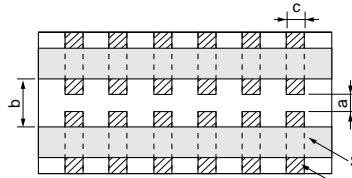
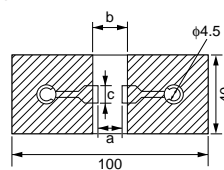
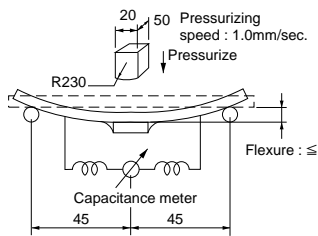


## SPECIFICATIONS AND TEST METHODS

No.	Item	Specification		Test Method																																					
		Temperature Compensating Type	High Dielectric Constant Type																																						
1	Operating Temperature Range	-55 to +125℃	X5R : -55 to + 85℃ X7R : -55 to +125℃ Z5U : +10 to + 85℃ Y5V : -30 to + 85℃																																						
2	Rated Voltage	See the previous pages.		The rated voltage is defined as the maximum voltage which may be applied continuously to the capacitor. When AC voltage is superimposed on DC voltage, $V^{P-P}$ or $V^{0-P}$ , whichever is larger, shall be maintained within the rated voltage range.																																					
3	Appearance	No defects or abnormalities.		Visual inspection.																																					
4	Dimensions	Within the specified dimension.		Using calipers.																																					
5	Dielectric Strength	No defects or abnormalities.		No failure shall be observed when *300% of the rated voltage (C0Δ to U2J and SL) or *250% of the rated voltage (X5R, X7R, Z5U and Y5V) is applied between the terminations for 1 to 5 seconds, provided the charge/discharge current is less than 50mA. *200% for 500V																																					
6	Insulation Resistance (I.R.)	More than 10,000MΩ or 500Ω · F (Whichever is smaller)		The insulation resistance shall be measured with a DC voltage not exceeding the rated voltage at 25℃ and 75%RH max. and within 2 minutes of charging.																																					
7	Capacitance	Within the specified tolerance.		The capacitance/Q/D.F. shall be measured at 25℃ at the frequency and voltage shown in the table																																					
8	Q/Dissipation Factor (D.F.)	30pF min. : $Q \geq 1,000$ 30pF max. : $Q \geq 400+20C$ C : Nominal Capacitance (pF)	<table><tr><th>Char.</th><th>25V min.</th><th>16V</th><th>10V</th><th>6.3V</th></tr><tr><td>X5R</td><td>0.025 max.</td><td>0.035 max.</td><td>0.035 max.</td><td>0.05 max.</td></tr><tr><td>X7R</td><td></td><td></td><td></td><td></td></tr><tr><td>Z5U</td><td>0.025 max.</td><td>—</td><td>—</td><td>—</td></tr><tr><td>Y5V</td><td>0.05 max. (C&lt;1.0μF) 0.09 max. (C≥1.0μF)</td><td>0.07 max. (C&lt;1.0μF) 0.09 max. (C≥1.0μF)</td><td>0.125 max.</td><td>0.125 max.</td></tr></table>	Char.	25V min.	16V	10V	6.3V	X5R	0.025 max.	0.035 max.	0.035 max.	0.05 max.	X7R					Z5U	0.025 max.	—	—	—	Y5V	0.05 max. (C<1.0μF) 0.09 max. (C≥1.0μF)	0.07 max. (C<1.0μF) 0.09 max. (C≥1.0μF)	0.125 max.	0.125 max.	<table><tr><th>Char. Item</th><th>C0Δ to U2J, SL (1000pF and below)</th><th>C0Δ to U2J, SL (more than 1000pF) X5R, X7R, Y5V</th><th>Z5U</th></tr><tr><td>Frequency</td><td>1±0.1MHz</td><td>1±0.1kHz</td><td>1±0.1kHz</td></tr><tr><td>Voltage</td><td>0.5 to 5Vr.m.s.</td><td>1±0.2Vr.m.s.</td><td>0.5±0.05Vr.m.s.</td></tr></table>	Char. Item	C0Δ to U2J, SL (1000pF and below)	C0Δ to U2J, SL (more than 1000pF) X5R, X7R, Y5V	Z5U	Frequency	1±0.1MHz	1±0.1kHz	1±0.1kHz	Voltage	0.5 to 5Vr.m.s.	1±0.2Vr.m.s.	0.5±0.05Vr.m.s.
