



Advanced Connectivity Solutions

PRODUCT SELECTOR GUIDE

Rogers Corporation was founded in 1832 and has over 60 years of experience as a global supplier of high performance RF materials.

Rogers Corporation's Advanced Connectivity Solutions (ACS) is the world's leading manufacturer of high performance dielectrics, laminates and prepregs used in microwave and RF printed circuit and related applications in Aerospace & Defense, Wireless & Wireline (digital) Infrastructure, Automotive Radar Sensor, Satellite TV, Mobile Internet Device and High End Chip Scale Packaging.

ACS is headquartered in Chandler, Arizona. Additional manufacturing, sales and technical service locations in North America, Europe and Asia enable Rogers to support our global customers at the local level.



Beyond recently expanded manufacturing capability, an extensive and growing product portfolio supports a wide array of application needs and environments. Rogers' application and technical service engineers are ready to assist in material selection, for design and PCB manufacturing phases of your product development process.



With unmatched industry expertise, Rogers Corporation continues to conceive and develop new material solutions for ever more challenging problems. For example, over the last several years Rogers Corporation introduced thermal management materials and continues to innovate to meet the needs for a range of emerging higher power applications. Our dedication to improving on electrical characterization capabilities, already best in class, enables us to anticipate questions and work collaboratively to push the material performance envelope.

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Primary Markets

Product	AUTOMOTIVE		
	Active Safety	Telematics/Infotainment	Thermal Management
2929 Bondply			
3001 Bonding Film			
92ML™			X
92ML StaCool™			X
AD250C™		X	
AD255C™		X	
AD260A™		X	
AD300C™		X	
AD320A™		X	
AD350A™		X	
AD430™		X	
AD410™		X	
AD450™		X	
AD600™		X	
CLTE-XT™	X		
CLTE™	X		
CLTE-AT™	X		
CLTE-P™	X		
CuClad® 217			
CuClad 233			
CuClad 250			
CuClad 6250 Bonding Film			
CuClad 6700 Bonding Film			
COOLSPAN®			X
DiClad® 880			
DiClad 870			
DiClad 527			
IsoClad® 917			
IsoClad 933			
R03003™	X	X	
R03203™		X	
R03035™		X	
R03006™		X	
R03206™		X	
R03010™		X	
R03210™		X	
R04725JXR™		X	
R04730JXR™		X	
R04730G3™		X	
R04533™		X	
R04003C™	X	X	
R04534™		X	
R04350B™	X	X	
R04450F™		X	
R04835™	X	X	
R04535™		X	
R04360G2™		X	
RT/duroid® 5880LZ	X		
RT/duroid 5880	X		
RT/duroid 5870	X		
RT/duroid 6002	X		
RT/duroid 6202PR	X		
RT/duroid 6202	X		
RT/duroid 6006	X		
RT/duroid 6035HTC	X		
RT/duroid 6010LM	X		
TC350™			
TC600™			
TMM® 3			
TMM 4			
TMM 6			
TMM 10			
TMM 10i			
TMM 13i			
XT/duroid® 8000			X
XT/duroid 8100			X
ULTRALAM® 3850HT	X		
ULTRALAM 3908			

CONNECTED DEVICES			Product
Internet of Things (IoT)	Mobile Internet Devices	Thermal Management	
			2929 Bondply
			3001 Bonding Film
		X	92ML™
		X	92ML StaCool™
			AD250C™
			AD255C™
			AD260A™
			AD300C™
			AD320A™
			AD350A™
			AD430™
			AD410™
			AD450™
			AD600™
			CLTE-X™
			CLTE™
			CLTE-AT™
			CLTE-P™
			CuClad® 217
			CuClad 233
			CuClad 250
			CuClad 6250 Bonding Film
			CuClad 6700 Bonding Film
		X	COOLSPAN®
			DiClad® 880
			DiClad 870
			DiClad 527
			IsoClad® 917
			IsoClad 933
			R03003™
			R03203™
			R03035™
X	X		R03006™
			R03206™
X	X		R03010™
			R03210™
			R04725JXR™
			R04730JXR™
			R04730G3™
			R04533™
X			R04003C™
			R04534™
X	X		R04350B™
			R04450F™
X	X		R04835™
			R04535™
X	X		R04360G2™
			RT/duroid® 5880LZ
			RT/duroid 5880
			RT/duroid 5870
			RT/duroid 6002
			RT/duroid 6202PR
			RT/duroid 6202
			RT/duroid 6006
			RT/duroid 6035HTC
			RT/duroid 6010LM
		X	TC350™
		X	TC600™
			TMM® 3
			TMM 4
			TMM 6
			TMM 10
			TMM 10i
			TMM 13i
			XT/duroid® 8000
			XT/duroid 8100
X	X		ULTRALAM® 3850HT
			ULTRALAM 3908

Primary Markets

Product	HIGH RELIABILITY			
	Antenna Systems	Communications Systems	Radar Systems	Space Based Systems
2929 Bondply	X	X	X	X
3001 Bonding Film				
92ML™				
92ML StaCool™				
AD250C™	X	X		
AD255C™	X	X		
AD260A™	X	X		
AD300C™	X	X		
AD320A™	X	X		
AD350A™	X	X		
AD430™	X	X		
AD410™	X	X		
AD450™	X	X		
AD600™	X	X		
CLTE-XT™	X	X	X	X
CLTE™	X	X	X	X
CLTE-AT™	X	X	X	X
CLTE-P™	X	X	X	X
CuClad® 217	X	X	X	X
CuClad 233	X	X	X	X
CuClad 250	X	X	X	X
CuClad 6250 Bonding Film	X	X		X
CuClad 6700 Bonding Film	X	X		X
COOLSPAN®			X	
DiClad® 880				
DiClad 870				
DiClad 527				
IsoClad® 917				
IsoClad 933				
R03003™	X	X	X	
R03203™	X	X	X	X
R03035™	X	X	X	
R03006™	X	X	X	
R03206™	X	X	X	X
R03010™	X	X	X	
R03210™	X	X	X	X
R04725JXR™				
R04730JXR™				
R04360G2™				
R04533™				
R04003C™		X	X	
R04534™				
R04350B™		X	X	
R04450F™		X	X	
R04835™		X	X	
R04535™				
R04360G2™		X	X	
RT/duroid® 5880LZ	X	X	X	X
RT/duroid 5880	X	X	X	X
RT/duroid 5870	X	X	X	X
RT/duroid 6002	X	X	X	X
RT/duroid 6202PR	X	X	X	X
RT/duroid 6202	X	X	X	X
RT/duroid 6006	X	X	X	X
RT/duroid 6035HTC	X	X	X	X
RT/duroid 6010LM	X	X	X	X
TC350™			X	
TC600™			X	
TMM® 3	X		X	X
TMM 4	X		X	X
TMM 6	X		X	X
TMM 10	X		X	X
TMM 10i	X		X	X
TMM 13i	X		X	X
XT/duroid® 8000				
XT/duroid 8100				
ULTRALAM® 3850HT			X	
ULTRALAM 3908			X	

WIRED INFRASTRUCTURE			Product
Computing	IP Infrastructure	Test & Measurement	
X	X	X	2929 Bondply
			3001 Bonding Film
			92ML™
			92ML StaCool™
			AD250C™
			AD255C™
			AD260A™
			AD300C™
			AD320A™
			AD350A™
			AD430™
			AD410™
			AD450™
			AD600™
			CLTE-XT™
			CLTE™
			CLTE-AT™
			CLTE-P™
			CuClad® 217
			CuClad 233
			CuClad 250
			CuClad 6250 Bonding Film
			CuClad 6700 Bonding Film
			COOLSPAN®
			DiClad® 880
			DiClad 870
			DiClad 527
			IsoClad® 917
			IsoClad 933
			R03003™
			R03203™
			R03035™
			R03006™
			R03206™
			R03010™
			R03210™
			R04725JXR™
			R04730JXR™
			R04360G2™
			R04533™
X	X	X	R04003C™
			R04534™
X	X	X	R04350B™
X	X	X	R04450F™
X	X	X	R04835™
			R04535™
			R04360G2™
			RT/duroid® 5880LZ
			RT/duroid 5880
			RT/duroid 5870
			RT/duroid 6002
			RT/duroid 6202PR
			RT/duroid 6202
			RT/duroid 6006
			RT/duroid 6035HTC
			RT/duroid 6010LM
			TC350™
			TC600™
			TMM® 3
			TMM 4
			TMM 6
			TMM 10
			TMM 10i
			TMM 13i
			XT/duroid® 8000
			XT/duroid 8100
X	X	X	ULTRALAM® 3850HT
X	X	X	ULTRALAM 3908

Primary Markets

Product	WIRELESS INFRASTRUCTURE			
	Antennas	Backhaul Radios	Power Amplifiers	Small Cells/DAS
2929 Bondply				
3001 Bonding Film				
92ML™				
92ML StaCool™				
AD250C™	X			
AD255C™	X			
AD260A™	X			
AD300C™	X			
AD320A™	X			
AD350A™	X			
AD430™	X			
AD410™	X			
AD450™	X			
AD600™	X			
CLTE-XT™				
CLTE™				
CLTE-AT™		X	X	
CLTE-P™				
CuClad® 217				
CuClad 233				
CuClad 250				
CuClad 6250 Bonding Film				
CuClad 6700 Bonding Film				
COOLSPAN®				
DiClad® 880				
DiClad 870				
DiClad 527				
IsoClad® 917				
IsoClad 933				
R03003™		X	X	
R03203™				
R03035™			X	
R03006™			X	
R03206™				
R03010™				
R03210™				
R04725JXR™	X			
R04730JXR™	X			
R04360G2™	X			
R04533™	X			
R04003C™				
R04534™	X			
R04350B™		X	X	X
R04450F™			X	
R04835™		X	X	X
R04535™				
R04360G2™			X	X
RT/duroid® 5880LZ				
RT/duroid 5880				
RT/duroid 5870				
RT/duroid 6002				
RT/duroid 6202PR				
RT/duroid 6202				
RT/duroid 6006				
RT/duroid 6035HTC				
RT/duroid 6010LM				
TC350™		X		
TC600™		X		
TMM® 3				
TMM 4				
TMM 6				
TMM 10				
TMM 10i				
TMM 13i				
XT/duroid® 8000				
XT/duroid 8100				
ULTRALAM® 3850HT				
ULTRALAM 3908				

