

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 LoPro

RO4000® LoPro™ Laminates

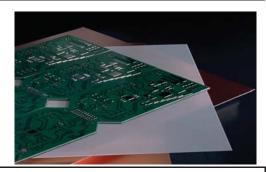


Typical Applications:

- Digital applications such as servers, routers, and high speed back planes
- Cellular base station antennas and power amplifiers
- LNB's for direct broadcast satellites
- RF Identification Tags

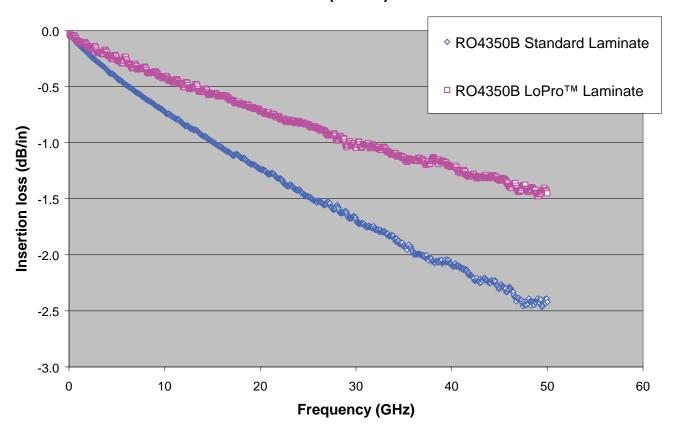
Features	Benefits	
RO4000® laminates with very low profile reverse treated foil.	•	Lower insertion loss
	•	Lower PIM
	•	Increased signal integrity
	•	Higher circuit density
Thermoset hydrocarbon resin system	•	Ease of fabrication
Low Z-Axis CTE	•	MLB capability
LOW Z-AXIS CIE		Design flexibility
Lead free process compatible	•	High temperature processing
	•	Ease of fabrication
		Meets environmental concerns

RO4000 LoProTM laminates use a proprietary Rogers' technology that allows reverse treated foil bond to standard RO4000 dielectric. This results in a laminate with low conductor loss for improved insertion loss and signal integrity while maintaining all other desirable attributes of the standard RO4000 laminate system.



Standard Thickness	Standard Panel Size	Copper Cladding
RO4003C™ Laminate 0.0087" (0.221mm), 0.0127" (0.323mm), 0.0167" (0.424mm) , 0.0207" (0.526mm), 0.0327" (0.831mm), 0.0607" (1.542mm)	12"X 18" (305 X 457 mm) 24"X 18" (610 X 457 mm) 24 X 36" (610 X 915 mm) 48" X 36" (1.224m X 915mm)	LoPro Reverse Treated EDC for PIM Sensitive Applications: $1/2 \text{ oz } (17 \mu\text{m}), 1 \text{ oz } (35 \mu\text{m})$ For most applications the standard EDC foil should be
RO4350B™ Laminate 0.0047" (0.119mm), 0.0073" (0.185mm), 0.0107" (0.272mm), 0.0140" (0.356mm), 0.0173" (0.439mm), 0.0207" (0.526mm), 0.0307" (0.780mm), 0.0607" (1.542mm)		used. When PIM and insertion loss is critical, the LoPro reverse-treat copper should be considered. Rogers' LoPro foil has a surface modifier to bond reverse-treat foils to RO4000 laminates For other cladding options contact your customer service representative.

RO4350B Insertion Loss With Different Copper Foil Types 0.1 mm (0.004") laminate



Standard + RO4000 LoPro laminates use a modified version of the standard RO4000 resin system to achieve bonding to reverse treat copper foils. As a result the bulk laminate thickness is increased by 18µm (0.0007"). RO4350B LoPro laminates do not share the same UL designation as standard RO4350B laminates. A separate UL qualification may be necessary for end use. Please contact Rogers' technical service for assistance.

Prolonged exposure in an oxidative environment may cause changes to the dielectric properties of hydrocarbon based materials. The rate of change increases at higher temperatures and is highly dependent on the circuit design. Although Rogers' high frequency materials have been used successfully in innumerable applications and reports of oxidation resulting in performance problems are extremely rare, Rogers recommends that the customer evaluate each material and design combination to determine fitness for use over the entire life of the end product.

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.

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.

The world runs better with Rogers., the Rogers' logo, RO4000, RO4003C, RO4350B, and LoPro are licensed trademarks of Rogers Corporation.

© 2009 Rogers Corporation, Printed in U.S.A., All rights reserved.

Revised 06/2009 0868-0609-0.5CC **Publication #92-141**