Film Capacitor General Specifications

Specification	Procedure	Requirements	Standard
Capacitance & tolerance	1kHz at 25°C using the bridge method	Capacitance shall be within the stated tolerance range	IEC 60284
Dissipation factor	1kHz at 25°C using the bridge method	DF= 1/Q Q=quality factor	IEC 60284
Insulation resistance	50,63,100 or 500Vdc applied between the terminals for 1 minute	I.R. will meet stated requirement	IEC 60284
Self inductance	Measured at the self resonant frequency of the capacitor	1nH per mm of body length and lead length typically	IEC 60284
Lead pull	A load of 10N shall gradually be applied to the terminal in the axial direction and held for 10 sec.	No visible damage after test	IEC 68-2-21
Solderability	Solder bath temperature 260°C Immersion for 3~5 seconds	95% of the lead wire surface shall be covered with new solder	IEC 68-2-20 Ta
Resistance to soldering heat	Solder bath temperature 260°C Immersion for 10 seconds	No visible damage	IEC 68-2-20 Tb
Vibration	Frequency 10 Hz to 55 Hz to 10 Hz Amplitude: 1.5mm Time: 1 minute Apply for 2 hours in each mutually perpendicular direction	No opens or shorts or mechanical damage	IEC 68-2-6 Fc
Damp heat (no load)	Temperature: 40°C Humidity: 90~95% Time: 1000 hours	Capacitance change: ≤5% of initially measured value D.F. change: ≤0.5% at 1kHz I.R. change: ≥50% of specified value	IEC 60068-2-78
Damp heat (with load)	Temperature: 85°C Humidity: 90~95% Time: 1000 hours Rated voltage applied	Capacitance change: ≤5% of initially measured value D.F. change: ≤0.5% at 1kHz I.R. change: ≥50% of specified value	IEC 60068-2-78

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<table>
<tr><th>Specification</th><th>Procedure</th><th>Requirements</th><th>Standard</th></tr>
<tr><td>Dry heat</td><td>Temperature: 105°C
Time: 16 hours
No voltage applied</td><td></td><td>IEC 68-2-2</td></tr>
<tr><td>Temperature cycling</td><td><table><tr><th>Step</th><th>Temp (°C)</th><th>Time (min)</th></tr><tr><td>1</td><td>40+-3</td><td>20+-3</td></tr><tr><td>2</td><td>25</td><td>3</td></tr><tr><td>3</td><td>105+-2</td><td>30+-3</td></tr><tr><td>4</td><td>25</td><td>3</td></tr></table></td><td>Capacitance change: ≤10% of initially measured value
D.F.: ≤0.5% at 1kHz
I.R.: ≥50% of specified value</td><td>IEC 68-2-14 Na</td></tr>
<tr><td>Temperature coefficient</td><td>$TC = \frac{C_1 - C_2}{C_2(T_1 - T_2)}$</td><td>$C_1$= Capacitance at T_1
C_2= Capacitance at 25°C
T_1=Temperature of interest
T_2=+25°C</td><td>IEC 60284</td></tr>
<tr><td>Lead bend</td><td>Bend the terminal 90° in one direction then back then 90° in the opposite direction and back</td><td>Leads shall not break</td><td>IEC 68-2-21</td></tr>
<tr><td>Dielectric strength (T-T)</td><td>150%-200% of rated voltage applied between terminals for 2~10 seconds</td><td>No shorts or opens</td><td>IEC 60284</td></tr>
<tr><td>Dielectric strength (T-C)</td><td>3kVac (50/60Hz) voltage applied between terminals and case for 2~10 seconds</td><td>No shorts or opens</td><td>IEC 60284</td></tr>
</table>

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