			Char.	25V min.	16V	10V	6.3V																																		
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Frequency	1±0.1MHz	1±0.1kHz	1±0.1kHz																																						
Voltage	0.5 to 5Vr.m.s.	1±0.2Vr.m.s.	0.5±0.05Vr.m.s.																																						
9	Capacitance Temperature Characteristics	Capacitance Change	Within the specified tolerance. (Table A-1)	<table><tr><th>Char.</th><th>Temp. Range.</th><th>Reference Temp.</th><th>Cap. Change</th></tr><tr><td>X5R</td><td>-55 to + 85℃</td><td rowspan="4">25℃</td><td>Within±15%</td></tr><tr><td>X7R</td><td>-55 to +125℃</td><td>Within +22% -56%</td></tr><tr><td>Z5U</td><td>+10 to + 85℃</td><td></td></tr><tr><td>Y5V</td><td>-30 to + 85℃</td><td>Within +22% -22%</td></tr></table>	Char.	Temp. Range.	Reference Temp.	Cap. Change	X5R	-55 to + 85℃	25℃	Within±15%	X7R	-55 to +125℃	Within +22% -56%	Z5U	+10 to + 85℃		Y5V	-30 to + 85℃	Within +22% -22%																				
		Char.	Temp. Range.		Reference Temp.	Cap. Change																																			
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Z5U	+10 to + 85℃																																								
Y5V	-30 to + 85℃	Within +22% -22%																																							
Temperature Coefficient	Within the specified tolerance. (Table A-1)																																								
Capacitance Drift	Within ±0.2% or ±0.05pF (Whichever is larger) *Not apply to SL/25V																																								
10	Adhesive Strength of Termination	No removal of the terminations or other defects shall occur.		<p>Solder the capacitor to the test jig (glass epoxy board) shown in Fig. 1a using a eutectic solder. Then apply 10N* force in parallel with the test jig for 10±1 sec.</p> <p>The soldering shall be done either with an iron or using the reflow method and shall be conducted with care so that the soldering is uniform and free of defects such as heat shock. *5N (GRM36, GRM39)</p> <table><tr><th>Type</th><th>a</th><th>b</th><th>c</th></tr><tr><td>GRM36</td><td>0.4</td><td>1.5</td><td>0.5</td></tr><tr><td>GRM39</td><td>1.0</td><td>3.0</td><td>1.2</td></tr><tr><td>GRM40</td><td>1.2</td><td>4.0</td><td>1.65</td></tr><tr><td>GRM42-6</td><td>2.2</td><td>5.0</td><td>2.0</td></tr><tr><td>GRM42-2</td><td>2.2</td><td>5.0</td><td>2.9</td></tr><tr><td>GRM43-2</td><td>3.5</td><td>7.0</td><td>3.7</td></tr><tr><td>GRM44-1</td><td>4.5</td><td>8.0</td><td>5.6</td></tr></table> <p>(in mm)</p>	Type	a	b	c	GRM36	0.4	1.5	0.5	GRM39	1.0	3.0	1.2	GRM40	1.2	4.0	1.65	GRM42-6	2.2	5.0	2.0	GRM42-2	2.2	5.0	2.9	GRM43-2	3.5	7.0	3.7	GRM44-1	4.5	8.0	5.6					
		Type	a		b	c																																			
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GRM44-1	4.5	8.0	5.6																																						
 <p>Fig. 1a</p>																																									
11	Vibration Resistance	Appearance	No defects or abnormalities.	Solder the capacitor to the test jig (glass epoxy board) in the same manner and under the same conditions as (10). The capacitor shall be subjected to a simple harmonic motion having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 55Hz. The frequency range, from 10 to 55Hz and return to 10Hz, shall be traversed in approximately 1 minute. This motion shall be applied for a period of 2 hours in each 3 mutually perpendicular directions (total of 6 hours).																																					
