

RT/duroid® 6202

High Frequency Laminates



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.

½ oz. to 2 oz./ft.² electrodeposited and rolled copper foil may be specified as cladding on dielectric thicknesses from 0.005" to 0.060" (0.127 to 1.524 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.

Data Sheet



Features and benefits:

- 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:

- Phased 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

Property	Typical Value	Direction	Units	Conditions	Test Method
Dielectric Constant ϵ_r	2.90 \pm 0.04 ^[3]	Z	-	10GHz/23°C	IPC-TM-650, 2.5.5.5
Dissipation Factor, TAN δ	0.0015	Z	-	10 GHz/23°C	IPC-TM-650, 2.5.5.5
Thermal Coefficient of ϵ_r	+5	Z	ppm/°C	10 GHz -50 to +150°C	IPC-TM-650, 2.5.5.5
Volume Resistivity	10 ⁶	Z	Mohm cm	A	ASTM D257
Surface Resistivity	10 ⁹	Z	Mohm	A	ASTM D257
Tensile Modulus	1007 (146)	X, Y	MPa (kpsi)	23°C	ASTM D638
Ultimate Stress	30 (4.3)	X, Y	MPs (kpsi)		
Ultimate Strain	4.9	X, Y	%		
Compressive Modulus	1035 (150)	Z	MPa (kpsi)		ASTM D638
Moisture Absorption	0.04	-	%	D23/24 D48/50	IPC-TM-650, 2.6.2.1 ASTM D570
Thermal Conductivity	0.68	-	W/m/K	80°C	ASTM C518
Coefficient of Thermal Expansion (-55 to 288 °C)	15 15 30	X Y Z	ppm/°C	23°C/50% RH	IPC-TM-650 2.4.4.1
Dimensional Stability	0.07	X, Y	mm/m (mil/inch)	after etch +E/150	IPC-TM-650, 2.4.3.9
Td	500		°C TGA		ASTM D3850
Density	2.1		gm/cm3		ASTM D792
Specific Heat	0.93 (0.22)	-	J/g/K (BTU/lb/°F)	-	Calculated
Copper Peel	9.1 (1.6)		lbs/in (N/mm)		IPC-TM-650 2.4.8
Flammability	V-O				UL 94
Lead-Free Process Com- patible	YES				

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

[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 .0005 thick laminates is 3.06 \pm 0.04; 0.010" and 0.015" thick laminates is 3.02 \pm 0.04.

Standard Thickness	Standard Panel Size	Standard Copper Cladding	Non-Standard Copper Cladding
0.005" (0.127mm) 0.010" (0.254mm) 0.015" (0.381mm) 0.020" (0.508mm) 0.030" (0.762mm) 0.060" (1.524mm)	12" X 18" (305mm X 457) 24" X 18" (610mm X 457) Non-standard sizes are available up to 24" X 54" (610mm X 1.37m)	½ oz. (18µm) and 1oz. (35µm) electrodeposited and rolled copper foils RT/duroid 6202 laminates are not available with thick metal cladding. Contact customer service for more information on available non-standard and custom claddings and panel sizes	¼ oz. (9µm) electrodeposited copper foil 2 oz. (70µm) electrodeposited and rolled copper foils ½ oz. (18µm), 1oz. (35µm), and 2 oz. (70µm) reverse treated EDC copper foil

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.

These commodities, technology and software are exported from the United States in accordance with the Export Administration regulations. Diversion contrary to U.S. law prohibited.

RT/duroid, Helping power, protect, connect our world and the Rogers' logo are trademarks of Rogers Corporation or one of its subsidiaries

© 2019 Rogers Corporation, Printed in U.S.A., All rights reserved

Revised 1436 071119 Publication# 92-116