><td>≤9%</td><td>0402≥0.068μF; 0603≥0.68μF</td></tr>
<tr><td>16V (C≥1.0μF)</td><td>≤9.0%</td><td>≤12.5%</td><td>0805≥3.3μF; 1206≥10μF; 1210≥22μF; 1812≥47μF</td></tr>
<tr><td>10V</td><td>≤12.5%</td><td>---</td><td></td></tr>
<tr><td>6.3V</td><td>≤20%</td><td>---</td><td>--</td></tr>
</table></td></tr>
<tr><td>4.</td><td>Dielectric Strength</td><td>* To apply voltage:
≤ 100V =2.5 times of U_R
> 100V =2.0 times of U_R
* Duration: 1 to 5 sec.
* Charge and discharge current less than 50mA.</td><td>* No evidence of damage or flash over during test.</td></tr>
<tr><td>5.</td><td>Insulation Resistance</td><td>To apply rated voltage for max. 120 sec.</td><td>≥10GΩ or RxC≥500Ω-F whichever is smaller.
Class II (X5R, X6S, X7R, Y5V)
<table>
<tr><th>Rated voltage</th><th>I.R.</th></tr>
<tr><td>10V: 0603≥0.47uF; 0805≥2.2μF; 1206≥6.8uF;</td><td rowspan="2">≧ 100 Ω-F</td></tr>
<tr><td>6.3V</td></tr>
</table></td></tr>
<tr><td>6.</td><td>Temperature Coefficient</td><td>With no electrical load.
<table>
<tr><th>T.C.</th><th>Operating Temp</th></tr>
<tr><td>X7R</td><td>-55~125°C at 25°C</td></tr>
<tr><td>X5R</td><td>-55~85°C at 25°C</td></tr>
<tr><td>Y5V</td><td>-25~85°C at 20°C</td></tr>
</table></td><td>
<table>
<tr><th>T.C.</th><th>Capacitance Change</th></tr>
<tr><td>X7R</td><td>Within ±15%</td></tr>
<tr><td>X5R</td><td>Within ±15%</td></tr>
<tr><td>Y5V</td><td>Within +30%/-80%</td></tr>
</table></td></tr>
<tr><td>7.</td><td>Adhesive Strength of Termination</td><td>* Pressurizing force：
5N (≤0603) and 10N (>0603)
* Test time: 10±1 sec.</td><td>* No remarkable damage or removal of the terminations.</td></tr>
<tr><td>8.</td><td>Solderability</td><td>* Solder temperature: 235±5°C
* Dipping time: 2±0.5 sec.</td><td>75% min. coverage of all metalized area.</td></tr>
<tr><td>9.</td><td>Resistance to flexure of substrate</td><td>* The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1 mm per second until the deflection becomes 1 mm and then the pressure shall be maintained for 5±1 sec.
* Measurement to be made after keeping at room temp. for 24±2 hrs.</td><td>* No remarkable damage.
* Cap change：
X7R, X5R: within ±12.5%
Y5V: within ±30%
(This capacitance change means the change of capacitance under specified flexure of substrate from the capacitance measured before the test.)</td></tr>
</table>

<table>
<tr><th>No.</th><th>Item</th><th>Test Condition</th><th>Requirements</th></tr>
<tr><td>10</td><td>Resistance to Soldering Heat</td><td>* Solder temperature: 260±5°C
* Dipping time: 10±1 sec
* Preheating: 120 to 150°C for 1 minute before immerse the capacitor in a eutectic solder.
* Before initial measurement (Class II only): Perform 150+0/-10°C for 1 hr and then set for 48±4 hrs at room temp.
* Measurement to be made after keeping at room temp. for 48±4 hrs.</td><td>* No remarkable damage.
* Cap change:
X7R, X5R: within ±7.5%
Y5V: within ±20%
* Q/D.F., I.R. and dielectric strength: To meet initial requirements.
* 25% max. leaching on each edge.</td></tr>
<tr><td>11.</td><td>Temperature Cycle</td><td>* Conduct the five cycles according to the temperatures and time.