LAMINATES

Product	Dielectric Constant, ϵ_r @ 10 GHz (Typical)		Dissipation ⁽¹⁾ Factor TAN δ @ 10 GHz (Typical)	Thermal ⁽²⁾ Coefficient of ϵ_r -50°C to 150°C ppm/°C (Typical)	Volume Resistivity Mohm · cm (Typical)	Surface Resistivity Mohm (Typical)	Water ⁽⁴⁾ Absorption D48/50 % (Typical)	
	Process ⁽¹⁾	Design ⁽¹¹⁾						
ML SERIES™ 92ML™ Woven Glass Reinforced Modified Epoxy Laminates	5.2 (1 MHz)	-	0.013 (1 MHz)	-	1.2 X 10 ⁹	2.8 X 10 ⁸	⁽²²⁾ 0.12	
	92ML StaCool™ Woven Glass Reinforced Modified Epoxy IMS	5.2 (1 MHz)	-	0.013 (1 MHz)	-	1.2 X 10 ⁹	2.8 X 10 ⁸	⁽²²⁾ 0.12
AD SERIES™ AD250C™ Woven Glass Reinforced PTFE Antenna Grade Laminates	2.50	-	0.0013	-95	1.1 X 10 ⁹	4.5 X 10 ⁷	⁽²²⁾ 0.04	
	AD255C™ Woven Glass Reinforced PTFE Antenna Grade Laminates	2.55	2.60	0.0014	-90	1.1 X 10 ⁹	4.5 X 10 ⁷	⁽²²⁾ 0.04
	AD260A™ Woven Glass Reinforced PTFE Antenna Grade Laminates	2.60	2.65	0.0017	-118	1.1 X 10 ⁹	4.5 X 10 ⁷	⁽²²⁾ 0.04
	AD300C™ Woven Glass Reinforced PTFE Antenna Grade Laminates	2.97	2.97	0.0020	-25	1.2 X 10 ⁸	2.5 X 10 ⁸	⁽²²⁾ 0.05
	AD320A™ Woven Glass Reinforced PTFE Antenna Grade Laminates	3.20	-	0.0032	-90	1.2 X 10 ⁹	4.5 X 10 ⁷	⁽²²⁾ 0.07
	AD350A™ Woven Glass Reinforced PTFE Antenna Grade Laminates	3.50	-	0.0030	-55	1.2 X 10 ⁹	4.5 X 10 ⁷	⁽²²⁾ 0.10
	AD410™ Woven Glass Reinforced PTFE Antenna Grade Laminates	4.10	-	0.0030	-100	1.2 X 10 ⁹	4.5 X 10 ⁷	⁽²²⁾ 0.06
	AD430™ Woven Glass Reinforced PTFE Antenna Grade Laminates	4.30	-	0.0030	-100	1.2 X 10 ⁹	4.5 X 10 ⁷	⁽²²⁾ 0.06
	AD450™ Woven Glass Reinforced PTFE Antenna Grade Laminates	4.50	-	0.0035	-200	1.2 X 10 ⁹	4.5 X 10 ⁷	⁽²²⁾ 0.06
	AD600™ Woven Glass Reinforced PTFE	6.15*	-	0.0030	-241	-	-	⁽²²⁾ 0.04
	AD1000™ Woven Glass Reinforced PTFE	10.20*	10.8	0.0023	-380	1.4 X 10 ⁹	1.8 X 10 ⁹	⁽²²⁾ 0.03
	CLTE SERIES™ CLTE-XT™ Woven Glass Reinforced PTFE	2.94*	2.94	0.0012	-9	4.3 X 10 ⁸	2.5 X 10 ⁸	⁽²²⁾ 0.02
CLTE™ Woven Glass Reinforced PTFE		2.98	2.98	0.0023	-9	1.4 X 10 ⁹	1.3 X 10 ⁶	⁽²²⁾ 0.04
CLTE-AT™ Woven Glass Reinforced PTFE		3.00	3.00	0.0013	-10	4.3 X 10 ⁸	2.0 X 10 ⁸	⁽²²⁾ 0.03
CUCLAD® SERIES CuClad® 217 Cross-Plied Woven Glass Reinforced PTFE	2.17, 2.20	-	0.0009	-151	2.3 X 10 ⁸	3.4 X 10 ⁶	⁽²²⁾ 0.02	
	CuClad 233 Cross-Plied Woven Glass Reinforced PTFE	2.33	-	0.0013	-171	8.0 X 10 ⁸	2.4 X 10 ⁶	⁽²²⁾ 0.02
	CuClad 250 Cross-Plied Woven Glass Reinforced PTFE	2.40 to 2.60*	-	0.0017	-170	8.0 X 10 ⁹	1.5 X 10 ⁸	⁽²²⁾ 0.03
DICLAD® SERIES DiClad® 880 Woven Glass Reinforced PTFE	2.17, 2.20	2.2	0.0009	-160	1.4 X 10 ⁹	2.9 X 10 ⁶	⁽²²⁾ 0.02	
	DiClad 870 Woven Glass Reinforced PTFE	2.33	-	0.0013	-161	1.5 X 10 ⁹	3.4 X 10 ⁷	⁽²²⁾ 0.02
	DiClad 527 Woven Glass Reinforced PTFE	2.40 to 2.60*	-	0.0017	-153	1.2 X 10 ⁹	4.5 X 10 ⁷	⁽²²⁾ 0.03

Thermal Conductivity W/m ² /K (Typical) 50°C ASTM D5470	Coefficient of Thermal Expansion ⁽⁶⁾ -55° to 288°C ppm/°C (Typical)			Peel Strength 1 oz (35µm) ED Foil lbs/in. (N/mm) (Typical)	Density gm/cm ³ (Typical)	Flammability Rating UL 94	Lead-Free ⁽⁹⁾ Process Compatible	PIM dBc Typical	Product	
	X	Y	Z							
2.00	-	-	-	5.0	2.20	V-0	YES	-	92ML™ Woven Glass Reinforced Modified Epoxy Laminates	ML SERIES™
2.00	-	-	-	5.0	2.20	V-0	YES	-	92ML StaCool™ Woven Glass Reinforced Modified Epoxy IMS	
0.30	16	16	200	12.0	2.30	V-0	YES	-	AD250C™ Woven Glass Reinforced PTFE Antenna Grade Laminates	AD SERIES™
0.30	16	16	200	12.0	2.30	V-0	YES	-	AD255C™ Woven Glass Reinforced PTFE Antenna Grade Laminates	
0.30	16	16	80	17.0	2.30	V-0	YES	-	AD260A™ Woven Glass Reinforced PTFE Antenna Grade Laminates	
0.45	9	15	54	13.0	2.10	V-0	YES	-	AD300C™ Woven Glass Reinforced PTFE Antenna Grade Laminates	
0.35	14	14	40	12.0	2.09	V-0	YES	-	AD320A™ Woven Glass Reinforced PTFE Antenna Grade Laminates	
0.45	5	9	35	17.0	2.10	V-0	YES	-	AD350A™ Woven Glass Reinforced PTFE Antenna Grade Laminates	
0.46	5	9	35	12.0	2.30	V-0	YES	-	AD410™ Woven Glass Reinforced PTFE Antenna Grade Laminates	
0.46	5	9	35	12.0	2.30	V-0	YES	-	AD430™ Woven Glass Reinforced PTFE Antenna Grade Laminates	
0.40	10	10	40	12.0	2.50	V-0	YES	-	AD450™ Woven Glass Reinforced PTFE Antenna Grade Laminates	
0.46	11	10	45	12.0	2.45	V-0	YES	-	AD600™ Woven Glass Reinforced PTFE	
0.81	8	10	20	12.0	3.20	V-0	YES	-	AD1000™ Woven Glass Reinforced PTFE	
0.56	8	8	20	7.2	2.02	V-0	YES	-	CLTE-X™ Woven Glass Reinforced PTFE	
0.50	10	12	34	7.0	2.38	V-0	YES	-	CLTE™ Woven Glass Reinforced PTFE	
0.64	8	8	20	6.5	2.06	V-0	YES	-	CLTE-AT™ Woven Glass Reinforced PTFE	
0.26	29	28	246	14.0	2.23	V-0	YES	-	CuClad® 217 Cross-Plied Woven Glass Reinforced PTFE	CUCLAD® SERIES
0.26	23	24	194	14.0	2.26	V-0	YES	-	CuClad 233 Cross-Plied Woven Glass Reinforced PTFE	
0.25	18	19	177	14.0	2.31	V-0	YES	-	CuClad 250 Cross-Plied Woven Glass Reinforced PTFE	
0.26	25	34	252	14.0	2.23	V-0	YES	-	DiClad® 880 Woven Glass Reinforced PTFE	DICALAD® SERIES
0.26	17	29	217	14.0	2.26	V-0	YES	-	DiClad 870 Woven Glass Reinforced PTFE	
0.25	14	21	173	14.0	2.31	V-0	YES	-	DiClad 527 Woven Glass Reinforced PTFE	

