

Electrical Properties ⁽¹⁾	AD300D	AD320A	AD350A	Units	Test Conditions		Test Method
PIM (30mil/60mil) ⁽²⁾	-159/-163	-159/-163	-159/-163	dBc	Reflected 43 dBm swept tones at 1900 MHz, S1/S1		Rogers Internal 50 ohm
Dielectric Constant (process)	2.97/3.03 (2.94/3.00)	3.21	3.54	-	23°C @ 50% RH	10 GHz (1 MHz)	IPC TM-650 2.5.5.5 (IPC TM-650 2.5.5.3)
Dielectric Constant (design)	2.94/3.00	3.20	3.50	-	C-24/23/50	10 GHz	Microstrip Differential Phase Length
Dissipation Factor (process)	0.0021	0.0038	0.0033	-	23°C @ 50% RH	10 GHz	IPC TM-650 2.5.5.5
Thermal Coefficient of Dielectric Constant	-73	-98	-57	ppm/°C	0°C to 100°C	10 GHz	IPC TM-650 2.5.5.5
Volume Resistivity	1.7 x 10 ⁸	1.1 x 10 ⁹	1.5 x 10 ⁹	Mohm-cm	C-96/35/90	-	IPC TM-650 2.5.17.1
Surface Resistivity	5.1 x 10 ⁷	4.0 x 10 ⁷	9.5 x 10 ⁷	Mohm	C-96/35/90	-	IPC TM-650 2.5.17.1
Electrical Strength (dielectric strength)	750	748	671	V/mil	-	-	IPC TM-650 2.5.6.2
Dielectric Breakdown	46	35	33	kV	D-48/50	X/Y direction	IPC TM-650 2.5.6
Thermal Properties⁽¹⁾							
Decomposition Temperature (T _d)	>500	>500	>500	°C	2hrs @ 105°C	5% Weight Loss	IPC TM-650 2.3.40
Coefficient of Thermal Expansion - x	24	27	18	ppm/°C	-	-55°C to 288°C	IPC TM-650 2.4.41
Coefficient of Thermal Expansion - y	23	36	18	ppm/°C	-	-55°C to 288°C	IPC TM-650 2.4.41
Coefficient of Thermal Expansion - z	98	93	63	ppm/°C	-	-55°C to 288°C	IPC TM-650 2.4.41
Thermal Conductivity	0.37	0.33	0.44	W/mK	-	z direction	ASTM D5470
Time to Delamination	>60	>60	>60	minutes	as-received	288°C	IPC TM-650 2.4.24.1
Mechanical Properties⁽¹⁾							
Copper Peel Strength after Thermal Stress	3.2 (18.3)	2.2 (12.3)	2.6 (14.7)	N/mm (lbs/in)	10s @288°C	35 µm foil	IPC TM-650 2.4.8
Flexural Strength (MD/CMD)	152.4/127.6 (22.1/18.5)	14.2/12.9 (97.9/88.9)	14.2/9.0 (97.9/62.1)	MPa (ksi)	25°C ± 3°C	-	ASTM D790
Tensile Strength (MD/CMD)	122.0/120.7 (17.7/17.5)	14.3/12.8 (98.6/88.3)	14.2/6.7 (97.9/46.2)	MPa (ksi)	23°C/50% RH	-	ASTM D3039/D3039-14
Flex Modulus (MD/CMD)	10,400/9,580 (1510/1390)	1,496/1,481 (10,315/10,211)	1,835/1,469 (12,652/10,128)	MPa (ksi)	25°C ± 3°C	-	IPC-TM-650 Test Method 2.4.4
Dimensional Stability (MD/CMD)	-0.08/0.02	0.11/0.15	0.15/0.17	mils/inch	after etch + bake	-	IPC-TM-650 2.4.39a
Physical Properties⁽¹⁾							
Flammability	V-0	V-0	V-0	-	-	-	UL-94
Moisture Absorption	0.04	0.08	0.1	%	E1/105 +D48/50	-	IPC TM-650 2.6.2.1
Density	2.23	2.41	2.43	g/cm ³	C-24/23/50	-	ASTM D792
Specific Heat Capacity	0.80	0.797	0.757	J/g°K	2 hours at 105°C	-	ASTM E2716
Product	Standard Thicknesses			Available Claddings			Standard Panel Sizes
AD300D	0.030" (0.762 mm) 0.040" (1.061 mm)	0.060" (1.524 mm) 0.120" (3.048 mm)		• ½ oz. (18µm), 1oz. (35µm), 2 oz. (70µm) ED • ½ oz. (18µm), 1oz. (35µm), 2 oz. (70µm) RT			12" x 18" (305mm x 457mm) 24" x 18" (610mm x 457mm)
AD320A	0.030" (0.762 mm) 0.031" (0.787 mm) 0.041" (1.041 mm)	0.062" (1.575 mm) 0.120" (3.048 mm) 0.250" (6.350 mm)		• ½ oz. (18µm), 1oz. (35µm), 2 oz. (70µm) ED • ½ oz. (18µm), 1oz. (35µm), 2 oz. (70µm) RT			12" x 18" (305mm x 457mm) 24" x 18" (610mm x 457mm)
AD350A	0.020" (0.508 mm) 0.030" (0.762 mm) 0.040" (1.016 mm)	0.050" (1.270 mm) 0.060" (1.524 mm) 0.090" (2.286 mm)	0.120" (3.048 mm) 0.125" (3.175 mm) 0.200" (5.080 mm)	• ½ oz. (18µm), 1oz. (35µm), 2 oz. (70µm) ED • ½ oz. (18µm), 1oz. (35µm), 2 oz. (70µm) RT			12" x 18" (305mm x 457mm) 24" x 18" (610mm x 457mm)