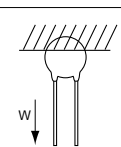
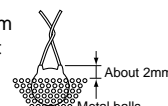


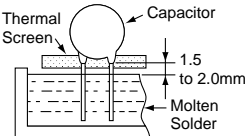
No.	Item	Specifications	Test Method										
1	Operating Temperature Range	-25 to +125°C											
2	Appearance and Dimensions	No marked defect on appearance form and dimensions are within specified range.	The capacitor should be visually inspected for evidence of defect. Dimensions should be measured with slide calipers.										
3	Marking	To be easily legible	The capacitor should be visually inspected.										
4	Dielectric Strength	Between Lead Wires	No failure The capacitor should not be damaged when DC voltage of 200% of the rated voltage (DC1 to 3.15kV) or DC voltage of 250% of the rated voltage (DC250V, DC500V) is applied between the lead wires for 1 to 5 sec. (Charge/Discharge current ≤50mA)										
		Body Insulation	No failure The capacitor is placed in the container with metal balls of diameter 1mm so that each lead wire, short circuited, is kept about 2mm off the metal balls as shown in the figure at right, and AC1250V(r.m.s.) <50/60Hz> is applied for 1 to 5 sec. between capacitor lead wires and metal balls. (Charge/Discharge current ≤50mA)										
5	Insulation Resistance (I.R.)	Between Lead Wires Char. R [DC1 to 3.15kV], Char. C : 10000MΩ min. Char. R [DC250V]: 1000MΩ min.	The insulation resistance should be measured with DC500±50V (Char. R [DC 250V]: DC100±15V) within 60±5 sec. of charging.										
6	Capacitance	Within specified tolerance	The capacitance should be measured at 20°C with 1±0.2kHz and AC5V(r.m.s.) max.										
7	Dissipation Factor (D.F.)	Char. R [DC250V]: 0.4% max. Char. R [DC1 to 3.15kV]: 0.2% max. Char. C: 0.3% max.	The dissipation factor should be measured at 20°C with 1±0.2kHz and AC5V(r.m.s.) max.										
8	Temperature Characteristics	<table border="1"> <thead> <tr> <th rowspan="2">T. C.</th> <th colspan="2">Temp. Char.</th> </tr> </thead> <tbody> <tr> <td>-25 to +85°C</td> <td>+85 to +125°C</td> </tr> <tr> <td>R</td> <td>Within ±15%</td> <td rowspan="2">Within +15/-30%</td> </tr> <tr> <td>C</td> <td>Within ±20%</td> </tr> </tbody> </table>	T. C.	Temp. Char.		-25 to +85°C	+85 to +125°C	R	Within ±15%	Within +15/-30%	C	Within ±20%	The capacitance measurement should be made at each step specified in Table.
		T. C.		Temp. Char.									
-25 to +85°C	+85 to +125°C												
R	Within ±15%	Within +15/-30%											
C	Within ±20%												
<p>Pre-treatment: Capacitor should be stored at 125±3°C for 1 hr., then placed at room condition*1 for 24±2 hrs. before measurements.</p> <table border="1"> <thead> <tr> <th>Step</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <td>Temp. (°C)</td> <td>20±2</td> <td>-25±3</td> <td>20±2</td> <td>125±2</td> <td>20±2</td> </tr> </tbody> </table>	Step	1	2	3	4	5	Temp. (°C)	20±2	-25±3	20±2	125±2	20±2	
Step	1	2	3	4	5								
Temp. (°C)	20±2	-25±3	20±2	125±2	20±2								
9	Strength of Lead	Pull	Lead wire should not be cut off. Capacitor should not be broken.										
		Bending	Each lead wire should be subjected to 5N (2.5N for lead diameter 0.5mm) of weight and bent 90° at the point of egress, in one direction, then returned to its original position and bent 90° in the opposite direction at the rate of one bend in 2 to 3 sec.										
10	Vibration Resistance	Appearance	No marked defect										
		Capacitance	Within specified tolerance										
		D.F.	Char. R [DC250V]: 0.4% max. Char. R [DC1 to 3.15kV]: 0.2% max. Char. C: 0.3% max.										
11	Solderability of Leads	Lead wire should be soldered with uniform coating on the axial direction over 3/4 of the circumferential direction.	The lead wire of a capacitor should be dipped into a ethanol solution of 25wt% rosin and then into molten solder for 2±0.5 sec. In both cases the depth of dipping is up to about 1.5 to 2mm from the root of lead wires. Temp. of solder: Lead Free Solder (Sn-3Ag-0.5Cu) 245±5°C H63 Eutectic Solder 235±5°C										