LAMINATES

Product	Dielectric Constant, ϵ_r @ 10 GHz (2.5 GHz) (Typical)		Dissipation ⁽¹⁾ Factor TAN δ @ 10 GHz (2.5 GHz) (Typical)	Thermal ⁽²⁾ Coefficient of ϵ_r -50°C to 150°C ppm/°C (Typical)	Volume Resistivity Mohm · cm (Typical)	Surface Resistivity Mohm (Typical)	Water ⁽⁴⁾ Absorption D48/50 % (Typical)	
	Process ⁽¹⁾	Design ⁽¹¹⁾						
ISOCLAD® SERIES IsoClad® 917 Non-Woven Glass Reinforced PTFE	2.17	-	0.0013	-157	1.5 X 10 ¹⁰	1.0 X 10 ⁹	⁽²²⁾ 0.04	
	IsoClad 933 Non-Woven Glass Reinforced PTFE	2.33	-	0.0016	-132	3.5 X 10 ⁸	1.0 X 10 ⁸	⁽²²⁾ 0.05
RO3000® SERIES	R03003™ PTFE Ceramic	⁽⁷⁾⁽⁸⁾ 3.00 ± 0.04	3.00	0.0010	-3	1 X 10 ⁷	1 X 10 ⁷	0.04
	R03203™ PTFE Ceramic Woven Glass Reinforced	⁽⁷⁾ 3.02 ± 0.04	3.02	0.0016	-13	1 X 10 ⁷	1 X 10 ⁷	0.03
	R03035™ PTFE Ceramic	3.50 ± 0.05	3.60	0.0015	-45	1 X 10 ⁷	1 X 10 ⁷	0.04
	R03006™ PTFE Ceramic	6.15 ± 0.15	6.5	0.002	-262	1 X 10 ⁵	1 X 10 ⁵	0.02
	R03206™ PTFE Ceramic Woven Glass Reinforced	6.15 ± 0.15	6.6	0.0027	-212	1 X 10 ³	1 X 10 ³	0.03
	R03010™ PTFE Ceramic	10.20 ± 0.30	11.2	0.0022	-395	1 X 10 ⁵	1 X 10 ⁵	0.05
	R03210™ PTFE Ceramic Woven Glass Reinforced	10.20 ± 0.50	10.8	0.0027	-459	1 X 10 ³	1 X 10 ³	0.12
RO4000® SERIES	R04725JXR™ Hydrocarbon / Ceramic / Woven Glass Antenna Grade Laminates	2.55 ± 0.05	2.64	0.0026 (0.0022)	+34	2.16 X 10 ⁸	4.8 X 10 ⁷	0.24
	R04730JXR™ Hydrocarbon / Ceramic / Woven Glass Antenna Grade Laminates	3.00 ± 0.05	2.98	0.0027 (0.0023)	+32	5.96 X 10 ⁸	1.68 X 10 ⁸	0.14
	R04730G3™ Hydrocarbon / Ceramic / Woven Glass UL94 V-0 Antenna Grade Laminates	3.00 ± 0.05	2.98	0.0029 (0.0023)	+26	4.78 X 10 ⁸	2.78 X 10 ⁸	0.15
	R04533™ Hydrocarbon / Ceramic / Woven Glass Antenna Grade Laminates	3.30 ± 0.08	3.45	0.0025 (0.0020)	+40	1.1 X 10 ¹⁰	9.9 X 10 ⁸	0.02
	R04003C™ Hydrocarbon Ceramic Woven Glass	3.38 ± 0.05	3.55	0.0027	+40	1.7 X 10 ¹⁰	4.2 X 10 ⁹	0.04
	R04534™ Hydrocarbon / Ceramic / Woven Glass Antenna Grade Laminates	3.40 ± 0.08	3.55	0.0027 (0.0022)	+40	1.7 X 10 ¹⁰	4.2 X 10 ⁹	0.06
	R04350B™ Hydrocarbon Ceramic Woven Glass	3.48 ± 0.05	3.66	0.0037	+50	1.2 X 10 ¹⁰	5.7 X 10 ⁹	0.05
	R04835™ Hydrocarbon Ceramic Woven Glass	3.48 ± 0.05	3.66	0.0037	+50	1 X 10 ¹⁰	1 X 10 ⁹	0.05
	R04535™ Hydrocarbon / Ceramic / Woven Glass Antenna Grade Laminates	3.44 ± 0.08	3.60	0.0037 (0.0032)	+50	1.2 X 10 ¹⁰	5.7 X 10 ⁹	0.09
	R04360G2™ Hydrocarbon Ceramic Woven Glass	6.15 ± 0.15	6.4	0.0038	-131	4 X 10 ¹³	9 X 10 ¹²	0.08

Thermal Conductivity W/m/°K (Typical) 50°C ASTM D5470	Coefficient of Thermal Expansion ⁽⁶⁾ -55° to 288°C ppm/°C (Typical)			Peel Strength 1 oz (35µm) ED Foil lbs/in. (N/mm) (Typical)	Density gm/cm ³ (Typical)	Flammability Rating UL 94	Lead-Free ⁽⁹⁾ Process Compatible	PIM dBc Typical	Product	
	X	Y	Z							
0.26	46	47	236	10.0	2.23	V-0	YES	-	IsoClad® 917 Non-Woven Glass Reinforced PTFE	ISOCLAD® SERIES
0.26	31	35	203	10.0	2.27	V-0	YES	-	IsoClad 933 Non-Woven Glass Reinforced PTFE	
0.50	17	16	25	12.7 (2.2)	2.1	V-0	YES	-	R03003™ PTFE Ceramic	R03000® SERIES
0.48	13	13	58	10.2 (1.8)	2.1	V-0	YES	-	R03203™ PTFE Ceramic Woven Glass Reinforced	
0.50	17	17	24	10.2 (1.8)	2.1	V-0	YES	-	R03035™ PTFE Ceramic	
0.79	17	17	24	7.1 (1.2)	2.6	V-0	YES	-	R03006™ PTFE Ceramic	
0.67	13	13	34	10.7 (1.9)	2.7	V-0	YES	-	R03206™ PTFE Ceramic Woven Glass Reinforced	
0.95	13	11	16	9.4 (1.6)	2.8	V-0	YES	-	R03010™ PTFE Ceramic	
0.81	13	13	34	11.0 (1.9)	3	V-0	YES	-	R03210™ PTFE Ceramic Woven Glass Reinforced	
⁽¹⁹⁾ 0.38	13.9	19.0	25.6	8.5 (1.49)	1.27	NON FR	YES	≤-160	R04725JXR™ Hydrocarbon / Ceramic / Woven Glass Antenna Grade Laminates	
⁽¹⁹⁾ 0.49	11.3	13.5	21.1	8.4 (1.47)	1.53	NON FR	YES	≤-160	R04730JXR™ Hydrocarbon / Ceramic / Woven Glass Antenna Grade Laminates	
0.42	13.7	14.7	30.3	5.0	1.58	V-0	YES	≤-160	R04730G3™ Hydrocarbon / Ceramic / Woven Glass UL94 V-0 Antenna Grade Laminates	
0.60	13	11	37	6.9 (1.2)	1.8	NON FR	YES	-157	R04533™ Hydrocarbon / Ceramic / Woven Glass Antenna Grade Laminates	
0.71	11	14	46	6.0 (1.05)	1.8	NON FR	YES	-	R04003C™ Hydrocarbon Ceramic Woven Glass	R04000® SERIES
0.60	11	14	46	6.3 (1.1)	1.8	NON FR	YES	-157	R04534™ Hydrocarbon / Ceramic / Woven Glass Antenna Grade Laminates	
0.69	10	12	32	5.0 (0.88)	1.9	V-0	YES	-	R04350B™ Hydrocarbon Ceramic Woven Glass	
0.66	10	12	31	5.0 (0.88)	1.92	V-0	YES	-	R04835™ Hydrocarbon Ceramic Woven Glass	
0.6	16	17	50	5.1 (0.9)	1.9	V-0	YES	-157	R04535™ Hydrocarbon / Ceramic / Woven Glass Antenna Grade Laminates	
0.75	13	14	28	5.2 (0.91)	2.16	V-0	YES	-	R04360G2™ Hydrocarbon Ceramic Woven Glass	

LAMINATES

	Product	Dielectric Constant, ϵ_r @ 10 GHz (Typical)		Dissipation ⁽¹⁾ Factor TAN δ @ 10 GHz (Typical)	Thermal ⁽²⁾ Coefficient of ϵ_r -50°C to 150°C ppm/°C (Typical)	Volume Resistivity Mohm · cm (Typical)	Surface Resistivity Mohm (Typical)	Water ⁽⁴⁾ Absorption D48/50 % (Typical)
		Process ⁽¹⁾	Design ⁽¹¹⁾					
RT/DUROID 5000	RT/duroid® 5880LZ Filled PTFE Composite	2.00 ± 0.04	2.00	0.0021	+20	1.74 X 10 ⁷	2.08 X 10 ⁶	0.03
	RT/duroid 5880 PTFE RandomGlass Fiber	2.20 ± 0.02	2.20	0.0009	-125	2 X 10 ⁷	3 X 10 ⁷	0.02
	RT/duroid 5870 PTFE Random Glass Fiber	2.33 ± 0.02	2.33	0.0012	-115	2 X 10 ⁷	2 X 10 ⁷	0.02
RT/DUROID 6000	RT/duroid 6002 PTFE Ceramic	2.94 ± 0.04	2.94	0.0012	+12	1 X 10 ⁶	1 X 10 ⁷	0.02
	RT/duroid 6202PR ⁽²⁰⁾ PTFE Ceramic Woven Glass Reinforced	2.90 to 3.00 ± 0.04	2.90 to 3.00	0.0020	⁽⁸⁾ +5 to -15	1 X 10 ¹⁰	1 X 10 ⁹	0.03
	RT/duroid 6202 PTFE Ceramic Woven Glass Reinforced	⁽⁸⁾ 2.90 to 3.06	⁽⁸⁾ 2.90 to 3.06 ± 0.04	0.0015	⁽⁸⁾ +5 to -15	1 X 10 ⁶	1 X 10 ⁹	0.04
	RT/duroid 6035HTC PTFE Ceramic	3.50 ± 0.05	3.60	0.0013	-66	1 X 10 ⁸	1 X 10 ⁸	⁽¹²⁾ 0.06
	RT/duroid 6006 PTFE Ceramic	6.15 ± 0.15	6.45	0.0027	-410	2 X 10 ⁷	7 X 10 ⁷	0.05
	RT/duroid 6010LM PTFE Ceramic	10.20 ± 0.25	10.7	0.0023	-425	5 X 10 ⁵	5 X 10 ⁶	0.01
TC SERIES	TC350™	3.50	3.50	0.0020	-9	7.4 X 10 ⁶	3.2 X 10 ⁷	⁽²²⁾ 0.05
	TC600™	6.15	6.15	0.0020	-75	1.6 X 10 ⁹	3.1 X 10 ⁹	⁽²²⁾ 0.03
TMM SERIES	TMM® 3 Hydrocarbon Ceramic	3.27 ± 0.032	3.45	0.0020	+37	3 X 10 ⁹	9 x 10 ⁹	⁽¹⁰⁾ 0.06
	TMM 4 Hydrocarbon Ceramic	4.50 ± 0.045	4.7	0.0020	+15	6 X 10 ^{8*}	1 x 10 ⁹	⁽¹⁰⁾ 0.07
	TMM 6 Hydrocarbon Ceramic	6.00 ± 0.08	6.3	0.0023	-11	1 X 10 ^{8*}	1 x 10 ⁹	⁽¹⁰⁾ 0.06
	TMM 10 Hydrocarbon Ceramic	9.20 ± 0.23	9.8	0.0022	-38	2 X 10 ⁸	4 X 10 ⁷	⁽¹⁰⁾ 0.09
	TMM 10i Hydrocarbon Ceramic	9.80 ± 0.245	9.9	0.0020	-43	2 X 10 ⁸	4 X 10 ⁷	⁽¹⁰⁾ 0.16
	TMM 13i Hydrocarbon Ceramic	⁽¹⁴⁾ 12.85 ± 0.35	12.2	0.0019	-70	TBD	TBD	0.13
	ULTRALAM® 3850HT Liquid Crystalline Polymer	⁽¹⁸⁾ 2.90	3.14	0.0020	+24	1 x 10 ¹²	1 X 10 ¹⁰	0.04
XT/DUROID SERIES	XT/duroid® 8000 (PEEK)	⁽¹⁸⁾ 3.23	-	0.0035	+7	1 X 10 ¹⁰	1 X 10 ⁸	⁽¹²⁾ 0.20
	⁽¹⁵⁾ XT/duroid 8100 (PEEK) Woven Glass Reinforced 0.002" (0.0508mm) 0.004" (0.102mm)	⁽¹⁸⁾ 3.54 ± 0.05 3.32 ± 0.05	-	0.0049 0.0038	+9 +9	- 1 X 10 ¹⁰	- 1 X 10 ⁶	⁽¹²⁾ 0.15 0.32

