No.	Ite	em	Specifications	Test Method		
1	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.		
2	Marking		To be easily legible	The capacitor should be visually inspected.		
3	Capacitance		Within specified tolerance			
4	Dissipation Factor (D.F.) Q		$\begin{tabular}{ c c c c c } \hline Char. & Specifications \\ \hline B, E & D.F. \le 2.5\% \\ \hline F & D.F. \le 5.0\% \\ \hline SL & Q \ge 400 + 20C^{*1}(C < 30 pF) \\ \hline Q \ge 1000 & (C \ge 30 pF) \\ \hline \end{tabular}$	The capacitance, dissipation factor and Q should be measured at 20°C with 1±0.1kHz (char. SL: 1±0.1MHz) and AC5V(r.m.s.) max.		
5	Insulation Resistance (I.R.)		10000MΩ min.	The insulation resistance should be measured with DC500 \pm 50V within 60 \pm 5 sec. of charging. The voltage should be applied to the capacitor through a resistor of 1M Ω .		
6	Dielectric Strength	Between Lead Wires	No failure	The capacitor should not be damaged when test voltages of Table 1 are applied between the lead wires for 60 sec. <table 1=""> Type Test Voltage KY In case of lead spacing F=5mm AC2000V(r.m.s.) KH AC2600V(r.m.s.) KX AC4000V(r.m.s.)</table>		
		Body Insulation	No failure	First, the terminals of the capacitor should be connected together. Then, as shown in figure at right, a metal foil should be closely wrapped around the body of the capacitor to the distance of about 3 to 4mm from each terminal. Then, the capacitor should be inserted into a container filled with metal balls of about 1mm diameter. Finally, AC voltage of Table 2 is applied for 60 sec. between the capacitor lead wires and metal balls. Table 2> Type Test Voltage KY AC2600V(r.m.s.) KH AC2600V(r.m.s.) KX AC4000V(r.m.s.)		
7	Temperature Characteristics		Char. Capacitance Change B Within ±10% E Within ±25% F Within ±30% (Temp. range: -25 to +85°C) Char. Temperature Coefficient SL +350 to -1000ppm/°C (Temp. range: +20 to +85°C)	The capacitance measurement should be made at each step specified in Table 3. $\begin{array}{r llllllllllllllllllllllllllllllllllll$		
8	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 molten solder for 2±0.5 sec. The depth of immersion is up to about 1.5 to 2.0mm 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		

Operating Temperature Range: -25 to +125°C (-25 to +85°C in case of the standard of UL)

*1 "C" expresses nominal capacitance value (pF).

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No.	Item		Specifications	Test Method			
9		Appearance	No marked defect	As shown in figure, the lead wires			
	Soldering Effect (Non-Preheat)	Capacitance Change	Within ±10%	should be immersed in solder of 350±10°C or 260±5°C up to 1.5 to 2 0mm from the root of terminal			
		I.R.	1000MΩ min.	for 3.5 ± 0.5 sec. (10 \pm 1 sec. for			
		Dielectric Strength	Per Item 6	260±5°C). Pre-treatment: Capacitor should be stored at 85±2°C for 1 hr., then placed at room condition* ² for 24±2 hrs. before initial measurements. Post-treatment: Capacitor should be stored for 1 to 2 hrs. at room condition* ² .			
	Soldering Effect (On-Preheat)	Appearance	No marked defect	First the capacitor should be			
		Capacitance Change	Within ±10%	stored at 120+0/-5°C for 60+0/-5 sec. Then, as in figure, the lead wires			
		I.R.	1000MΩ min.	should be immersed in solder of			
10		Dielectric Strength	Per Item 6	 Solder Solder Solder From the root of terminal for 7.5+0/-1 sec. Pre-treatment: Capacitor should be stored at 85±2°C for 1 hr., then placed at room condition*2 for 24±2 hrs. before initial measurements. Post-treatment: Capacitor should be stored for 1 to 2 hrs. at room condition*2. 			
		Appearance	No marked defect				
11		Capacitance	Within the specified tolerance	The capacitor should be firmly soldered to the supporting lead wire and vibrated at a frequency range of 10 to 55Hz, 1.5mm in total amplitude, with about a 1 minute rate of vibration change from 10Hz to 55Hz and back to 10Hz. Apply for a total of 6 hrs., 2 hrs. each in 3 mutually perpendicular directions.			
	Vibration Resistance	D.F. Q	$\begin{tabular}{ c c c c c } \hline Char. & Specifications \\ \hline B, E & D.F. \le 2.5\% \\ \hline F & D.F. \le 5.0\% \\ \hline SL & Q \ge 400 + 20C^{*1}(C < 30pF) \\ Q \ge 1000 & (C \ge 30pF) \\ \hline \end{tabular}$				
		Appearance	No marked defect				
12	Humidity (Under Steady State)	Capacitance Change	Char.Capacitance ChangeBWithin ±10%E, FWithin ±15%SLWithin ± 5%	Set the capacitor for 500±12 hrs. at 40±2°C in 90 to 95% relative humidity. Post-treatment: Capacitor should be stored for 1 to 2 hrs. at room condition* ² .			
		D.F. Q	$\begin{tabular}{ c c c c c } \hline Char. & Specifications \\ \hline B, E & D.F. \leq 5.0\% \\ \hline F & D.F. \leq 7.5\% \\ \hline SL & Q \geq 275 + 5/2C^{*1} (C < 30 pF) \\ Q \geq 350 & (C \geq 30 pF) \\ \hline \end{tabular}$				
		I.R.	3000MΩ min.				
		Dielectric Strength	Per Item 6				
	Humidity Loading	Appearance	No marked defect				
13		Capacitance Change	Char. Capacitance Change B Within ±10% E, F Within ±15% SL Within ± 5%				
		D.F. Q	$\begin{tabular}{ c c c c c } \hline Char. & Specifications \\ \hline B, E & D.F. \leq 5.0\% \\ \hline F & D.F. \leq 7.5\% \\ \hline SL & Q \geq 275 + 5/2C^{*1}(C < 30 pF) \\ Q \geq 350 & (C \geq 30 pF) \\ \hline \end{tabular}$	Apply the rated voltage for 500±12 hrs. at 40±2°C in 90 to 95% relative humidity. Post-treatment: Capacitor should be stored for 1 to 2 hrs. at room condition* ² .			
		I.R.	3000MΩ min.				
		Dielectric Strength	Per Item 6				

