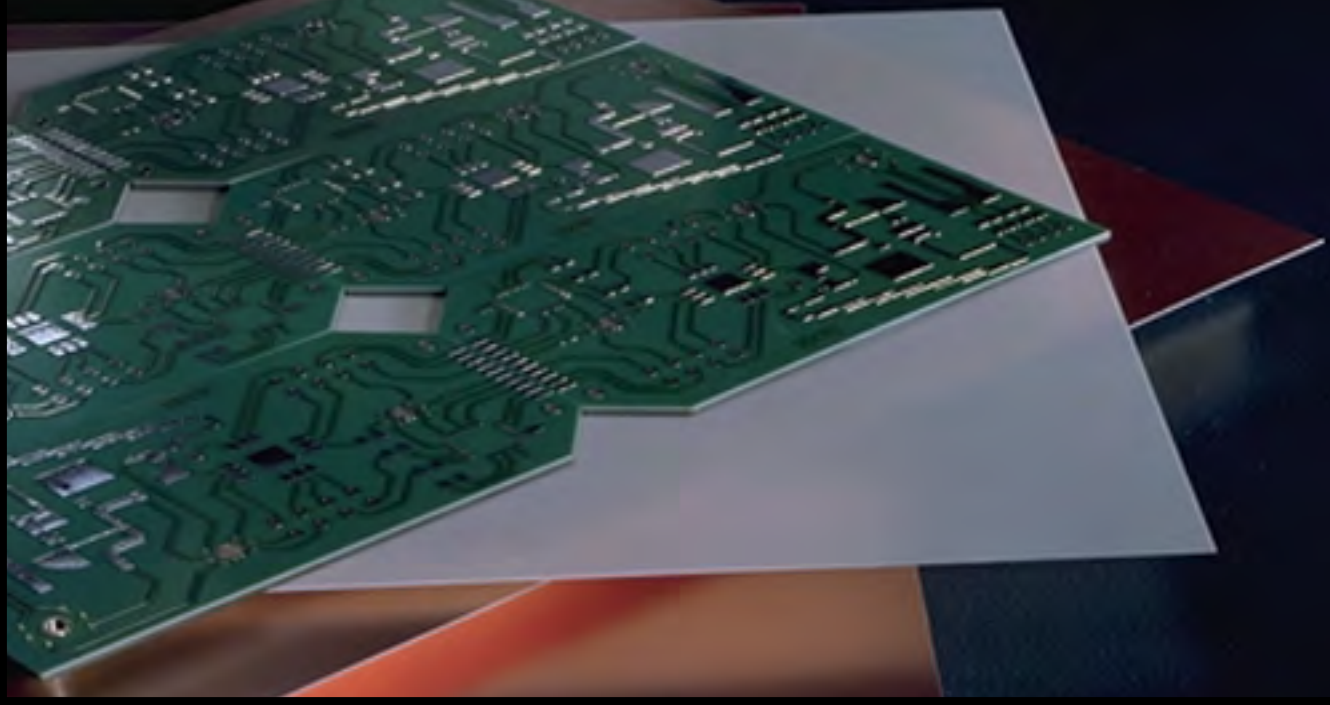


RO4003[®], RO4350[®] High Frequency Laminates

Woven Glass Reinforced Ceramic Filled Thermoset Materials



FEATURES AND BENEFITS:

Non-PTFE.

- Fabricates like FR4.
- Processable by a larger number of fabricators.
- UL flammability rating (RO4350).
- No special through-hole treatments or handling required.
- Lower processing and assembly costs.

Excellent high frequency performance due to low dielectric tolerance and loss.

- Ideal for applications with higher operating frequency requirements.

Stable electrical properties versus frequency.

- Repeatable designs.
- Ideal for multilayer and mixed dielectric constructions (hybrid).

Low thermal coefficient of dielectric constant.

- Ideal for applications sensitive to temperature change.

Low Z-axis expansion.

- Ensures reliable plated through hole quality.

Low in-plane expansion coefficient.

- Excellent reliability of surface mounted assemblies.
- Suitable for use with epoxy glass multilayer board hybrid designs.

Excellent dimensional stability.

- High production yields.

Volume manufacturing process.

- Economical laminate pricing.

High glass transition temperature (280°C).

- Will not warp during reflow assembly.
- Ensures plated through hole reliability.

Typical Applications:

- *LNB's for Direct Broadcast Satellites*
- *Microstrip Patch Antennas*
- *PCS and Cellular Base Station Antennas and Power Amplifiers*
- *Spread Spectrum Communication Systems*
- *RF Identification Tags*



ROGERS
SINCE 1832

PROPERTY	Typical Values		Units
	RO4003	RO4350	
Dielectric Constant @ 10 GHz	3.38 ± 0.05	3.48 ± 0.05	–
Thermal Coefficient of ϵ_r @ 0 to 100°C	+40	+50	ppm/°C
Dissipation Factor @ 10 GHz	0.0027	0.0040	–
Youngs Modulus	X 3700 (25,510) Y 3900 (26,889)	1664 (11,473)	kpsi (MPa)
Volume Resistivity	1.7×10^{10}	1.2×10^{10}	Mohm•cm
Surface Resistivity	4.2×10^9	5.7×20^9	Mohm
Moisture Absorption	0.06	0.06	%
Dimensional Stability	X,Y <0.3	<0.5	mm/m
Specific Gravity 23°C	1.8	1.9	–
Peel Strength	1.1 (6.4)	0.9 (5.3)	N/m (pli)
Thermal Conductivity	0.64	0.62	W/m/°K
Coefficient of Thermal Expansion @ 0 to 100°C	X 11 Y 14 Z 46	14 16 50	ppm/°C
Glass Transition (Tg)	>280	>280	°C
UL Flammability Rating	NO	94-VO	–

Availability:

Standard Thicknesses:

RO4350: 0.0066" (0.168mm), 0.010" (0.254mm), 0.020" (0.508mm), 0.030" (0.762mm), 0.060" (1.524mm)

RO4003: 0.008" (0.203mm), 0.020" (0.508mm), 0.032" (0.813mm), 0.060" (1.524mm)

Standard Sheet Sizes: 24" X 18" (610 X 457mm), 12" X 18" (305 X 457mm)

Standard Copper Cladding: 1/2 oz (17µm) and 1 oz (35µm) electrodeposited copper.

Rogers laminates can be purchased by contacting your U.S. customer service representative or one of our overseas offices. Telephone numbers are listed below.

The information and guidelines contained in this document are intended to assist you in designing with RO4000 series. They are not intended to and do not create any warranties, express or implied, including any warranty of merchantability or fitness for a particular application. The user should determine the suitability of Rogers materials for each application. Values are averages and not guaranteed.

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Rogers Corporation Microwave Materials Division

100 S. Roosevelt Avenue
Chandler, AZ 85226-3415
Tel: 480 961-1382 Fax: 480 961-4533
Toll Free: 877 643-7701
Website: <http://www.rogers-corp.com/mwu/>
ISO 9002 CERTIFIED

In Japan:

Rogers Japan Inc., Tokyo 116 Japan
Tel: 03-3807-6430 Fax: 03-3807-6319

In Europe:

Rogers N.V., Ghent, Belgium
Tel: 32-9-2353611 Fax: 32-9-2353658

In Taiwan:

Rogers Taiwan Inc., Taipei, Taiwan R.O.C.
Tel: 886-2-86609056, Fax: 886-2-86609057