Thermal Conductivity W/m ² K (Typical) 50° C ASTM D5470	Coefficient of Thermal Expansion ⁽⁶⁾ 0° to 100°C ppm/°C (Typical)			Peel Strength 1 oz (35µm) ED Foil lbs/in. (N/mm) (Typical)	Density gm/cm ³ (Typical)	Flammability Rating UL 94	Lead-Free ⁽⁹⁾ Process Compatible	PIM dBc Typical	Product	
	X	Y	Z							
0.33	54	47	40	>4.0	1.4	V-0	YES	-	RT/duroid® 5880LZ Filled PTFE Composite	RT/DUROID 5000
0.20	31	48	237	31.2 (5.5)	2.2	V-0	YES	-	RT/duroid 5880 PTFE Random Glass Fiber	
0.22	22	28	173	27.2 (4.8)	2.2	V-0	YES	-	RT/duroid 5870 PTFE Random Glass Fiber	
0.60	16	16	24	8.9 (1.6)	2.1	V-0	YES	-	RT/duroid 6002 PTFE Ceramic	RT/DUROID 6000
0.68	15	15	30	14.3 (2.5)	2.1	V-0	YES	-	RT/duroid 6202PR ⁽²⁰⁾ PTFE Ceramic Woven Glass Reinforced	
0.68	15	15	30	9.1 (1.6)	2.1	V-0	YES	-	RT/duroid 6202 PTFE Ceramic Woven Glass Reinforced	
1.44	⁽¹⁶⁾ 19	⁽¹⁶⁾ 19	⁽¹⁶⁾ 39	7.9 (1.4)	2.2	V-0	YES	-	RT/duroid 6035HTC PTFE Ceramic	
0.49	47	34	117	14.3 (2.5)	2.7	V-0	YES	-	RT/duroid 6006 PTFE Ceramic	
0.86	24	24	47	12.3 (2.1)	3.1	V-0	YES	-	RT/duroid 6010LM PTFE Ceramic	
1.00	7	7	23	7.0	2.3	V-0	YES	-	TC350™	TC SERIES
1.10	9	9	35	8.0	3.0	V-0	YES	-	TC600™	
0.70	15	15	23	5.7 (1.0)	1.8	NON FR	YES	-	TMM® 3 Hydrocarbon Ceramic	TMM SERIES
0.70	16	16	21	5.7 (1.0)	2.1	NON FR	YES	-	TMM 4 Hydrocarbon Ceramic	
0.72	18	18	26	5.7 (1.0)	2.4	NON FR	YES	-	TMM 6 Hydrocarbon Ceramic	
0.76	21	21	20	5 (0.9)	2.8	NON FR	YES	-	TMM 10 Hydrocarbon Ceramic	
0.76	19	19	20	5 (0.9)	2.8	NON FR	YES	-	TMM 10i Hydrocarbon Ceramic	
⁽¹⁷⁾ 0.76	19	19	20	4 (0.7)	3.0	NON FR	YES	-	TMM 13i Hydrocarbon Ceramic	
0.20	18	18	200	7.4 (1.3)	1.4	VTM-0	YES	-	ULTRALAM® 3850HT Liquid Crystalline Polymer	XT/DUROID SERIES
0.35	18	23	68	5.0 (0.88)	1.5	VTM-0	YES	-	XT/duroid® 8000 (PEEK)	
0.30 0.30	16.5 19	18 21	57 76	6.2 6.3	1.7 1.6	VTM-0	YES	-	⁽¹⁵⁾ XT/duroid 8100 (PEEK) Woven Glass Reinforced 0.002" (0.0508mm) 0.004" (0.102mm)	

BONDING MATERIALS

Product	Dielectric ⁽¹⁾ Constant, ϵ_r (Typical)	Dissipation ⁽¹⁾ Factor TAN δ @ 10 GHz (Typical)	Volume Resistivity Mohm \cdot cm (Typical)	Water ⁽⁴⁾ Absorption D48/50 % (Typical)	Thermal ⁽⁵⁾ Conductivity W/m ² K (Typical) 50°C ASTM D5470
2929 Bondply	2.94 \pm 0.05	0.0030	⁽²¹⁾ 7.4 X 10 ⁹	0.1	0.40
3001 Bonding Film	2.28	0.0030	1 X 10 ¹¹	0.05	0.22
CLTE-P™	2.94	0.0025	1.4 X 10 ⁸	0.04 ⁽²²⁾	0.50
COOLSPAN® TECA Thermoset Thermally & Electrically Conductive Adhesive (TECA) Film	N/A	N/A	3.8 X 10 ⁻¹⁰ (Conductive)	N/A	6.00
CuClad® 6250 Bonding Film	2.32	0.0013	1.0 X 10 ¹⁰	0.01 ⁽²²⁾	0.17
CuClad 6700 Bonding Film	2.35	0.0025	1.0 X 10 ¹²	0.01 ⁽²²⁾	0.17
R03003™ Ceramic PTFE Bondply	3.00 \pm 0.04	0.0010	1 X 10 ⁷	0.04	0.50
R03006™ Ceramic PTFE Bondply	6.15 \pm 0.15	0.0020	1 X 10 ⁵	0.02	0.79
R03010™ Ceramic PTFE Bondply	10.20 \pm 0.30	0.0022	1 X 10 ⁵	0.05	0.95
R04450B™ Hydrocarbon / Ceramic / Woven Glass / Prepreg	Thickness 0.0036"	3.30 \pm 0.05	0.0040	9.26 X 10 ⁷	0.09
	0.004"	3.54 \pm 0.05	0.0040	9.26 X 10 ⁷	0.08
R04450F™ Hydrocarbon / Ceramic / Woven Glass / Prepreg	3.52 \pm 0.05	0.0040	8.93 X 10 ⁸	0.07	0.65
RT/duroid® 6002 Ceramic PTFE Bondply	2.94 \pm 0.04	0.0012	1 X 10 ⁶	<0.10	0.60
ULTRALAM® 3908 LCP Bonding film	2.90	0.0025	2.6 X 10 ¹⁴	0.04	0.20

Properties Notes:

- (1) Measured by IPC-TM-650 method 2.5.5.5 @ ~10 GHz, 23°C. Materials were based on testing raw substrate material. ϵ_r values and tolerance reported by IPC-TM-650 method 2.5.5.5 are the basis for quality acceptance, but for some products these values may be incorrect for design engineering applications, especially those in microstrip. We recommend that prototype boards of a new design be verified for electrical performance.
- (2) Measured by IPC-TM-650 method 2.5.5.5 at ~10GHz modified.
- (3) Typical values are mean values derived from populations of measurements involving multiple lots of the specific foil type.
- (4) Measured after 48 \pm 1 hours immersion at 50 \pm 1°C in accordance with the ASTM D570 standard.
- (5) Tested by ASTM C518.
- (6) Tested by ASTM D3386-94. Values are average over temperature range but not necessarily linear. However for RT/duroid 6002 and TMM grades the response is essentially linear.
- (7) The nominal dielectric constant of an 0.060" thick R03003/R03203 laminate as measured by IPC-TM-2.5.5.5 will be 3.04 due to the elimination of biasing caused by air gaps in the test fixture. For further information refer to Rogers' T.R. 5242.
- (8) Due to construction limitations, the dielectric constant of 0.005" laminates is 3.06 \pm 0.04; 0.010" and 0.015" laminates are 3.02 \pm 0.04; TCDK is +5 for the higher Dk range; and for 2.90 TCDK is -15
- (9) Rogers' high frequency laminates and prepregs are lead-free process compatible and in accordance with IEC 61249-2-21.
- (10) TMM material test conditions D24/50 (twenty-four hours at 50°C) on 0.050" (1.27mm) thick specimens. TMM13i test condition D48/50.
- (11) Design Dk is determined by testing thick microstrip transmission line circuits and reporting the thickness-axis dielectric constant of the raw material without the influence of copper. For more information, refer to the article on the Rogers website titled "The Influence of Test Method, Conductor Profile, and Substrate Anisotropy on the Permittivity Values Required for Accurate Modeling of High Frequency Planar Circuits", which was featured in a publication Sept. 2012. <http://www.rogerscorp.com/acs/articles.aspx>
- (12) Testing conditions: 24 hours @ 23 C, specimens etched free of copper
- (13) Available only with LoPro® copper foil
- (14) Measured by IPC-TM-650 method 2.5.5.6.
- (15) XT/duroid material thicknesses tested were 0.002" and 0.004" except for 8100 volume and surface resistivity which 0.004" material was tested
- (16) Conditions were -55 to 288°C. Test Method ASTM D-3386
- (17) Estimated

Coefficient of Thermal Expansion ⁽⁶⁾ 0° - 100°C ppm/°C (Typical)			Density gm/cm ³ (Typical)	Flammability Rating UL 94	Lead-Free ⁽⁹⁾ Process Compatible	Product	
X	Y	Z					
50	50	50	1.50	NON-FR	YES	2929 Bondply	
-	-	-	2.10	-	NO	3001 Bonding Film	
10	12	35	2.38	V-0	YES	CLTE-P™	
45	45	45	4.60	NON-FR	YES	COOLSPAN® Thermally & Electrically Conductive Adhesive (TECA) Film	
-	-	-	0.93	-	NO	CuClad® 6250 Bonding Film	
-	-	-	2.10	-	NO	CuClad 6700 Bonding Film	
17	16	25	2.10	V-0	YES	R03003™ Ceramic PTFE Bondply	
17	17	24	2.60	V-0	YES	R03006™ Ceramic PTFE Bondply	
13	11	16	2.80	V-0	YES	R03010™ Ceramic PTFE Bondply	
19	17	60	1.80	V-0	YES	R04450B™ Hydrocarbon / Ceramic / Woven Glass / Prepreg	Thickness 0.0036"
19	17	50	1.86	V-0	YES		0.004"
19	17	50	1.83	V-0	YES	R04450F™ Hydrocarbon / Ceramic / Woven Glass / Prepreg	
16	16	24	2.10	V-0	YES	RT/duroid® 6002 Ceramic PTFE Bondply	
17	17	150	1.40	VTM-0	YES	ULTRALAM® 3908 LCP Bonding film	

Properties Notes Continued:

(18) IPC-TM-650.2.5.5.5.1

(19) Test method: ASTM D5470-12 @ 50°C

(20) PR stands for Planar Resistor. Resistive foil, if required, must be specified when ordering 6202PR laminate.

