ROGERS CORPORATION

XtremeSpeed™ RO1200™ Series Circuit Materials

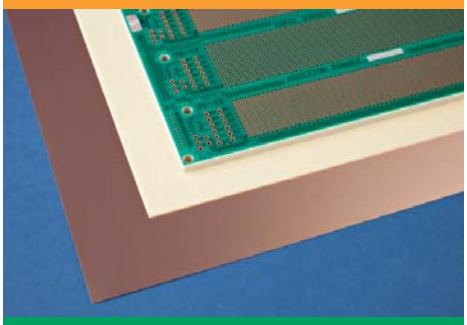
Extremely Low Loss Digital Circuit Laminates

XtremeSpeed™ RO1200™ extremely low loss digital circuit materials are ceramic-filled laminates reinforced with woven fiberglass. These materials are engineered to offer exceptional electrical performance and mechanical stability for the most demanding high speed applications.

XtremeSpeed RO1200 series laminates combine the surface smoothness of a non-woven PTFE laminate, for finer line etching tolerances, with the rigidity of a woven-glass PTFE laminate. These materials can be fabricated into printed circuit boards using standard PTFE circuit board processing techniques as described in the application note, XtremeSpeed RO1200 Extremely Low Loss Digital Laminate Quick Reference Processing Guide.

XtremeSpeed RO1200 series laminates are manufactured under an ISO 9001 certified quality system.

Data Sheet



Features and Benefits:

Superior signal integrity
- Low dielectric constant
- Low dissipation factor
- Low profile copper for reduced insertion loss

Excellent thermal/mechanical performance characteristics
- Ideal for high layer count structures
- Suitable for lead free processing
- Td: 500ºC (TGA)
- Low CTE

Woven glass reinforcement
- Improved rigidity for ease of handling
- Spread glass for reduced signal skew

Typical Applications:

- Core/edge IP routers and switches
- High performance computing (HPC) servers, switching and storage
- Backplanes
- Automated test equipment (ATE)

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Data Sheet

Property	Typical Value RO1200	Direction	Unit	Condition	Test Method
Dielectric Constant, Process	3.05	Z		10 GHz 23ºC	IPC-TM-650 2.5.5.5
Dielectric Constant, Design [1]	TBD	Z		1 GHz - 20 GHz	Differential Phase Length Method
Dissipation Factor, tan δ	0.0017 Max	Z		10 GHz 23ºC	IPC-TM-650 2.5.5.5
Dimensional Stability	0.22	X,Y	mil/inch	after etch +E/150	IPC-TM-650 2.4.39
Volume Resistivity	1.3×10^7	Z	MΩ•cm	C-96/35/90	IPC-TM-650 2.5.17.1
Surface Resistivity	2.5×10^6	Z	MΩ	C-96/35/90	IPC-TM-650 2.5.17.1
Dielectric Strength	630		V/mil		IPC-TM-650 2.5.6.2
Moisture Absorption	0.03		%	E-1/105+D-48/50	IPC-TM-650 2.6.2.1
Specific Heat	0.93 (0.22)		J/g/K (BTU/lb/ºF)		Calculated
Thermal Conductivity	0.42	Z	W/mK		ASTM D5470
Coefficient of Thermal Expansion	8	X,Y	ppm/ºC	-55ºC to 288ºC	IPC-TM-650 2.4.41
	30	Z			IPC-TM-650 2.4.24
Time to Delamination	>60		Minutes	260ºC	IPC-TM-650 2.4.24.1
	>60			288ºC	
Td	500		ºC	TGA	IPC-TM-650 2.4.24.6
Density	2.1		g/cm^3	C-24/23/50	ASTM D792
Copper Peel Strength	>4.5		lbs/in	1 oz ED Foil	IPC-TM-650 2.4.8
Flammability	V-0				UL 94
Lead Free Process Compatible	YES				

NOTE:
[1] The design Dk is an average number from several different tested lots of material and on the most common thickness/s. If more detailed information is required please contact Rogers Corporation or refer to Roger's technical reports on the Rogers Technology Suppor

Standard Thickness		Standard Panel Size	Standard Copper Cladding
0.003" (0.076mm) 0.004" (0.102mm) 0.005" (0.127mm) 0.006" (0.152mm)	0.007" (0.178mm) 0.008" (0.203mm) 0.010" (0.254mm)	12" X 18" (305 X 457mm) 24" X 18" (610 X 457mm) Additional panel sizes available upon request	½ oz. (17µm) RA copper foil (AH) 1 oz. (35µm) RA copper foil (A1) 2 oz. (70µm) ED (H2) & RT copper foil (S2)

The information in this data sheet 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 or that the results shown on this data sheet will be achieved by a user for a particular purpose. The user should determine the suitability of Rogers' circuit materials for each application.