

PROPERTY ⁽¹⁾	TYPICAL VALUES		DIRECTION	UNITS	CONDITION	TEST METHOD
	RO4450F	RO4460G2				
Thickness	4 (0.101)	4 (0.101)	Z	mils (mm)	-	-
Glass	1080	1080	-	-	-	-
Resin Content	80	79	-	%	-	-
Dielectric Constant, ϵ_r	3.52 ± 0.05	6.15 ± 0.15	Z	-	10 GHz - 23°C	IPC-TM-650 2.5.5.5
Dissipation Factor, tan δ	0.004	0.004	Z	-	10 GHz - 23°C	IPC-TM-650 2.5.5.5
Dielectric Strength	1000	1000	Z	V/mil	23°C/50% RH	IPC-TM-650 2.5.6.2
Volume Resistivity	8.93 X 10 ⁸	9.1 X 10 ⁸	-	M Ω -cm	23°C/50% RH	IPC-TM-650 2.5.17.1
Surface Resistivity	1.03 X 10 ⁷	1.5 X 10 ⁸	X,Y	M Ω	23°C/50% RH	IPC-TM-650 2.5.17.1
Thermal Conductivity	0.65	0.67	Z	W/m/K	80°C	ASTM C518
Moisture Absorption	0.09	0.13	-	%	48 hrs immersion 0.060" sample temperature 50°C	ASTM D570
Tg	>280	170	-	°C TMA	-60°C - 300°C @ 10°C/min	IPC-TM-650 2.4.24.3
Td	390	405	-	°C TGA	-	ASTM D3850
Density	1.83	2.22	-	gm/cm ³	23°C	ASTM D792
Copper Adhesion	4.0 (0.70)	5.0 (1.04)	Z	pli (N/mm)	½ oz. EDC After Solder Float	IPC-TM-650 2.4.8
Coefficient of Thermal Expansion	19 17 50	15 18 43	X Y Z	ppm/°C	-55 to 280°C	IPC-TM-650 2.4.41
Color	White	White	-	-	-	-
Flammability	V-0	V-0	-	-	-	UL94
Lead-Free Process Compatible	Yes	Yes	-	-	-	-

Notes:

⁽¹⁾Typical values are a representation of an average value for the population of the property. For specification values contact Rogers Corporation. Rogers UL file number is E102763B.

STANDARD THICKNESS:	STANDARD SIZE:
RO4450F 0.0040" (0.101mm) RO4460G2 0.0040" (0.101mm)	24" X 18" Sheets (610 mm X 457 mm) Contact Customer Service for other available sizes.

	TYPICAL VALUES ⁽¹⁾ - RO4450T			DIRECTION	UNITS	CONDITIONS	TEST METHOD
	3 (0.076)	4 (0.101)	5 (0.127)				
Electrical Properties⁽¹⁾							
Dielectric Constant, ϵ_r	3.23 ± 0.05	3.35 ± 0.05	3.28 ± 0.05	Z	-	10 GHz - 23°C	IPC-TM-650 2.5.5.5
Dissipation Factor, tan δ	0.0039	0.0040	0.0038	Z	-	10 GHz - 23°C	IPC-TM-650 2.5.5.5
Volume Resistivity	2.9 X 10 ⁹	1.4 X 10 ⁹	2.3 X 10 ⁹	-	MΩ-cm	23°C/50% RH	IPC-TM-650 2.5.17.1
Surface Resistivity	2.5 X 10 ⁸	1.0 X 10 ⁷	1.7 X 10 ⁸	X, Y	MΩ	23°C/50% RH	IPC-TM-650 2.5.17.1
Electrical Strength	1020	1040	990	Z	V/mil	23°C/50% RH	IPC-TM-650 2.5.6.2
Thermal Properties⁽¹⁾							
Td	406	408	405	-	°C TGA	2 hrs @ 105°C	IPC-TM-650 2.3.40
Tg	170	170	170	-	°C TMA	-60°C - 300°C @ 10°C/min	IPC-TM-650 2.4.24.3
Coefficient of Thermal Expansion	20	15	19	X	ppm/°C	-55°C - 288°C	IPC-TM-650 2.4.41
Coefficient of Thermal Expansion	21	16	20	Y	ppm/°C	-55°C - 288°C	IPC-TM-650 2.4.41
Coefficient of Thermal Expansion	57	58	62	Z	ppm/°C	-55°C - 288°C	IPC-TM-650 2.4.41
Thermal Conductivity	0.50	0.55	0.53	Z	W/m/°K	80°C	ASTM D5470
Mechanical Properties⁽¹⁾							
Copper Adhesion	4.8 (0.84)	4.5 (0.79)	4.9 (0.86)	Z	pli (N/mm)	½ oz. EDC After Solder Float	IPC-TM-650 2.4.8
Physical Properties⁽¹⁾							
Glass	106	1035	1065	-	-	-	-
Resin Content	82	75	80	-	%	-	-
Color	White	White	White	-	-	-	-
Flammability	V-0	V-0	V-0	-	-	-	UL94
Moisture Absorption	0.11	0.11	0.10	-	%	48 hrs @ 50°C	IPC-TM-650 2.6.2.1
Lead-Free Process Compatible	YES	YES	YES	-	-	-	-

Notes:

⁽¹⁾Typical values are a representation of an average value for the population of the property. For specification values contact Rogers Corporation.

RO4400 Bondply thickness tolerance is +/-0.0006" based on Rogers' parameters and equipment that presses the materials between two flat surfaces. Values may vary depending on how non-planar the PCB layers are.

STANDARD THICKNESS: RO4450T	STANDARD SIZE:
0.003"(0.076 mm) 0.004"(0.101 mm) 0.005"(0.127 mm)	24" X 18" sheets (610 mm X 457 mm) Contact Customer Service for other available sizes.