(21) Conditions 125°C/24 hours. Test method IPC-TM-650 2.5.17.1

(22) Measured after 24+½-0 hours immersion at 23±1°C in accordance with the ASTM D570 standard.

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

The information contained in this Product Selector Guide is intended to assist you in designing with Rogers' circuit materials. It is not intended to and does not create any warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose. The user should determine the suitability of Rogers' circuit materials for each application.

Prolonged exposure in an oxidative environment may cause changes to the dielectric properties of hydrocarbon based materials. The rate of change increases at higher temperatures and is highly dependent on the circuit design. Although Rogers' high frequency materials have been used successfully in innumerable applications and reports of oxidization resulting in performance problems are extremely rare, Rogers recommends the customer evaluate each material and design combination to determine fitness for use over the entire life of the end product.

Metal Claddings

Foil Type	Weight or Thickness	"Typical" Surface Roughness Rq (µm) ³⁾		Products
		Dielectric Side	Top Side	
Rolled	1 oz. (35 µm)	0.4	0.3	R03003™, R03006™, R03010™, R03035™, R03203™, R03206™, RT/duroid® 5870, 5880, 6002, 6202, 6006, 6010LM, DiClad®, CLTE™, CuClad®, IsoClad®
	½ oz. (18 µm)	0.4	0.3	
Electrodeposited	2 oz. (70 µm)	1.6	0.4	TC350™, TC600™
	1 oz. (35 µm)	1.5	0.4	
	½ oz. (18 µm)	1.6	0.4	
	2 oz. (70 µm)	3.0	0.4	
	1 oz. (35 µm)	1.7	0.4	DiClad®, CLTE™, CuClad®, IsoClad®, AD410™, AD430™, AD450™, AD600™, AD1000™
	½ oz. (18 µm)	1.5	0.4	
	2 oz. (70 µm)	3.3	0.4	AD250™, AD255™, AD260™, AD300™, AD320™, AD350™
	1 oz. (35 µm)	2.4	0.4	R03003, R03006, R03010, R03035, R03203, R03206, R03210 RT/duroid 5870, 5880, 6002, 6035HTC*, 6202, 6006, 6010LM, AD250™*, AD255™*, AD260™*, AD300™*, AD320™*, AD350™* TMM® 3, 4, 6, 10, 10i (*Not available with 1/4 oz. copper)
	½ oz. (18 µm)	2.0	0.4	
	¼ oz. (9 µm)	1.3	0.4	
	4 oz. (140 µm)	3.0	0.4	92ML Series™, 92ML™ StaCool™
	3 oz. (105 µm)	3.2	0.4	
	2 oz. (70 µm)	3.5	0.4	R04003C™, R04350B™, R04360G2™, R04533™, R04534™, R04350B-TX, 92ML Series™, 92ML StaCool™
	1 oz. (35 µm)	3.2	0.4	
½ oz. (18 µm)	2.8	0.4		
½ oz. (18 µm)	0.7	0.4		
Electrodeposited Low Profile Reverse Treated	½ oz. (18 µm)	TBD	0.4	ULTRALAM 3000, XT/duroid®
	¼ oz. (9 µm)	0.6	0.4	
	2 oz. (70 µm)	0.9	2.0	
	1 oz. (35 µm)	1.1	1.3	DiClad®, CLTE™, CuClad®, IsoClad®, AD410™, AD430™, AD450™, AD600™, AD1000™
	½ oz. (18 µm)	TBD	TBD	
	2 oz. (70 µm)	1.0	1.8	RT/duroid 6035HTC*, AD250™, AD255™, AD260™, AD300™, AD320™, AD350™, TC350, TC600 (*Not available with 2 oz. copper)
	1 oz. (35 µm)	1.0	1.5	
	½ oz. (18 µm)	0.9	1.0	
LoPro® Foil	1 oz. (35 µm)	0.9	1.3	R04003C, R04350B, R04533, R04534, R04535™, R04725JXR™, R04730JXR™, R04763™, R04835™
	½ oz. (18 µm)	0.9	0.8	
Resistive Foil	NiCr Ticer TCR® ½ oz. (18 µm)	0.9	0.4	DiClad®, CLTE™, CuClad®, IsoClad®
	NiCr Ticer TCR - HF ½ oz. (18 µm)	0.8	0.4	DiClad®, CLTE™, CuClad®, IsoClad®, R04003C, R04350B
	OhmegaPly® 25 ohms ½ oz. (18 µm)	1.7	0.4	R04003C
	OhmegaPly 25 ohms ½ oz. (18 µm)	1.2	0.4	R03003, R03006, R03010, R03035, R03203, R03206, R03210, RT/duroid 5870, 5880, 6002, 6202, 6006, 6010LM, DiClad®, CLTE™, CuClad®, IsoClad®

Plates	Alloy	Machinability	Density gm/cm ³	Thermal Conductivity W/m/°K	Coefficient of Thermal Expansion ppm/C
Aluminum	6061	Poor	2.7	150	24
Brass	70/30 Cartridge	Good	8.5	120	20
Copper	110	Fair to Good	8.9	390	17

Property	Electrodeposited (ED)				Rolled (RLD)		
	¼ oz (9 mm)	0.5 oz (18 mm)	1 oz. (35 mm)	2 oz (70 mm)	0.5 oz (18 mm)	1 oz. (35 mm)	2 oz. (70 mm)
Tensile Strength, kpsi	15	33	40	40	20	22	28
Elongation, %*	2	2	3	3	8	13	27
Vol Resistivity mohm • cm	-	1.66	1.62	1.62	1.78	1.74	1.74
Thickness: in (mm)	0.0004 (10.2)	0.0007 (17.8)	0.0014 (35.6)	0.0028 (71.1)	0.0007 (17.8)	0.0014 (35.6)	0.0028 (71.1)

Thickness, Tolerance & Panel Size inches (mm)

Laminates

Product	Standard Dielectric Thickness (Without The Cladding)	Available Claddings	Standard Panel Sizes
92ML™	0.003" (0.076mm) ± 0.0007" 0.004" (0.102mm) ± 0.0007" 0.006" (0.152mm) ± 0.0010" 0.008" (0.203mm) ± 0.0015"	1, 2, 3, 4 oz ED	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm)
92ML StaCool™	0.003" (0.076mm) ± 0.0007" 0.004" (0.102mm) ± 0.0007" 0.006" (0.152mm) ± 0.0010" 0.008" (0.203mm) ± 0.0015"	1, 2, 3, 4 oz ED 0.040", 0.059", 0.079" Thick Al - 5052 and 6061 alloys	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm)
AD250C™	0.020" (0.508mm) ± 0.0020" 0.030" (0.762mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030" 0.125" (3.175mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 48" X 54" (1220mm X 1372mm)
AD255C™	0.030" (0.762mm) ± 0.0020" 0.040" (1.016mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030" 0.125" (3.175mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 48" X 54" (1220mm X 1372mm)
AD260A™	0.030" (0.762mm) ± 0.0020" 0.040" (1.016mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030" 0.125" (3.175mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 48" X 54" (1220mm X 1372mm)
AD300C™	0.030" (0.762mm) ± 0.0020" 0.040" (1.016mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030" 0.120" (3.048mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 48" X 54" (1220mm X 1372mm)
AD320A™	0.030" (0.762mm) ± 0.0020" 0.041" (1.041mm) ± 0.0020" 0.062" (1.575mm) ± 0.0030" 0.120" (3.048mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 36" X 48" (914mm X 1220mm)
AD350A™	0.020" (0.508mm) ± 0.0015" 0.030" (0.762mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030" 0.120" (3.048mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 36" X 48" (914mm X 1220mm)
AD410™	0.030" (0.762mm) ± 0.0020" 0.062" (1.575mm) ± 0.0030" 0.125" (3.175mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 48" X 54" (914mm X 1220mm)
AD430™	0.030" (0.762mm) ± 0.0020" 0.050" (1.270mm) ± 0.0030" 0.125" (3.175mm) ± 0.0060"	1/2, 1 oz ED 1/2, 1, 2 oz RT	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 48" X 36" (1220mm X 914mm)
AD450™	0.020" (0.508mm) ± 0.0015" 0.030" (0.762mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030" 0.120" (3.048mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 48" X 36" (1220mm X 914mm)
AD600™	0.010" (0.254mm) ± 0.0010" 0.020" (0.508mm) ± 0.0015" 0.031" (0.787mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030" 0.125" (3.175mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm) 36" X 48" (914mm X 1220mm)
AD1000™	0.0105" (0.267mm) ± 0.0010" 0.020" (0.508mm) ± 0.0015" 0.030" (0.762mm) ± 0.0020" 0.059" (1.499mm) ± 0.0030" 0.120" (3.048mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT Thick metal Aluminum, Copper, Brass	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm) 36" X 48" (914mm X 1220mm)
CLTE-XT™	0.0051" (0.130mm) ± 0.0005" 0.0094" (0.239mm) ± 0.0007" 0.0145" (0.368mm) ± 0.0010" 0.020" (0.508mm) ± 0.0010" 0.030" (0.762mm) ± 0.0010" 0.060" (1.524mm) ± 0.0020" 0.120" (3.048mm) ± 0.0050"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT 1/2, 1 oz rolled 1/2, 1 oz Ohmega & Ticer resistive foil Thick metal Aluminum, Copper, Brass	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)
CLTE™	0.0053" (0.135mm) ± 0.0005" 0.010" (0.254mm) ± 0.0010" 0.015" (0.813mm) ± 0.0015" 0.020" (0.508mm) ± 0.0020" 0.024" (0.610mm) ± 0.0020" 0.030" (0.762mm) ± 0.0020" 0.060" (1.524mm) ± 0.0040" 0.125" (3.175mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT 1/2, 1 oz rolled 1/2, 1 oz Ohmega & Ticer resistive foil Thick metal Aluminum, Copper, Brass	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)