*1 "C" expresses nominal capacitance value (pF).

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



No	lte	m	Specifications	Test Method				
		Appearance	No marked defect	Impulse Voltage				
14		Capacitance Change	Within ±20%	Each individual capacitor should be subjected to a 5kV (Type KX: 8kV) impulses for three times. Then the capacitors are applied to life test				
		I.R.	3000MΩ min.	100 (%)				
	Life	Dielectric Strength	Per Item 6	Front time $(T_1) = 1.2\mu s = 1.67T$ Time to half-value $(T_2) = 50\mu s$ 30 1 T_1 T_2 Apply a voltage of Table 4 for 1000 hrs. at 125+2/-0°C, and relative humidity of 50% max.				
				<table 1=""></table>				
				Applied Voltage AC425V(r.m.s.), except that once each hour the voltage is increased to AC1000V(r.m.s.) for 0.1 sec.				
				Post-treatment: Capacitor should be stored for 1 to 2 hrs. at room condition* ² .				
			The capacitor flame discontinues as follows.	The capacitor should be subjected to applied flame for 15 sec. and then removed for 15 sec. until 5 cycles are completed.				
				(A) Conscience				
15	Flame Test		Cycle Time (sec.)	Flame				
			1 to 4 30 max.					
			00 max.					
				Gas Burner: Inside Dia. 9.5 (in mm)				
16	Robustness of Terminations	Tensile	Lead wire should not be cut off. Capacitor should	As shown in the figure at right, fix the body of the capacitor and apply a tensile weight gradually to each lead wire in the radial direction of the capacitor up to 10N and keep it for 10±1 sec.				
		Bending	not be broken.	Each lead wire should be subjected to 5N weight and then a 90° bend, at the point of egress, in one direction, return to original position, and then apply a 90° bend in the opposite direction at the rate of one bend in 2 to 3 sec.				
17	Active Flammability		The cheese-cloth should not be on fire.	The capacitor should be individually wrapped in at least one but not more than two complete layers of cheesecloth. The capacitor should be subjected to 20 discharges. The interval between successive discharges should be 5 sec. The UAC should be maintained for 2 min. after the last discharge.				
				$\begin{array}{c} S_1 \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $				
				$ \begin{array}{cccc} C_{1,2} & : 1 \mu F \pm 10\% & C_3 & : 0.033 \mu F \pm 5\% \ 10 kV \\ L_{1 \ to \ 4} & : 1.5 m H \pm 20\% \ 16 A \ Rod \ core \ choke \\ C_t & : 3 \mu F \pm 5\% \ 10 kV & R & : 100 \ \Omega \pm 2\% \\ C_x & : \ Capacitor \ under \ test & UAC & : \ UR \pm 5\% \\ F & : \ Fuse, \ Rated \ 10 A & UR & : \ Rated \ Voltage \\ & Ut & : \ Voltage \ applied \ to \ Ct \\ \end{array} $				
				5kV time				

Continued from the preceding page.

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



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No.	Ite	em	Specifications		Test Method			
18	Passive Flammability		The burning time should not exceed 30 sec. The tissue paper should not ignite.	TI po or 30	The capacitor under test should be held in the flame in the position which best promotes burning. Each specimen should only be exposed once to the flame. Time of exposure to flame: 30 sec. Length of flame : 12±1mm Gas burner : Length 35mm min. Inside Dia. 0.5±0.1mm Outside Dia. 0.9mm max. Gas : Butane gas Purity 95% min.			
19		Appearance	No marked defect	TI	The capacitor should be subjected to 5 temperature cycles,			
	Temperature and Immersion Cycle	Capacitance Change	Char. Capacitance Change B Within ±10% E, F Within ±20% SL Within ± 5% Char. Specifications B E D E ≤5.0%	th	then consecutively to 2 immersion cycles.			Time (min) 30 3 30 30 30 30
		D.F. Q	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Cycle time: 5 cycle			
		I.R.	3000MΩ min.		Step	Temperature (°C)	Time (min)	Immersion Water
		Dielectric Strength	Per Item 6		1	65+5/-0	15	Clean water
					2	0±3	15	Salt water
				P	Cycle time: 2 cycle Pre-treatment: Capacitor should be stored at 85±2°C for 1 hr., then placed at room condition* ² for 24±2 hrs. Post-treatment: Capacitor should be stored for 24±2 hrs. at room condition* ² .			

*1 "C" expresses nominal capacitance value (pF).
 *2 "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmospheric pressure: 86 to 106kPa



