ROGERS CORPORATION

Data Sheet

XT/duroid® 8000

High Frequency Circuit Materials

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. 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.

Features and 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

Some Typical Applications:

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

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

ROGERS CORPORATION

Data Sheet

PROPERTIES		TYPICAL VALUE XT/duroid 8000	DIRECTION	UNITS	CONDITIONS	TEST METHOD
Dielectric Constant, ε_r		3.23± 0.05	Z		10 GHz/23ºC	IPC-TM-650, 2.5.5.5.1
Dissipation Factor, Tan δ		0.0035 max.	Z		10 GHz/23ºC	IPC-TM-650, 2.5.5.5.1
Thermal Coefficient of ε_r		+7		ppm/ºC	-50 to 150ºC	IPC-TM-650, 2.5.5.5.1
Copper Peel Strength		5.0 (0.88)		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-0				UL94
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 @ 120ºC	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/ºK		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 mm) very low profile electrodeposited copper foil.

Revised 1115 040715 Publication #92-145