Thickness, Tolerance & Panel Size inches (mm)

Laminates

Product	Standard Dielectric Thickness (Without The Cladding)	Available Claddings	Standard Panel Sizes
CLTE-AT™	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0007" 0.015" (0.813mm) ± 0.0010" 0.020" (0.508mm) ± 0.0015" 0.030" (0.762mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030" 0.120" (3.048mm) ± 0.0060"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT 1/2, 1 oz rolled	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)
CuClad® 217	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0010" 0.020" (0.508mm) ± 0.0015" 0.031" (0.787mm) ± 0.0020" 0.060" (1.524mm) ± 0.0020" 0.125" (3.175mm) ± 0.0040"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT 1/2, 1 oz rolled 1/2, 1 oz Ohmega & Ticer resistive foil Thick metal Aluminum, Copper, Brass	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)
CuClad 233	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0010" 0.020" (0.508mm) ± 0.0015" 0.031" (0.787mm) ± 0.0020" 0.062" (1.575mm) ± 0.0020" 0.125" (3.175mm) ± 0.0040"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT 1/2, 1 oz rolled 1/2, 1 oz Ohmega & Ticer resistive foil Thick metal Aluminum, Copper, Brass	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)
CuClad 250	0.0053" (0.135mm) ± 0.0005" 0.010" (0.254mm) ± 0.0009" 0.020" (0.508mm) ± 0.0020" 0.031" (0.787mm) ± 0.0020" 0.062" (1.575mm) ± 0.0020" 0.125" (3.175mm) ± 0.0040"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT 1/2, 1 oz rolled 1/2, 1 oz Ohmega & Ticer resistive foil Thick metal Aluminum, Copper, Brass	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)
DiClad® 880	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0010" 0.020" (0.508mm) ± 0.0015" 0.030" (0.762mm) ± 0.0020" 0.060" (1.524mm) ± 0.0020" 0.125" (3.175mm) ± 0.0040"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT 1/2, 1 oz rolled 1/2, 1 oz Ohmega & Ticer resistive foil Thick metal Aluminum, Copper, Brass	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm) 36" X 48" (914mm X 1220mm)
DiClad 870	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0010" 0.020" (0.508mm) ± 0.0015" 0.030" (0.762mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030" 0.125" (3.175mm) ± 0.0040"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT 1/2, 1 oz rolled 1/2, 1 oz Ohmega & Ticer resistive foil Thick metal Aluminum, Copper, Brass	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm) 36" X 48" (914mm X 1220mm)
DiClad 527	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0010" 0.020" (0.508mm) ± 0.0020" 0.031" (0.787mm) ± 0.0020" 0.060" (1.524mm) ± 0.0020" 0.125" (3.175mm) ± 0.0050"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT 1/2, 1 oz rolled 1/2, 1 oz Ohmega & Ticer resistive foil Thick metal Aluminum, Copper, Brass	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm) 36" X 48" (914mm X 1220mm)
IsoClad® 917	0.005" (0.127mm) ± 0.0007" 0.010" (0.254mm) ± 0.0010" 0.020" (0.508mm) ± 0.0020" 0.031" (0.787mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT 1/2, 1 oz rolled 1/2, 1 oz Ohmega & Ticer resistive foil Thick metal Aluminum, Copper, Brass	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm)
IsoClad 933	0.005" (0.127mm) ± 0.0007" 0.010" (0.254mm) ± 0.0010" 0.020" (0.508mm) ± 0.0020" 0.031" (0.787mm) ± 0.0020" 0.060" (1.524mm) ± 0.0040"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT 1/2, 1 oz rolled 1/2, 1 oz Ohmega & Ticer resistive foil Thick metal Aluminum, Copper, Brass	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm)
RO3003™ RO3035™ RO3203™	0.005" (0.127mm) ± 0.0005" (RO3203 not available with 0.005" (0.127mm)) 0.010" (0.254mm) ± 0.0007" 0.020" (0.508mm) ± 0.001" 0.030" (0.762mm) ± 0.0015" 0.060" (1.524mm) ± 0.003" Additional non-standard thicknesses available between 0.005" and 0.250"	¼, ½, 1, 2 oz ED (9, 18, 35, 70µm ED) ½, 1, 2 oz Rolled Cu (18, 35, 70µm Rolled Cu) * Additional charges may apply for Rolled Cu ½ oz and 1oz Ohmega Resistive Foil 6 oz Rolled Cu also available with RO3003 5 mil laminates	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm)

Other dielectric thicknesses and panel sizes may be available. Contact customer service.

Thickness, Tolerance & Panel Size inches (mm)

Laminates

Product	Standard Dielectric Thickness (Without The Cladding)	Available Claddings	Standard Panel Sizes
RO3006™ RO3010™ *RO3206™ *RO3210™ *not available in 0.005"(0.127mm) and 0.010"(0.254mm)	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0007" 0.025" (0.635mm) ± 0.001" 0.050" (1.270mm) ± 0.002" Additional non-standard thicknesses available between 0.005" and 0.250"	½, 1, 2 oz ED (18, 35, 70µm ED) ½, 1, 2oz (18, 35, 70µm) Reverse Treat ½, 1oz (18, 35µm) Ohmega Resistive Foil	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm)
RO4725JXR™	0.0307" (0.780mm) ± 0.002" 0.0457" (1.161mm) ± 0.003" 0.0607" (1.542mm) ± 0.004"	½ oz (17µm), 1 oz (35µm) LoPro reverse treated ED foil	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 24" X 36" (610mm X 914mm) 48" X 36" (1220mm X 914mm) Larger sizes may be available upon request
RO4730JXR™ / RO4730G3™	0.0307" (0.780mm) ± 0.002" 0.0407" (1.034mm) ± 0.003" 0.0607" (1.542mm) ± 0.004"	½ oz (17µm), 1 oz (35µm) LoPro reverse treated ED foil	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 24" X 36" (610mm X 914mm) 48" X 36" (1220mm X 914mm) Larger sizes may be available upon request
RO4533™	0.030" (0.762mm) ± 0.002" 0.040" (1.016mm) ± 0.003" 0.060" (1.524mm) ± 0.004"	½, 1 oz ED (18, 35µm ED)	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 24" X 36" (610mm X 914mm) 48" X 36" (1220mm X 914mm)
	0.0307" (0.780mm) ± 0.002" 0.0407" (1.034mm) ± 0.003" 0.0607" (1.542mm) ± 0.004"	½, 1 oz. LoPro reverse treated ED foil (18, 35µm LoPro reverse treated ED foil)	
*RO4003C™ RO4360G2™	0.008" (0.203mm) ± 0.001" 0.012" (0.305mm) ± 0.001" 0.016" (0.406mm) ± 0.0015" 0.020" (0.508mm) ± 0.0015" 0.032" (0.813mm) ± 0.002" 0.060" (1.524mm) ± 0.004" *Non-standard thicknesses available in 4 mil increments starting from a 20 mil base	½, 1, 2 oz ED (18, 35, 70µm ED) *½, 1 oz. LoPro™ reverse treated ED foil (18, 35µm LoPro reverse treated ED foil) LoPro foil will add .0007" (0.0177mm) to the board thickness ½ oz Ohmega and Ticer Resistive Foil available on RO4003C	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 48" X 36" (1220mm X 914mm)
RO4350B™ / RO4835™	0.0040" (0.101mm) ± 0.0007" (RO4835 0.0040" available with LoPro foil only) 0.0066" (0.168mm) ± 0.0007" 0.010" (0.254mm) ± 0.001" 0.0133" (0.338mm) ± 0.0015" 0.0166" (0.422mm) ± 0.0015" 0.020" (0.508mm) ± 0.0015" 0.030" (0.762mm) ± 0.002" 0.060" (1.524mm) ± 0.004" *Non-standard thicknesses available in 3.3 mil increments starting from a 20 mil base	½, 1, 2 oz ED(18, 35, 70µm ED) ½, 1 oz. LoPro reverse treated ED foil (18, 35µm LoPro reverse treated ED foil) LoPro foil will add .0007" (0.0177mm) to the board thickness ½ oz Ticer Resistive Foil available	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 48" X 36" (1220mm X 914mm)
	0.0327" (0.831mm) ± 0.002" 0.0407" (1.034mm) ± 0.003" 0.0607" (1.542mm) ± 0.004"	½, 1 oz. LoPro reverse treated ED foil (18, 35µm LoPro reverse treated ED foil)	
RO4534™	0.032" (0.813mm) ± 0.002" 0.040" (1.016mm) ± 0.003" 0.060" (1.524mm) ± 0.004"	½, 1 oz ED (18, 35µm ED)	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 24" X 36" (610mm X 914mm) 48" X 36" (1220mm X 914mm)
	0.0327" (0.831mm) ± 0.002" 0.0407" (1.034mm) ± 0.003" 0.0607" (1.542mm) ± 0.004"	½, 1 oz. LoPro reverse treated ED foil (18, 35µm LoPro reverse treated ED foil)	
RO4535™	0.030" (0.762mm) ± 0.002" 0.040" (1.016mm) ± 0.003" 0.060" (1.524mm) ± 0.004"	½, 1 oz ED (18, 35µm ED)	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 24" X 36" (610mm X 914mm) 48" X 36" (1220mm X 914mm)
	0.0307" (0.780mm) ± 0.002" 0.0407" (1.034mm) ± 0.003" 0.0607" (1.542mm) ± 0.004"	½, 1 oz. LoPro reverse treated ED foil (18, 35µm LoPro reverse treated ED foil)	
RT/duroid 5880LZ	0.010" (0.254mm) ± 0.0010" 0.020" (0.508mm) ± 0.0010" 0.025" (0.635mm) ± 0.0020" 0.030" (0.762mm) ± 0.0020" 0.040" (1.016mm) ± 0.0020" 0.050" (1.270mm) ± 0.0030" 0.100" (2.540mm) ± 0.0050" Non-standard thicknesses available	½, 1 oz (18, 35µm) ED	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) Non-Standard size available up to 24" X 54" (610mm X 1372mm)