		Capacitance	Within the specified tolerance.																																						
	Q/D.F.	30pF min. : $Q \geq 1,000$ 30pF max. : $Q \geq 400+20C$ C : Nominal Capacitance (pF)	<table><tr><th>Char.</th><th>25V min.</th><th>16V</th><th>10V</th><th>6.3V</th></tr><tr><td>X5R</td><td>0.025 max.</td><td>0.035 max.</td><td>0.035 max.</td><td>0.05 max.</td></tr><tr><td>X7R</td><td></td><td></td><td></td><td></td></tr><tr><td>Z5U</td><td>0.025 max.</td><td>—</td><td>—</td><td>—</td></tr><tr><td>Y5V</td><td>0.05 max. (C&lt;1.0μF) 0.09 max. (C≥1.0μF)</td><td>0.07 max. (C&lt;1.0μF) 0.09 max. (C≥1.0μF)</td><td>0.125 max.</td><td>0.125 max.</td></tr></table>	Char.	25V min.	16V	10V	6.3V	X5R	0.025 max.	0.035 max.	0.035 max.	0.05 max.	X7R					Z5U	0.025 max.	—	—	—	Y5V	0.05 max. (C<1.0μF) 0.09 max. (C≥1.0μF)	0.07 max. (C<1.0μF) 0.09 max. (C≥1.0μF)	0.125 max.	0.125 max.													
			Char.	25V min.	16V	10V	6.3V																																		
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No.	Item	Specification		Test Method																																
		Temperature Compensating Type	High Dielectric Constant Type																																	
12	Deflection	No cracking or marking defects shall occur.		<p>Solder the capacitor to the test jig (glass epoxy boards) shown in Fig.2a using a eutectic solder. Then apply a force in the direction shown in Fig.3a. The soldering shall be done either with an iron or using the reflow method and shall be conducted with care so that the soldering is uniform and free of defects such as heat shock.</p> <div><p>Fig. 2a</p><table><tr><th>Type</th><th>a</th><th>b</th><th>c</th></tr><tr><td>GRM36</td><td>0.4</td><td>1.5</td><td>0.5</td></tr><tr><td>GRM39</td><td>1.0</td><td>3.0</td><td>1.2</td></tr><tr><td>GRM40</td><td>1.2</td><td>4.0</td><td>1.65</td></tr><tr><td>GRM42-6</td><td>2.2</td><td>5.0</td><td>2.0</td></tr><tr><td>GRM42-2</td><td>2.2</td><td>5.0</td><td>2.9</td></tr><tr><td>GRM43-2</td><td>3.5</td><td>7.0</td><td>3.7</td></tr><tr><td>GRM44-1</td><td>4.5</td><td>8.0</td><td>5.6</td></tr></table><p>(in mm)</p></div>	Type	a	b	c	GRM36	0.4	1.5	0.5	GRM39	1.0	3.0	1.2	GRM40	1.2	4.0	1.65	GRM42-6	2.2	5.0	2.0	GRM42-2	2.2	5.0	2.9	GRM43-2	3.5	7.0	3.7	GRM44-1	4.5	8.0	5.6
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GRM44-1	4.5	8.0	5.6																																	
<div><p>Fig. 3a</p></div>																																				
13	Solderability of Termination	75% of the terminations is to be soldered evenly and continuously.		Immerse the capacitor in a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight proportion). Preheat at 80 to 120°C for 10 to 30 seconds. After preheating, immerse in eutectic solder solution for 2±0.5 seconds at 230±5°C.																																
