ROGERS CORPORATION
Advanced Circuit Materials

Advanced Circuit Materials Division
100 S. Roosevelt Avenue
Chandler, AZ 85226
Tel: 480-961-1382, Fax: 480-961-4533
www.rogerscorp.com

Data Sheet
XT/duroid 8000

XT/duroid™ 8000 High Frequency Circuit Materials

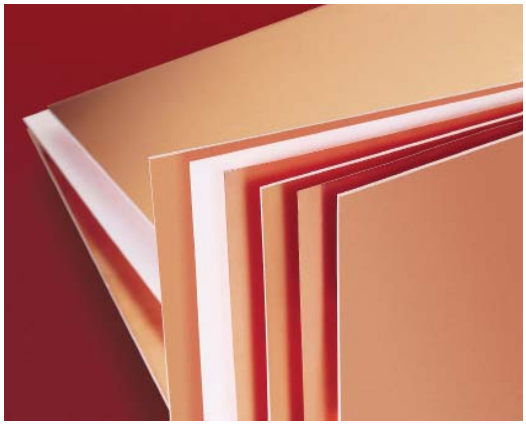
Features:	Benefits:
Stable dielectric constant and dissipation factor over a wide frequency range	• High reliability • Uniform electrical properties over frequency
High maximum operating temperature	• Can be used in applications where high temperature stability is necessary
Excellent chemical resistance	• Ease of processing • Resistant to solvents and reagents used to process circuit boards • Operates in harsh chemical environments
Environmentally friendly	• Halogen free/inherently flame retardant • Lead-free solder capable • Low smoke/toxicity

Typical Applications:	
• Flex-to-install applications	• Conformal circuitry
• Lightweight feed manifolds	• Oil and gas exploration
• Semiconductor burn-in	• Chip packaging substrates

XT/duroid™ 8000 thermoplastic circuit materials provide an excellent solution for printed circuit board applications used in demanding environmental conditions.

XT/duroid 8000 circuit materials are excellent for high frequency/high speed applications. Both dielectric constant and dissipation factor are stable over a wide range of frequencies.

XT/duroid 8000 is thermally stable, with a melt temperature higher than PTFE materials and an estimated relative thermal index (RTI) greater than 210°C (410°F). The XT/duroid products possess impressive chemical and radiation resistance. These lead-free solder capable laminates are green materials which are naturally flame retardant and halogen free.



Dielectric thickness of 0.002" (0.0508mm) is available with ½ oz very low profile electrodeposited copper foil cladding.

Property		Typical 8000	Direction	Units	Condition	Test Method
Dielectric Constant, ε_r		3.23± 0.05	Z		10 GHz/23°C	IPC-TM-650, 2.5.5.5.1
Dissipation Factor, Tan δ		0.0035 max.	Z		10 GHz/23°C	IPC-TM-650, 2.5.5.5.1
Thermal Coefficient of ε_r		+7		ppm/°C	-50 to 150°C	IPC-TM-650, 2.5.5.5.1
Copper Peel Strength		5.0		pli		IPC-TM-650, 2.4.8
Low Outgassing	TML	0.09		%		ASTM E-595
	CVCM	0.01				
	WVR	0.09				
T260		Pass				
T288		Pass				
Flammability*		VTM-O				UL94
UL RTI*		>200		°C		
Dielectric Strength		4500		VPM		IPC-TM-650 2.5.6.2
Coefficient of Thermal Expansion		18 23 68	X Y Z	ppm/*C	0 - 150*C	IPC-TM-650 2.1.41
Dimensional Stability		-0.04 -0.1	MD CMD	%	After bake @ 120°C	IPC-TM-650 2.2.4
Tensile Strength		100		MPa		ASTM D-638
Elongation		4		%		ASTM D-638
Young's Modulus		1200 (8600)		kpsi (MPa)		ASTM D-638
Moisture Absorption		0.2		%	D24/23	IPC-TM-650, 2.6.2.1
Specific Gravity		1.55				ASTM D-792
Surface Resistivity		10^8		Megohms	A and C96/35/90	IPC-TM-650, 2.5.17.1
Volume Resistivity		10^{10}		Megohm-cm	A and C96/35/90	IPC-TM-650, 2.5.17.1
Thermal Conductivity		0.35		W/m/°K		ASTM C-518
Halogen Free		Yes				
Lead-Free Process Compatible		Yes				

* Reported UL values are preliminary and reflect anticipated results of full UL testing.

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

Standard Thicknesses:	Panel Sizes	Copper Cladding
0.002" (0.0508) ± 12.5%	12" X 18" (305 X 457mm) 24" X 18" (610 X 457 mm) Other panel sizes and rolls are available	½ oz. (18 μm) very low profile electrode-posited copper foil.

The information in this data sheet is intended to assist you in designing with Rogers' circuit material laminates. 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 material laminates for each application.

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