<table>
<tr><th>Step</th><th>Temp. (°C)</th><th>Time (min.)</th></tr>
<tr><td>1</td><td>Min. operating temp. +0/-3</td><td>30±3</td></tr>
<tr><td>2</td><td>Room temp.</td><td>2~3</td></tr>
<tr><td>3</td><td>Max. operating temp. +3/-0</td><td>30±3</td></tr>
<tr><td>4</td><td>Room temp.</td><td>2~3</td></tr>
</table>
* Before initial measurement (Class II only): Perform 150+0/-10°C for 1 hr and then set for 48±4 hrs at room temp.
* Measurement to be made after keeping at room temp. for 48±4 hrs.</td><td>* No remarkable damage.
* Cap change：
X7R, X5R: within ±15%
Y5V: within ±20%
* Q/D.F., I.R. and dielectric strength: To meet initial requirements.</td></tr>
<tr><td>12.</td><td>Humidity (Damp Heat) Steady State</td><td>* Test temp.: 40±2°C
* Humidity: 90~95% RH
* Test time: 500+24/-0hrs.
* Measurement to be made after keeping at room temp. for 48±4 hrs.</td><td>* No remarkable damage.
* Cap change:
X7R, X5R: ≥10V, within ±15%; 6.3V, within ±25%
Y5V: ≥10V, within ±30%; 6.3V, within +30/-40%
* Q/D.F. value:
X7R, X5R:
<table>
<tr><th>Rated vol.</th><th>D.F.</th><th colspan="2">Exception of D.F.</th></tr>
<tr><td>≥50V</td><td>≤3.0%</td><td>≤6.0%</td><td>0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF</td></tr>
<tr><td rowspan="3">25V</td><td rowspan="3">≤5.0%</td><td>≤10.0%</td><td>0805≥1μF; 1210≥10μF;</td></tr>
<tr><td>≤14.0%</td><td>0603≥0.33 μF;0805≥2.2μF; 1206≥4.7uF</td></tr>
<tr><td>≤15.0%</td><td>0402≥0.10μF; 0603≥0.68μF; 0805≥4.7μF; 1206≥6.8μF</td></tr>
<tr><td rowspan="2">16V</td><td rowspan="2">≤5.0%</td><td>≤10.0%</td><td>0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF</td></tr>
<tr><td>≤15.0%</td><td>0402≥0.033μF; 0603≥0.68μF; 0805≥2.2uF; 1206≥6.8uF; 1210≥22uF</td></tr>
<tr><td rowspan="2">10V</td><td rowspan="2">≤7.5%</td><td>≤15.0%</td><td>0402≥0.33μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF</td></tr>
<tr><td>≤20.0%</td><td>0402≥1μF</td></tr>
<tr><td>6.3V</td><td>≤15.0%</td><td>≤30.0%</td><td>0402≥2.2uF;0603≥10μ;0805≥10μF 1210≥100μF</td></tr>
</table>
Y5V:
<table>
<tr><th>Rated vol.</th><th>D.F.</th><th colspan="2">Exception of D.F.</th></tr>
<tr><td>≥50V</td><td>≤7.5%</td><td>≤10.0%</td><td>0603≥0.1uF;0805≥0.47uF</td></tr>
<tr><td>35V</td><td>≤10%</td><td>---</td><td>---</td></tr>
<tr><td rowspan="2">25V</td><td rowspan="2">≤7.5%</td><td>≤10.0%</td><td>0402≥0.047uF;0603≥0.1μF; 0805≥0.33μF;1206≥1μF; 1210≥4.7μF</td></tr>
<tr><td>≤15.0%</td><td>0402≥0.068μF; 0603≥0.47μF 1206≥4.7uF</td></tr>
<tr><td>16V (C<1.0μF)</td><td>≤10.0%</td><td>≤12.5%</td><td>0402≥0.068μF; 0603≥0.68μF</td></tr>
<tr><td>16V (C≥1.0μF)</td><td>≤12.5%</td><td>≤20%</td><td>0805≥3.3μF; 1206≥10μF; 1210≥22μF; 1812≥47μF</td></tr>
<tr><td>10V</td><td>≤20.0%</td><td>---</td><td>---</td></tr>
<tr><td>6.3V</td><td>≤30%</td><td>---</td><td>---</td></tr>
</table>
* I.R.: ≥10V, ≥1GΩ or RxC≥50Ω-F whichever is smaller.