14	Resistance to Soldering Heat	The measured and observed characteristics shall satisfy the specifications in the following table.		<p>Preheat the capacitor at 120 to 150°C* for 1 minute. Immerse the capacitor in a eutectic solder solution at 270±5°C for 10±0.5 seconds. Let sit at room temperature for 24±2 hours (temperature compensating type) or 48±4 hours (high dielectric constant type), then measure.</p> <p>• Initial measurement for high dielectric constant type Perform a heat treatment at 150 ±<sub>10</sub><sup>0</sup> °C for one hour and then let sit for 48±4 hours at room temperature. Perform the initial measurement.</p> <p>*Preheating for GRM42-2/43-2/44-1</p> <table><tr><th>Step</th><th>Temperature</th><th>Time</th></tr><tr><td>1</td><td>100°C to 120°C</td><td>1 min.</td></tr><tr><td>2</td><td>170°C to 200°C</td><td>1 min.</td></tr></table>	Step	Temperature	Time	1	100°C to 120°C	1 min.	2	170°C to 200°C	1 min.																							
	Step	Temperature	Time																																	
	1	100°C to 120°C	1 min.																																	
	2	170°C to 200°C	1 min.																																	
	Appearance	No marking defects																																		
	Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	X5R, X7R ······ Within ±7.5% Z5U, Y5V ······ Within ±20%																																	
Q/D.F.	30pF and over : Q≥1,000 30pF and below : Q≥400+20C C : Nominal Capacitance (pF)	<table><tr><td>Char.</td><td>25V min.</td><td>16V</td><td>10V</td><td>6.3V</td></tr><tr><td>X5R</td><td>0.025 max.</td><td>0.035 max.</td><td>0.035 max.</td><td>0.05 max.</td></tr><tr><td>X7R</td><td>0.025 max.</td><td>—</td><td>—</td><td>—</td></tr><tr><td>Z5U</td><td>0.05 max. (C&lt;1.0μF)</td><td>0.07 max. (C&lt;1.0μF)</td><td>0.125 max.</td><td>0.125 max.</td></tr><tr><td>Y5V</td><td>0.09 max. (C≥1.0μF)</td><td>0.09 max. (C≥1.0μF)</td><td></td><td></td></tr></table>	Char.	25V min.	16V	10V	6.3V	X5R	0.025 max.	0.035 max.	0.035 max.	0.05 max.	X7R	0.025 max.	—	—	—	Z5U	0.05 max. (C<1.0μF)	0.07 max. (C<1.0μF)	0.125 max.	0.125 max.	Y5V	0.09 max. (C≥1.0μF)	0.09 max. (C≥1.0μF)											
Char.	25V min.	16V	10V	6.3V																																
X5R	0.025 max.	0.035 max.	0.035 max.	0.05 max.																																
X7R	0.025 max.	—	—	—																																
Z5U	0.05 max. (C<1.0μF)	0.07 max. (C<1.0μF)	0.125 max.	0.125 max.																																
Y5V	0.09 max. (C≥1.0μF)	0.09 max. (C≥1.0μF)																																		
I.R.	More than 10,000MΩ or 500Ω · F (Whichever is smaller)																																			
Dielectric Strength	No failure																																			
15	Temperature Cycle	The measured and observed characteristics shall satisfy the specifications in the following table.		<p>Fix the capacitor to the supporting jig in the same manner and under the same conditions as (10). Perform the five cycles according to the four heat treatments listed in the following table. Let sit for 24±2 hours (temperature compensating type) or 48±4 hours (high dielectric constant type) at room temperature, then measure.</p> <table><tr><th>Step</th><th>1</th><th>2</th><th>3</th><th>4</th></tr><tr><td>Temp. (°C)</td><td>Min. Operating Temp. ±<sub>3</sub><sup>0</sup></td><td>Room Temp.</td><td>Max. Operating Temp. ±<sub>3</sub><sup>0</sup></td><td>Room Temp.</td></tr><tr><td>Time (min.)</td><td>30±3</td><td>2 to 3</td><td>30±3</td><td>2 to 3</td></tr></table> <p>• Initial measurement for high dielectric constant type Perform a heat treatment at 150 ±<sub>10</sub><sup>0</sup> °C for one hour and then let sit for 48±4 hours at room temperature. Perform the initial measurement.</p>	Step	1	2	3	4	Temp. (°C)	Min. Operating Temp. ± <sub>3</sub> <sup>0</sup>	Room Temp.	Max. Operating Temp. ± <sub>3</sub> <sup>0</sup>	Room Temp.	Time (min.)	30±3	2 to 3	30±3	2 to 3																	
	Step	1	2		3	4																														
	Temp. (°C)	Min. Operating Temp. ± <sub>3</sub> <sup>0</sup>	Room Temp.		Max. Operating Temp. ± <sub>3</sub> <sup>0</sup>	Room Temp.																														