*1 "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmospheric pressure: 86 to 106kPa

Continued on the following page.

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No.	Item	Specifications	Test Method															
12	Appearance	No marked defect	<p>The lead wire should be immersed into the melted solder of $350\pm 10^{\circ}\text{C}$ up to about 1.5 to 2mm from the main body for 3.5 ± 0.5 sec.</p> <p>Pre-treatment: Capacitor should be stored at $125\pm 3^{\circ}\text{C}$ for 1 hr., then placed at room condition*1 for 24 ± 2 hrs. before initial measurements.</p> <p>Post-treatment: Capacitor should be stored for 24 ± 2 hrs. at room condition*1.</p> <p>Measurement order: Dielectric strength -> Pre-treatment -> Capacitance -> Soldering effect test -> Post-treatment -> Capacitance · Dielectric strength (Char. R [DC250V])</p>															
	Capacitance Change	Within $\pm 10\%$																
	Dielectric Strength (Between Lead Wires)	Per item 4.																
13	Appearance	No marked defect	<p>First the capacitor should be stored at $120+0/-5^{\circ}\text{C}$ for $60+0/-5$ sec.</p> <p>Then, as in figure, the lead wires should be immersed in solder of $260+0/-5^{\circ}\text{C}$ up to 1.5 to 2.0mm from the root of terminal for $7.5+0/-1$ sec.</p>  <p>Pre-treatment: Capacitor should be stored at $125\pm 3^{\circ}\text{C}$ for 1 hr., then placed at room condition*1 for 24 ± 2 hrs. before initial measurements.</p> <p>Post-treatment: Capacitor should be stored for 24 ± 2 hrs. at room condition*1.</p> <p>Measurement order: Dielectric strength -> Pre-treatment -> Capacitance -> Soldering effect test -> Post-treatment -> Capacitance · Dielectric strength (Char. R [DC250V])</p>															
	Capacitance Change	Within $\pm 10\%$																
	Dielectric Strength (Between Lead Wires)	Per item 4.																
14	Appearance	No marked defect	<p>The capacitor should be subjected to 5 temperature cycles.</p> <p><Temperature Cycle></p> <table border="1" data-bbox="1037 1052 1380 1176"> <thead> <tr> <th>Step</th> <th>Temperature ($^{\circ}\text{C}$)</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25 ± 3</td> <td>30</td> </tr> <tr> <td>2</td> <td>Room Temp.</td> <td>3</td> </tr> <tr> <td>3</td> <td>125 ± 3</td> <td>30</td> </tr> <tr> <td>4</td> <td>Room Temp.</td> <td>3</td> </tr> </tbody> </table> <p>Cycle time: 5 cycle</p> <p>Pre-treatment: Capacitor should be stored at $125\pm 3^{\circ}\text{C}$ for 1 hr., then placed at room condition*1 for 24 ± 2 hrs. before initial measurements.</p> <p>Post-treatment: Capacitor should be stored for 24 ± 2 hrs. at room condition*1.</p> <p>Measurement order: I.R. · Dielectric strength -> Pre-treatment -> Capacitance · D.F. -> Temperature cycle test -> Post-treatment -> Capacitance · D.F. · I.R. · Dielectric strength (Char. R [DC250V])</p>	Step	Temperature ($^{\circ}\text{C}$)	Time (min)	1	-25 ± 3	30	2	Room Temp.	3	3	125 ± 3	30	4	Room Temp.	3
	Step	Temperature ($^{\circ}\text{C}$)		Time (min)														
	1	-25 ± 3		30														
	2	Room Temp.		3														
	3	125 ± 3		30														
4	Room Temp.	3																
Capacitance Change	Within $\pm 10\%$																	
D.F.	0.4% max.																	
I.R.	$1000\text{M}\Omega$ min.																	
Dielectric Strength (Between Lead Wires)	Per item 4.																	
15	Appearance	No marked defect	<p>Set the capacitor for $500+24/-0$ hrs. at $40\pm 2^{\circ}\text{C}$ in 90 to 95% relative humidity.</p> <p>Pre-treatment: Capacitor should be stored at $125\pm 3^{\circ}\text{C}$ for 1 hr., then placed at room condition*1 for 24 ± 2 hrs. before initial measurements.</p> <p>Post-treatment: Capacitor should be stored for 1 to 2 hrs. at room condition*1.</p> <p>Measurement order: I.R. -> Pre-treatment -> Capacitance · D.F. -> Humidity test -> Post-treatment -> Capacitance · D.F. · I.R. (Char. R [DC250V])</p>															
	Capacitance Change	Within $\pm 10\%$																
	D.F.	0.4% max.																
	I.R.	$1000\text{M}\Omega$ min.																