6.3V, RxC≥10Ω-F</td></tr>
</table>

<table>
<tr><th>No.</th><th>Item</th><th>Test Condition</th><th>Requirements</th></tr>
<tr><td>13.</td><td>High Temperature Load (Endurance)</td><td>
* Test temp.:
X7R: 125±3°C
X5R, Y5V: 85±3°C
* To apply voltage: 200% of rated voltage.
Exception item:
<table>
<tr><th>U_R</th><th>Cap. Range</th><th>To apply voltage</th></tr>
<tr><td>250V</td><td>1210, Cap. > 224
1812 , Cap.= 105
1825, Cap. > 105
2220, Cap. > 105
2225, Cap. > 105</td><td>150% of rated voltage</td></tr>
</table>
* Test time: 1000+24/-0 hrs.
* Measurement to be made after keeping at room temp. for 48±4 hrs.
</td><td>
* No remarkable damage.
* Cap change:
X7R, X5R: ≥10V, within ±15%; 6.3V, within ±25%
Y5V: ≥10V, within ±30%; 6.3V, within +30/-40%
* Q/D.F. value:
X7R, X5R:
<table>
<tr><th>Rated vol.</th><th>D.F.</th><th colspan="2">Exception of D.F.</th></tr>
<tr><td>≥50V</td><td>≤3.0%</td><td>≤6.0%</td><td>0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF</td></tr>
<tr><td rowspan="3">25V</td><td rowspan="3">≤5.0%</td><td>≤10.0%</td><td>0805≥1μF; 1210≥10μF;</td></tr>
<tr><td>≤14.0%</td><td>0603≥0.33 μF;0805≥2.2μF; 1206≥4.7uF</td></tr>
<tr><td>≤15.0%</td><td>0402≥0.10μF; 0603≥0.68μF;
0805≥4.7μF; 1206≥6.8μF</td></tr>
<tr><td rowspan="2">16V</td><td rowspan="2">≤5.0%</td><td>≤10.0%</td><td>0603≥0.15μF; 0805≥0.68μF;
1206≥2.2μF; 1210≥4.7μF</td></tr>
<tr><td>≤15.0%</td><td>0402≥0.033μF; 0603≥0.68μF; 0805≥2.2uF;
1206≥6.8uF; 1210≥22uF</td></tr>
<tr><td rowspan="2">10V</td><td rowspan="2">≤7.5%</td><td>≤15.0%</td><td>0402≥0.33μF; 0603≥0.33μF; 0805≥2.2μF;
1206≥2.2μF; 1210≥22μF</td></tr>
<tr><td>≤20.0%</td><td>0402≥1μF</td></tr>
<tr><td>6.3V</td><td>≤15.0%</td><td>≤30.0%</td><td>0402≥2.2uF; 0603≥10μ; 0805≥10μF
1210≥100μF</td></tr>
</table>
Y5V:
<table>
<tr><th>Rated vol.</th><th>D.F.</th><th colspan="2">Exception of D.F.</th></tr>
<tr><td>≥50V</td><td>≤7.5%</td><td>≤10.0%</td><td>0603≥0.1uF;0805≥0.47uF</td></tr>
<tr><td>35V</td><td>≤10%</td><td>---</td><td>---</td></tr>
<tr><td rowspan="2">25V</td><td rowspan="2">≤7.5%</td><td>≤10.0%</td><td>0402≥0.047uF;0603≥0.1μF; 0805≥
1206≥1μF; 1210≥4.7μF</td></tr>
<tr><td>≤15.0%</td><td>0402≥0.068μF;0603≥0.47uF;1206≥</td></tr>
<tr><td>16V (C<1.0μF)</td><td>≤10.0%</td><td>≤12.5%</td><td>0402≥0.068μF; 0603≥0.68μF</td></tr>
<tr><td>16V (C≥1.0μF)</td><td>≤12.5%</td><td>≤20%</td><td>0805≥3.3μF;1206≥10μF;1210≥22μ
1812≥47μF</td></tr>
<tr><td>10V</td><td>≤20.0%</td><td>---</td><td></td></tr>
<tr><td>6.3V</td><td>≤30%</td><td>---</td><td>---</td></tr>
</table>
* I.R.: ≥10V, ≥1GΩ or RxC≥50Ω-F whichever is smaller.
6.3V, RxC≥10Ω-F
</td></tr>
</table>