	Time (min.)	30±3	2 to 3		30±3	2 to 3																														
	Appearance	No marking defects																																		
	Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	X5R, X7R ······ Within ±7.5% Z5U, Y5V ······ Within ±20%																																	
Q/D.F.	30pF and over : Q≥1,000 30pF and below : Q≥400+20C C : Nominal Capacitance (pF)	<table><tr><td>Char.</td><td>25V min.</td><td>16V</td><td>10V</td><td>6.3V</td></tr><tr><td>X5R</td><td>0.025 max.</td><td>0.035 max.</td><td>0.035 max.</td><td>0.05 max.</td></tr><tr><td>X7R</td><td>0.025 max.</td><td>—</td><td>—</td><td>—</td></tr><tr><td>Z5U</td><td>0.025 max.</td><td>—</td><td>—</td><td>—</td></tr><tr><td>Y5V</td><td>0.05 max. (C&lt;1.0μF)</td><td>0.07 max. (C&lt;1.0μF)</td><td>0.125 max.</td><td>0.125 max.</td></tr><tr><td></td><td>0.09 max. (C≥1.0μF)</td><td>0.09 max. (C≥1.0μF)</td><td></td><td></td></tr></table>	Char.	25V min.	16V	10V	6.3V	X5R	0.025 max.	0.035 max.	0.035 max.	0.05 max.	X7R	0.025 max.	—	—	—	Z5U	0.025 max.	—	—	—	Y5V	0.05 max. (C<1.0μF)	0.07 max. (C<1.0μF)	0.125 max.	0.125 max.		0.09 max. (C≥1.0μF)	0.09 max. (C≥1.0μF)						
Char.	25V min.	16V	10V	6.3V																																
X5R	0.025 max.	0.035 max.	0.035 max.	0.05 max.																																
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	0.09 max. (C≥1.0μF)	0.09 max. (C≥1.0μF)																																		
I.R.	More than 10,000MΩ or 500Ω · F (Whichever is smaller)																																			
Dielectric Strength	No failure																																			
16	Humidity, Steady State	The measured and observed characteristics shall satisfy the specifications in the following table.		<p>Sit the capacitor at 40±2°C and 90 to 95% humidity for 500±12 hours.</p> <p>Remove and let sit for 24±2 hours (temperature compensating type) or 48±4 hours (high dielectric constant type) at room temperature, then measure.</p>																																
	Appearance	No marking defects																																		
	Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	X5R, X7R ······ Within ±12.5% Z5U, Y5V ······ Within ±30%																																	
	Q/D.F.	30pF and over. : Q≥350 10pF and over, 30pF and below : Q≥275+ <sup>5</sup> / <sub>2</sub> · C 10pF and below : Q≥200+10C C : Nominal Capacitance (pF)	<table><tr><td>Char.</td><td>25V min.</td><td>16V</td><td>10V</td><td>6.3V</td></tr><tr><td>X5R</td><td>0.05 max.</td><td>0.05 max.</td><td>0.05 max.</td><td>0.075 max.</td></tr><tr><td>X7R</td><td>0.05 max.</td><td>—</td><td>—</td><td>—</td></tr><tr><td>Z5U</td><td>0.05 max.