*1 "room condition" Temperature: 15 to 35°C , Relative humidity: 45 to 75%, Atmospheric pressure: 86 to 106kPa

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No.	Item	Specifications	Test Method
16	Humidity Loading	Appearance	No marked defect
		Capacitance Change	Within $\pm 10\%$
		D.F.	0.6% max.
		I.R.	1000M Ω min.
<p>Apply the rated voltage for 500+24/-0 hrs. at 40$\pm 2^{\circ}$C in 90 to 95% relative humidity. (Charge/Discharge current ≤ 50mA)</p> <p>Pre-treatment: Capacitor should be stored at 125$\pm 3^{\circ}$C for 1 hr., then placed at room condition*1 for 24± 2 hrs. before initial measurements.</p> <p>Post-treatment: Capacitor should be stored for 1 to 2 hrs. at room condition*1. (Char. R [DC1 to 3.15kV], Char. C)</p> <p>Post-treatment: Capacitor should be stored at 125$\pm 3^{\circ}$C for 1 hr., then placed at room condition*1 for 24± 2 hrs. (Char. R [DC250V])</p> <p>Measurement order: I.R. -> Pre-treatment -> Capacitance \cdot D.F. -> Humidity loading test -> I.R.*2 -> Post-treatment -> Capacitance \cdot D.F. (Char. R [DC250V])</p>			
17	Life	Appearance	No marked defect
		Capacitance Change	Within $\pm 10\%$
		D.F.	0.4% max.
		I.R.	Char. R [DC1 to 3.15kV], Char. C : 2000M Ω min. Char. R [DC250V]: 1000M Ω min.
<p>Apply a DC voltage of 200% of the rated voltage (DC250V, DC500V) or DC voltage of 150% of the rated voltage (DC1 to 3.15kV) for 1000 +48/-0 hrs. at 125$\pm 2^{\circ}$C with a relative humidity of 50% max. (Charge/Discharge current ≤ 50mA)</p> <p>Pre-treatment: Capacitor should be stored at 125$\pm 3^{\circ}$C for 1 hr., then placed at room condition*1 for 24± 2 hrs. before initial measurements.</p> <p>Post-treatment: Capacitor should be stored at 125$\pm 3^{\circ}$C for 1 hr., then placed at room condition*1 for 24± 2 hrs.</p> <p>Measurement order: I.R. -> Pre-treatment -> Capacitance \cdot D.F. -> Life test -> I.R.*3 -> Post-treatment -> Capacitance \cdot D.F. (Char. R [DC250V])</p>			

*1 "room condition" Temperature: 15 to 35 $^{\circ}$ C, Relative humidity: 45 to 75%, Atmospheric pressure: 86 to 106kPa

*2 The measurement of I.R. will be held in 1 to 2 hrs. after Humidity loading test.

*3 The measurement of I.R. will be held in 12 to 24 hrs. after Life test.