Thickness, Tolerance & Panel Size inches (mm)

Laminates

Product	Standard Dielectric Thickness (Without The Cladding)	Available Claddings	Standard Panel Sizes
RT/duroid® 5870 RT/duroid 5880	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0007" 0.015" (0.381mm) ± 0.0010" 0.020" (0.508mm) ± 0.0010" 0.031" (0.787mm) ± 0.0010" 0.062" (1.575mm) ± 0.0020" 0.125" (3.175mm) ± 0.0040" Non-Standard thicknesses available	¼", ½, 1, 2* oz (9, 18, 35, 70µm) ED ½, 1, 2* oz (18, 35, 70µm) Rolled Copper ½, 1, 2* oz (18, 35, 70µm) Reverse Treated ½, 1 oz (18, 35µm) Ohmega resistive foil Thick metal Aluminum, Copper, Brass * Note: Please check with Rogers' Representative to confirm availability.	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm) Non-Standard size available up to 18" X 48" (457mm X 1219mm)
RT/duroid 6002	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0007" 0.020" (0.508mm) ± 0.0010" 0.030" (0.762mm) ± 0.0015" 0.060" (1.524mm) ± 0.0020" 0.120" (3.048mm) ± 0.0060"	¼", ½, 1, 2* oz (9, 18, 35, 70µm) ED ½, 1, 2* oz (18, 35, 70µm) Rolled Copper ½, 1 oz (18, 35µm) Ohmega resistive foil ½, 1, 2* oz (18, 35, 70µm) Reverse Treated Thick metal Aluminum, Copper, Brass - 6002 only * Note: Please check with Rogers' Representative to confirm availability.	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm) Non-Standard size available up to 24" X 54" (610mm X 1372mm)
RT/duroid 6202	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0007" 0.015" (0.381mm) ± 0.0010" 0.020" (0.508mm) ± 0.0010" 0.030" (0.762mm) ± 0.0010" 0.060" (1.524mm) ± 0.0020"	* Note: Please check with Rogers' Representative to confirm availability.	
RT/duroid 6202PR	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0007" 0.015" (0.381mm) ± 0.0010" 0.020" (0.508mm) ± 0.0010"	¼", ½, 1, 2* oz (18, 35, 70µm) ED ½, 1, 2* oz (18, 35, 70µm) Reverse Treated ½, 1, 2* oz (18, 35, 70µm) Rolled Copper ½, 1 oz (18, 35µm) Ohmega-ply® resistive foil * Note: Please check with Rogers' Representative to confirm availability.	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) Non-Standard size available up to 24" X 54" (610mm X 1372mm)
RT/duroid 6035HTC	0.010" (0.254mm) ± 0.0007" 0.020" (0.508mm) ± 0.001" 0.030" (0.762mm) ± 0.0015" 0.060" (1.524mm) ± 0.003"	½, 1, 2 oz (18, 35, 70µm) ED ½, 1 oz (18, 35µm) Reverse Treated	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm)
RT/duroid 6010LM	0.005" (0.127mm) ± 0.0005" 0.010" (0.254mm) ± 0.0010" 0.025" (0.635mm) ± 0.0010" 0.050" (1.270mm) ± 0.0020" 0.075" (1.905mm) ± 0.0040" 0.100" (2.540mm) ± 0.0050"	¼", ½, 1, 2* oz (18, 35, 70µm) ED ½, 1, 2* oz (18, 35, 70µm) Reverse Treated ½, 1 oz (18, 35µm) Ohmega resistive foil Thick metal Aluminum, Copper, Brass * Note: Please check with Rogers' Representative to confirm availability.	10" X 10" (254mm X 254mm) 10" X 20" (254mm X 508mm) 18" X 12" (457mm X 305mm) Available in 0.025" Dielectric Thickness Increments Only 18" X 24" (457 X 610mm) - Non-Standard not available in 0.005" (0.127mm) and 0.010" (0.254mm)
TC350™	0.010" (0.254mm) ± 0.0007" 0.020" (0.508mm) ± 0.0015" 0.030" (0.762mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm)
TC600™	0.010" (0.254mm) ± 0.0007" 0.020" (0.508mm) ± 0.0015" 0.030" (0.762mm) ± 0.0020" 0.060" (1.524mm) ± 0.0030"	1/2, 1, 2 oz ED 1/2, 1, 2 oz RT	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)
TMM® 3 TMM 4 TMM 6 TMM 10 TMM 10i TMM 13i	0.015" (0.381mm) ± 0.0015" 0.020" (0.508mm) ± 0.0015" 0.025" (0.635mm) ± 0.0015" 0.030" (0.762mm) ± 0.0015" 0.050" (1.270mm) ± 0.0015" 0.060" (1.524mm) ± 0.0015" 0.075" (1.905mm) ± 0.0015" 0.100" (2.540mm) ± 0.0015" 0.125" (3.175mm) ± 0.0015" 0.150" (3.810mm) ± 0.0015" 0.200" (5.080mm) ± 0.0015" 0.250" (6.350mm) ± 0.0015" 0.275" (6.985mm) ± 0.0015" 0.300" (7.620mm) ± 0.0015" 0.500" (12.70mm) ± 0.0015" Non-Standard thicknesses available	½, 1, 2 oz (18, 35, 70µm) ED Thick metal Aluminum & Brass	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)

Thickness, Tolerance & Panel Size inches (mm)

Laminates

Product	Standard Dielectric Thickness (Without The Cladding)	Available Claddings	Standard Panel Sizes
ULTRALAM® 3850HT	0.001" (0.025mm) ± 15% 0.002" (0.050mm) ± 12.5% 0.004" (0.100mm) ± 10% 0.007" (0.175mm) ± 10%	¼, ½ oz (9, 18µm) very low profile Reverse Treated ED foil	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)
XT/duroid® 8000 XT/duroid 8100	0.002" (0.051mm) ± 12.5% 0.002" (0.051mm) ± 12.5% 0.004" (0.102mm) ± 12.5%	½ (18µm) very low profile Reverse Treated ED foil	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)

Thickness, Tolerance & Panel Size inches (mm)

Bonding Materials

Product	Standard Dielectric Thickness (Without The Cladding)	Available Claddings	Standard Panel Sizes
2929 Thermoset Bondply	0.0015" (0.038mm) 0.0020" (0.051mm) 0.0030" (0.076mm)	N/A	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)
3001 Thermoplastic Bonding Film	.0015" (0.038mm)	N/A	12" X 50' Roll (304mm X 15.24m)
CLTE-P™ Thermoplastic	0.0024" (0.061mm)	N/A	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm)
COOLSPAN® TECA Thermoset Thermally & Electrically Conductive Adhesive (TECA) Film	0.002" (0.051mm) ± 0.0005" 0.004" (0.102mm) ± 0.0005"	N/A	10" X 12" (254mm X 305mm)
CuClad® 6250 Thermoplastic Bonding Film	0.0015" (0.038mm)	N/A	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 24" X 30' Roll (610mm X 9.144m)
CuClad 6700 Thermoplastic Bonding Film	0.0015" (0.038mm) 0.0030" (0.076mm)	N/A	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 24" X 30' Roll (610mm X 9.144m)
R03003™, R03006™, R03010™ Bondply Thermoplastic - Ceramic PTFE Bondply	.005" (0.127mm)	N/A	25.5" X 18" (648mm X 457mm)
R04450B™ Thermoset - Hydrocarbon / Ceramic / Woven Glass / Prepreg	.0036" (0.091mm) .004" (0.102mm)	N/A	12" X 18" (305mm X 457mm) 24" X 18" (610mm X 457mm) 48" X 36" (1220mm X 914mm)
R04450F™ Thermoset - Hydrocarbon / Ceramic / Woven Glass / Prepreg	.004" (0.102mm)	N/A	
RT/duroid® 6002 Thermoset - Ceramic PTFE Bondply	0.0025" (0.064mm)	N/A	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)
ULTRALAM® 3908 Thermoplastic - LCP Bonding film	.001" (0.025mm) .002" (0.051mm)	N/A	18" X 12" (457mm X 305mm) 18" X 24" (457mm X 610mm)

Ordering Materials From Rogers Advanced Connectivity Solutions:

Rogers Corporation has global customer service locations to assist with the order process. Please see the back of the guide to determine which office in the Americas, Europe or Asia is most convenient for you.

The following represents a typical process for determining a material to purchase and placing an order:

Step 1

Determining the ACS Material Product Grade to Use

Rogers Advanced Connectivity Solutions provides a wide range of specialty material types (PTFE, hydrocarbon ceramic, LCP, etc.) to offer unique combinations of electrical, thermal and mechanical properties. Performance requirements usually determine which ACS Product Grade best suits the application. For example, if requirements point to material with the lowest dissipation factor (tan d) combined with a high dielectric constant, that may lead to one of our PTFE offerings. In another example mechanical strength may be required, pointing to a thermoset product, such as RO4000® laminate.

Common examples of ACS product grades include: RT/duroid® 5880, CLTE-XT™, RO4350B™, RO3003™, AD300C™, TMM® and ULTRALAM® 3000. It is critical to pick the correct material grade when you order. Our technical experts are happy to assist you in making that determination.

Step 2

Choosing Thickness and Thickness Tolerance

Following IPC guidelines, laminate thickness is specified as dielectric thickness and does not include thickness of copper foil or other metal claddings. In most cases, thickness tolerance is defined by product grade and thickness. However, custom tolerances are considered upon request for certain high reliability products (RT/duroid and CLTE Series™ laminates are examples).

Special charges may apply for customers requesting non-standard thicknesses or tolerances. Please see pages 14-19 for a list of standard panel sizes and thicknesses by product grade.

Step 3

Selecting Cladding Type

Rogers offers cladding options which include ¼, ½, 1, & 2 oz. electrodeposited copper foil; ½, 1, & 2 oz. reverse treated copper foil; and ½, 1, & 2 oz. rolled copper foil. Not all laminate systems are available with all copper foil claddings. For example, TMM and RO4000 series laminates are not supplied with ¼ oz. electrodeposited foil or rolled copper foil.

Thick metal claddings such as aluminum, copper and brass are available on Rogers RT/duroid, CLTE™, DiClad®, CuClad® and IsoClad® laminates and may be based on dielectric thickness. Thick aluminum, copper, and brass claddings are also available in a range of thicknesses and thickness tolerances. Thick aluminum and brass claddings are available on most TMM laminates. Please note, thick metal cladding is not available on RO4000 laminates.

