

RT/duroid® 6202 High Frequency Laminates

Features:

- Low loss for excellent high frequency performance.
- Tight ϵ_r and thickness control.
- Excellent electrical and mechanical properties.
- Extremely low thermal coefficient of dielectric constant.
- In-plane expansion coefficient matched to copper.
- Very low etch shrinkage.

Some Typical Applications:

- Phase Array Antennas
- Ground Based and Airborne Radar Systems
- Global Positioning System Antennas
- Power Backplanes
- High Reliability Complex Multilayer Circuits
- Commercial Airline Collision Avoidance Systems
- Beam Forming Networks

RT/duroid® 6202 high frequency circuit material is a low loss and low dielectric constant laminate offering superior electrical and mechanical properties essential in designing complex microwave structures which are mechanically reliable and electrically stable.

Excellent dimensional stability (0.05 to 0.07 mils/inch) is achieved by the addition of limited woven glass reinforcement. This often eliminates double etching to achieve tight positional tolerances.

¼ oz. to 2 oz./ft.² electrodeposited copper foil may be specified as cladding on dielectric thicknesses from 0.005" to 0.060" (0.13 to 1.52 mm).

Applications particularly suited to the unique properties of RT/duroid 6202 material include flat and non-planar structures such as antennas and complex multilayer circuits with interlayer connections.



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.

Typical Values

RT/duroid® 6202 Laminates

PROPERTY	VALUE	DIRECTION	UNITS ^[1]	CONDITION ^[2]	TEST METHOD
Dielectric Constant, ϵ_r	2.94±0.04 ^[3]	Z		10 GHz/23°C	IPC-TM-650, 2.5.5.5
Dissipation Factor, δ	0.0015	Z		10 GHz/23°C	IPC-TM-650, 2.5.5.5
Thermal Coefficient of ϵ_r	+13**		ppm/°C	10 GHz/1-100°C	IPC-TM-650, 2.5.5.6
Volume Resistivity	10 ¹⁰	Z	Mohm Cm	A	ASTM D257
Surface Resistivity	10 ⁹	X,Y,Z	Mohm	A	ASTM D257
Tensile Modulus	1007 (146)	X,Y	MPa (kpsi)	23°C	ASTM D638
Ultimate Stress	30 (4.3)	X,Y	MPa (kpsi)		
Ultimate Strain	4.9	X,Y	%		
Compressive Modulus	1035 (150)	Z	MPa (kpsi)	-	ASTM D638
Moisture Absorption	0.1	-	%	D24/23	IPC-TM-650, 2.6.2.1
Thermal Conductivity	0.68	-	W/m/K	80°C	ASTM C518
Coefficient of Thermal Expansion	15 30	X,Y Z	ppm/°C	(10K/min)	ASTM D3386
Td	500		°C TGA		ASTM D3850
Density	2.1		gm/cm ³		ASTM D792
Specific Heat	0.93 (0.22)**	-	J/g/K (BTU/lb/°F)	-	Calculated
Dimensional Stability	0.07	X,Y	mm/m (mil/inch)	after etch +E2/150	IPC-TM-650, 2.4.3.9
Flammability	94V-0				UL
Lead-Free Process Compatible	Yes				

[1] S1 units given first, with other frequently used units in parentheses. [2] References: Internal TRs 3824, 5016, 5017, 5035. Tests were at 23°C unless otherwise noted. [3] Due to construction limitations, the dielectric constant of 0.010" and 0.015" thick laminates is 3.02±0.04.

**Preliminary data only

Typical Values should not be used for specification limits.

STANDARD THICKNESS:	STANDARD PANEL SIZE:	STANDARD COPPER CLADDING:
0.005" (0.127mm)	18"x12" (457x 305mm)	¼ oz. (8 µm), ½ oz. (17µm), 1 oz. (35µm), 2 oz. (70µm) electrodeposited. RT/duroid 6202 laminate is not available with thick metal cladding. Unclad material .020" or greater is available. Contact customer service for more information.
0.010" (0.254mm)	18"x24" (457x 610mm)	
0.020" (0.508mm)	18"x48" (457x 1.224mm)	
0.030" (0.762mm)		
0.060" (1.524mm)		

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 Revised 01/2007 0755-0107-100CC, Publication# 92-116