</td><td>—</td><td>—</td><td>—</td></tr><tr><td>Y5V</td><td>0.075 max. (C&lt;1.0μF)</td><td>0.1 max. (C&lt;1.0μF)</td><td>0.15 max.</td><td>0.15 max.</td></tr><tr><td></td><td>0.125 max. (C≥1.0μF)</td><td>0.125 max. (C≥1.0μF)</td><td></td><td></td></tr></table>		Char.	25V min.	16V	10V	6.3V	X5R	0.05 max.	0.05 max.	0.05 max.	0.075 max.	X7R	0.05 max.	—	—	—	Z5U	0.05 max.	—	—	—	Y5V	0.075 max. (C<1.0μF)	0.1 max. (C<1.0μF)	0.15 max.	0.15 max.		0.125 max. (C≥1.0μF)	0.125 max. (C≥1.0μF)				
	Char.	25V min.	16V		10V	6.3V																														
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No.	Item	Specification		Test Method																									
		Temperature Compensating Type	High Dielectric Constant Type																										
17	Humidity Load	The measured and observed characteristics shall satisfy the specifications in the following table.		Apply the rated voltage at 40±2℃ and 90 to 95% humidity for 500±12 hours. Remove and let sit for 24±2 hours (temperature compensating type) or 48±4 hours (high dielectric constant type) at room temperature, then measure. The charge/discharge current is less than 50mA..  •Initial measurement for Y5V/10V max. Apply the rated DC voltage for 1 hour at 40±20℃. Remove and let sit for 48±4 hours at room temperature. Perform initial measurement.																									
	Appearance	No marking defects																											
	Capacitance Change	Within ±7.5% or ±0.75pF (Whichever is larger)	X5R, X7R ····Within ±12.5% Z5U ······Within ±30% Y5V ······ $\begin{cases} \text{Within } +30\% \text{ (10V max.)} \\ \text{Within } \pm30\% \text{ (others)} \end{cases}$																										
	Q/D.F.	30pF and over. : Q≥200 30pF and below : Q≥100+ $\frac{10}{3}$ C C : Nominal Capacitance (pF)	<table><tr><th>Char.</th><th>25V min.</th><th>16V</th><th>10V</th><th>6.3V</th></tr><tr><td>X5R</td><td>0.05 max.</td><td>0.05 max.</td><td>0.05 max.</td><td>0.075 max.</td></tr><tr><td>X7R</td><td>0.05 max.</td><td>—</td><td>—</td><td>—</td></tr><tr><td>Z5U</td><td>0.075 max. (C&lt;1.0μF)</td><td>0.1 max. (C&lt;1.0μF)</td><td>0.15 max.</td><td>0.15 max.</td></tr><tr><td>Y5V</td><td>0.125 max. (C≥1.0μF)</td><td>0.125 max. (C≥1.0μF)</td><td></td><td></td></tr></table>		Char.	25V min.	16V	10V	6.3V	X5R	0.05 max.	0.05 max.	0.05 max.	0.075 max.	X7R	0.05 max.	—	—	—	Z5U	0.075 max. (C<1.0μF)	0.1 max. (C<1.0μF)	0.15 max.	0.15 max.	Y5V	0.125 max. (C≥1.0μF)	0.125 max. (C≥1.0μF)		
	Char.	25V min.	16V		10V	6.3V																							
	X5R	0.05 max.	0.05 max.		0.05 max.	0.075 max.																							
	X7R	0.05 max.	—		—	—																							
Z5U	0.075 max. (C<1.0μF)	0.1 max. (C<1.0μF)	0.15 max.	0.15 max.																									