Some material grades may be supplied unclad. Call Rogers' Customer Service Representatives to discuss options.

Step 4

Picking your Panel Size*

Finally, you need to select the panel size dimensions you desire. For example, a very common panel size in the printed circuit board industry is 24" (610mm) x 18" (457mm).

Please note, different product grades may have different standard panel sizes due to unique manufacturing processes. Special charges typically apply for non-standard panel sizes. Please see pages 14-19 for a list of standard panel sizes and thicknesses by product grade.

*Various terminology is used in the industry to represent panel dimensions. Rogers' panel dimensions are always listed as: Cross machine(Y) x Machine direction(X).

Specification Requirements and Terms and Conditions of Sale

Rogers material specifications are applicable unless otherwise agreed upon prior to order. Certificates of conformance are available for purchased goods. All other requirements must be discussed at the time the order is placed. If special testing or data generation is required, additional costs may be incurred.




For Rogers Terms and Conditions of Sale, please go to:
www.rogerscorp.com/pages/termsconditions.aspx

About Advanced Connectivity Solutions

Advanced Connectivity Solutions manufactures high frequency laminates and prepregs for applications in wireless base station, aerospace and defense, automotive, high-speed digital and advanced chip packaging industries. All of our products are manufactured in ISO-9001:2008 certified facilities.

IPC Slash Sheet Definitions

Product	Legacy 4103/	4103A/
RO4003C	10	240
RO4350B	11	240
RO4835	11	240
RO4360G2	NA	270
RO4533	10	240
RO4534	10	240
RO4535	11	240
RO4725JXR	NA	220
RO4730JXR	NA	230
RO4450B	11	540
RO4450F	11	540



Rogers' high frequency laminates can be purchased by contacting a Rogers' Customer Service Representative. Refer to back cover for contact information.

Interpreting Rogers Part Descriptions:

5880

18x12

H2/H2

R3

0200+-001

DI

OV

Product Grade

Panel Size

Metal Cladding

Revision Number
(When Applicable)

Dielectric Thickness & Tolerance

Dielectric Thickness
(When Applicable)

May See OV Which
Stands For Overall
Thickness
(When Applicable)

ROGERS Copper Foil Designation

Copper Weight	Rogers Clad Designation	IPC-4562A							
		Foil Grade (1.2.4)	Foil Thickness (1.2.5)	Bond Enhancement Treatment (1.2.6)	Foil Profile (1.2.7)				
1/4 oz	HQ	Standard Electrodeposited (STD-E)	Q (9 µm)	Single-sided treatment (S)	Low (L)				
	CQ				Very low (V)				
1/2 oz	5E	High Temperature Elongation Electrodeposited (HTE-E)	H (1/2 oz, 18 µm)	S	Standard (S)				
	5ED				L				
	5E					Reverse-treated (R) LoPro R			
	5ED				V				
	HH					S			
	5TC						S		
	SH	S-25 OPS Omega							
	AH		S-50 OPS Omega						
	5R			S-100 OPS Omega					
	5RD				S-25 OPS Ticer				
	25RFO(1)(2)-5E(D)					S-50 OPS Ticer			
	50RFO(1)(2)-5E(D)						S-100 OPS Ticer		
100RFO(1)(2)-5E(D)	S								
25RFT(3)(4)-5E(D)		S							
50RFT(3)(4)-5E(D)			S						
100RFT(3)(4)-5E(D)				S					
1 oz					1E	HTE-E		1 (1 oz, 35 µm)	S
					1ED		L		
	1E				R-LoPro R				
	1ED	V							
	H1		S						
	1TC			S-25 OPS Omega					
	S1				S-50 OPS Omega				
	A1					S-100 OPS Omega			
	1R						S-25 OPS Ticer		
	1RD	S-50 OPS Ticer							
	25RFO(1)(2)-1E(D)		S-100 OPS Ticer						
	50RFO(1)(2)-1E(D)			S					
100RFO(1)(2)-1E(D)	S								
25RFT(3)(4)-1E(D)					S				
50RFT(3)(4)-1E(D)						S			
100RFT(3)(4)-1E(D)		S							
2 oz			2E				HTE-E	2 (2 oz, 70 µm)	S
			2ED	L					
	H2		R						
	S2			V					
	A2		S						
	2R	S							
2RD	S								

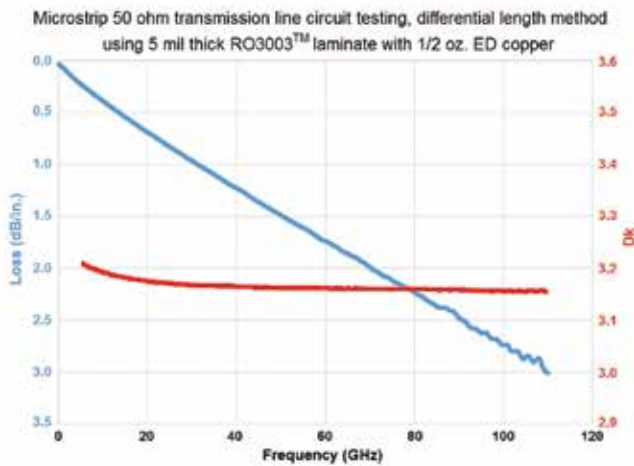




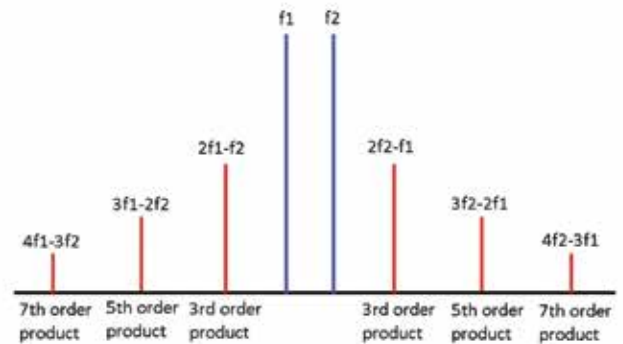
Electrical Characterization Capabilities

Multiple Test Methods Used:

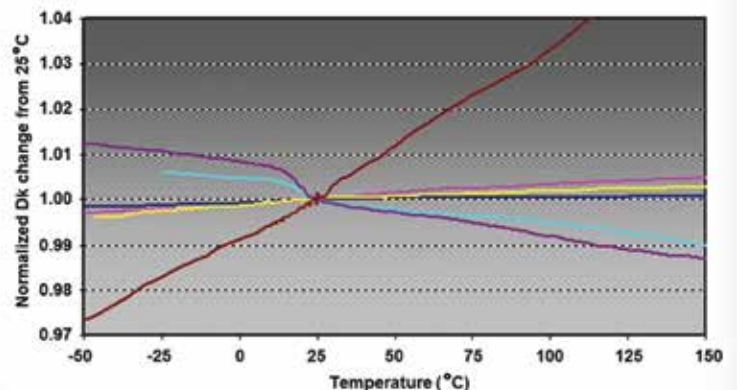
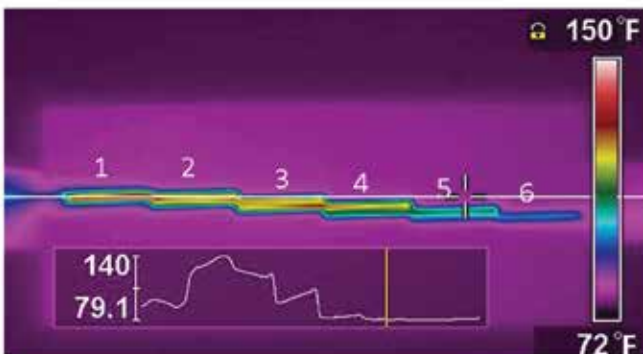
- Clamped Stripline Resonator
- Split Post Dielectric Resonator
- Full Sheet Resonance
- Ring Resonators
- Waveguide Perturbation



Very wideband insertion loss & phase measurements



PIM Testing Capabilities



Circuit Materials:

- RO3003™
- RO4003™
- RO4835™
- PTFE / WG
- Epoxy / WG
- PTFE / Ceramic / WG

ROGERS cares



As part of our ROGERS Cares initiative, we aim to show you how Rogers is making a difference in our world. Here at Rogers, we are powering, protecting, and connecting our world. This is how.

Environmental Protection:

We are committed to compliance with regulations. We are consistently looking for ways to make the work we do safer and better for the environment.



Employee Safety:

Workplace safety and employee health is a priority. Production is shut down immediately if something is unsafe. The priority always is for employees to go home in the same condition they arrived to work.



Social Consciousness

& Community Participation:

We know that a company can have an impact not only on the environment, but in the community in which it operates as well. Being a socially responsible company is important, and our collaborative culture encourages employee involvement. Being involved in the community is an integral part of life at Rogers. There are numerous ways employees can get involved.



Join Our Technology Support Hub Today & Access Online Tools:

- Calculators
- Video Library
- Literature
- Material Sample Requests
- Technical Papers
- Ask an Engineer... Much More!

www.rogerscorp.com/techub



Contact Information:

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 Fax: 480-961-4533

Europe/Africa: Rogers BVBA
 Tel: 32-9-2353611
 Fax: 32-9-2353658

Asia: Rogers Suzhou
 Tel: 86-21-6217-5599
 Fax: 86-512-6258-2868

The information contained in this product selector guide is intended to assist you in designing with Rogers' circuit materials. It is not intended to and does not create any warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose. The user should determine the suitability of Rogers' circuit materials for each application.

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92ML, 92ML StaCool, ML Series, CuClad, DiClad, IsoClad, AD250C, AD255C, AD260A, AD300C, AD350A, AD410, AD430, AD450, AD600, AD1000, AD Series, CLTE-AT, CLTE-P, CLTE-XT, CLTE Series, COOLSPAN, RO3003, RO3006, RO3010, RO3203, RO3206, RO3210, RO3000, RO4003C, RO4350B, RO4360G2, RO4450B, RO4450F, RO4533, RO4534, RO4535, RO4725JXR, RO4730JXR, RO4730G3, RO4835, RO4000, RT/duroid, TC350, TC600, TC Series, TMM, ULTRALAM, XT/duroid, the Rogers' logo and Helping Power, Protect, Connect our World. are trademarks of Rogers Corporation or one of its subsidiaries. © 2016 All Rights Reserved. Printed in USA. Revised 08/2016 100-1246 Publication #92-601