

Standard Properties Table

Properties	Typical Value				Units	Test Conditions	Test Method
	RO3003	RO3035	RO3006	RO3010			
Electrical Properties							
Dielectric Constant (process)	3.00± 0.04	3.50 ± 0.05	6.15 ± 0.15	10.2 ± 0.30	-	23°C 10 GHz	IPC TM-650 2.5.5.5
Dielectric Constant (design)	3.00	3.60	6.50	11.20	-	8 GHz - 40 GHz	Differential Phase Length
Dissipation Factor	0.0010	0.0015	0.0020	0.0022	-	23°C 10 GHz	IPC TM-650 2.5.5.5
Thermal Coefficient of Dielectric Constant	-3	-45	-262	-395	ppm/°C	-50 to 150°C 10 GHz	IPC TM-650 2.5.5.5
Volume Resistivity	10 ⁷	10 ⁷	10 ⁵	10 ⁵	MΩ-cm	Condition A	IPC TM-650 2.5.17.1
Surface Resistivity	10 ⁷	10 ⁷	10 ⁵	10 ⁵	MΩ	Condition A	IPC TM-650 2.5.17.1
Thermal Properties							
Decomposition Temperature (Td)	500	500	500	500	°C TGA	-	ASTM D3850
Coefficient of Thermal Expansion - x	17	17	17	13	ppm/°C	-55 to 288°C 23°C/ 50% RH	IPC TM-650 2.4.41
Coefficient of Thermal Expansion - y	16	17	17	11	ppm/°C		
Coefficient of Thermal Expansion - z	25	24	24	16	ppm/°C		
Thermal Conductivity	0.50	0.50	0.79	0.95	W/(mK)	50°C	ASTM D5470
Mechanical Properties							
Copper Peel Strength	12.7	10.2	7.1	9.4	lbs/in	1 oz. EDC After Solder Float	IPC TM-650 2.4.8
Young's Modulus	930 823	1025 1006	1498 1293	1902 1934	MPa	23°C	ASTM D638
Dimensional Stability (MD, CMD)	-0.06 0.07	-0.11 0.11	-0.27 -0.15	-0.35 -0.31	mm/m	Condition A	IPC TM-650 2.2.4
Physical Properties							
Flammability	V-0	V-0	V-0	V-0	-	-	UL 94
Moisture Absorption	0.04	0.04	0.02	0.05	%	D48/50	IPC TM-650 2.6.2.1
Density	2.1	2.1	2.6	2.8	g/cm ³	23°C	ASTM D792
Specific Heat Capacity	0.9		0.86	0.8	J/g/K	-	Calculated
Lead Free Process Compatible	Yes	Yes	Yes	Yes	-	-	-

Available Configurations

Standard Thicknesses	Standard Panel Sizes	Standard Cladding
<p>RO3003:</p> <p>0.005" (0.13mm) +/- 0.0005"</p> <p>0.010" (0.25mm) +/- 0.0007"</p> <p>0.020" (0.51mm) +/- 0.0010"</p> <p>0.030" (0.76mm) +/- 0.0015"</p> <p>0.060" (1.52mm) +/- 0.0030"</p> <p>RO3006/RO3010:</p> <p>0.005" (0.13mm) +/- 0.0005"</p> <p>0.010" (0.25mm) +/- 0.0007"</p> <p>0.025" (0.64mm) +/- 0.0010"</p> <p>0.050" (1.28mm) +/- 0.0020"</p> <p>RO3035</p> <p>0.010" (0.25mm) +/- 0.0005"</p> <p>0.020" (0.51mm) +/- 0.0010"</p> <p>0.060" (1.52mm) +/- 0.0030"</p>	<p>RO3003/RO3006/RO3010/RO3035:</p> <p>12" X 18" (305 X 457mm)</p> <p>24" X 18" (610 X 457mm)</p> <p>RO3003 0.005" and 0.010":</p> <p>12" X 18" (305 X 457mm)</p> <p>24" X 18" (610 X 457mm)</p> <p>24" X 21" (610 X 533mm)</p>	<p>RO3003:</p> <p><u>Electrodeposited Copper Foil</u></p> <p>½ oz. (18µm)</p> <p>1 oz. (35µm)</p> <p><u>Rolled Copper Foil</u></p> <p>½ oz. (18µm)</p> <p>1 oz. (35µm)</p> <p>RO3006/RO3010/RO3035:</p> <p><u>Electrodeposited Copper Foil</u></p> <p>½ oz. (18µm)</p> <p>1 oz. (35µm)</p> <p>www.ipcb.com</p>