Y5V	0.125 max. (C≥1.0μF)	0.125 max. (C≥1.0μF)																											
I.R.	More than 500MΩ or 25Ω · F (Whichever is smaller)																												
Dielectric Strength	No failure																												
18	High Temperature Load	The measured and observed characteristics shall satisfy the specifications in the following table.		Apply *200% of the rated voltage for 1,000±12 hours at the maximum operating temperature ±3℃. Let sit for 24±2 hours (temperature compensating type) or 48±4 hours (high dielectric constant type) at room temperature, then measure. The charge/discharge current is less than 50mA.  •Initial measurement for high dielectric constant type. Apply *200% of the rated DC voltage for one hour at the maximum operating temperature ±3℃. Remove and let sit for 48±4 hours at room temperature. Perform initial measurement.  *150% for 500V																									
	Appearance	No marking defects																											
	Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)	X5R, X7R ·Within ±12.5% Z5U · ·Within ±30% Y5V · $\begin{cases} \text{Within } \pm30\% \text{ (others)} \\ \text{Within } +30\% \text{ (10V max. and cap.} \geq 1.0\mu F) \end{cases}$																										
	Q/D.F.	30pF and over. : Q≥350 10pF and over, 30pF and below : Q≥275+ $\frac{5}{2}$ C 10pF and below : Q≥200+10C C : Nominal Capacitance (pF)	<table><tr><th>Char.</th><th>25V min.</th><th>16V</th><th>10V</th><th>6.3V</th></tr><tr><td>X5R</td><td>0.04 max.</td><td>0.05 max.</td><td>0.05 max.</td><td>0.075 max.</td></tr><tr><td>X7R</td><td>0.04 max.</td><td>—</td><td>—</td><td>—</td></tr><tr><td>Z5U</td><td>0.075 max. (C&lt;1.0μF)</td><td>0.1 max. (C&lt;1.0μF)</td><td>0.15 max.</td><td>0.15 max.</td></tr><tr><td>Y5V</td><td>0.125 max. (C≥1.0μF)</td><td>0.125 max. (C≥1.0μF)</td><td></td><td></td></tr></table>		Char.	25V min.	16V	10V	6.3V	X5R	0.04 max.	0.05 max.	0.05 max.	0.075 max.	X7R	0.04 max.	—	—	—	Z5U	0.075 max. (C<1.0μF)	0.1 max. (C<1.0μF)	0.15 max.	0.15 max.	Y5V	0.125 max. (C≥1.0μF)	0.125 max. (C≥1.0μF)		
	Char.	25V min.	16V		10V	6.3V																							
	X5R	0.04 max.	0.05 max.		0.05 max.	0.075 max.																							
	X7R	0.04 max.	—		—	—																							
Z5U	0.075 max. (C<1.0μF)	0.1 max. (C<1.0μF)	0.15 max.	0.15 max.																									
Y5V	0.125 max. (C≥1.0μF)	0.125 max. (C≥1.0μF)																											
I.R.	More than 1,000MΩ or 50Ω · F (Whichever is smaller)																												
Dielectric Strength	No failure																												
19	Notice	When mounting capacitor of 500V rated voltage, perform the epoxy resin coating (min. 1.0mm thickness)																											

Table A-1

Char.	Nominal Values (ppm/℃) Note 1	Capacitance Change from 25℃ (%)					
		-55		-30		-10	
		Max.	Min.	Max.	Min.	Max.	Min.
C0G	0± 30	0.58	-0.24	0.40	-0.17	0.25	-0.11
C0H	0± 60	0.87	-0.48	0.59	-0.33	0.38	-0.21
P2H	-150± 60	2.33	0.72	1.61	0.50	1.02	0.32
R2H	-220± 60	3.02	1.28	2.08	0.88	1.32	0.56
S2H	-330± 60	4.09	2.16	2.81	1.49	1.79	0.95
T2H	-470± 60	5.46	3.28	3.75	2.26	2.39	1.44
U2J	-750±120	8.78	5.04	6.04	3.47	3.84	2.21
SL	-350 to 1,000	—	—	—	—	—	—

Note 1 : Nominal values denote the temperature coefficient within a range of 25 to 125℃ (for C0Δ)/85℃ (for other TC).