ROGERS CORPORATION
Advanced Circuit Materials

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Data Sheet
LoPro

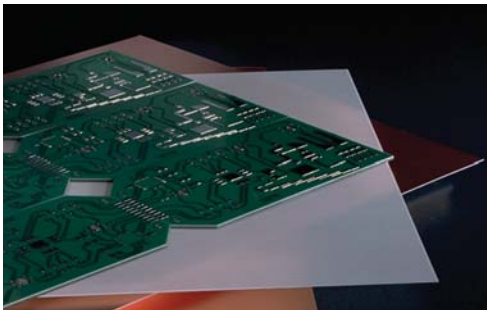
RO4000® LoPro™ Laminates

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

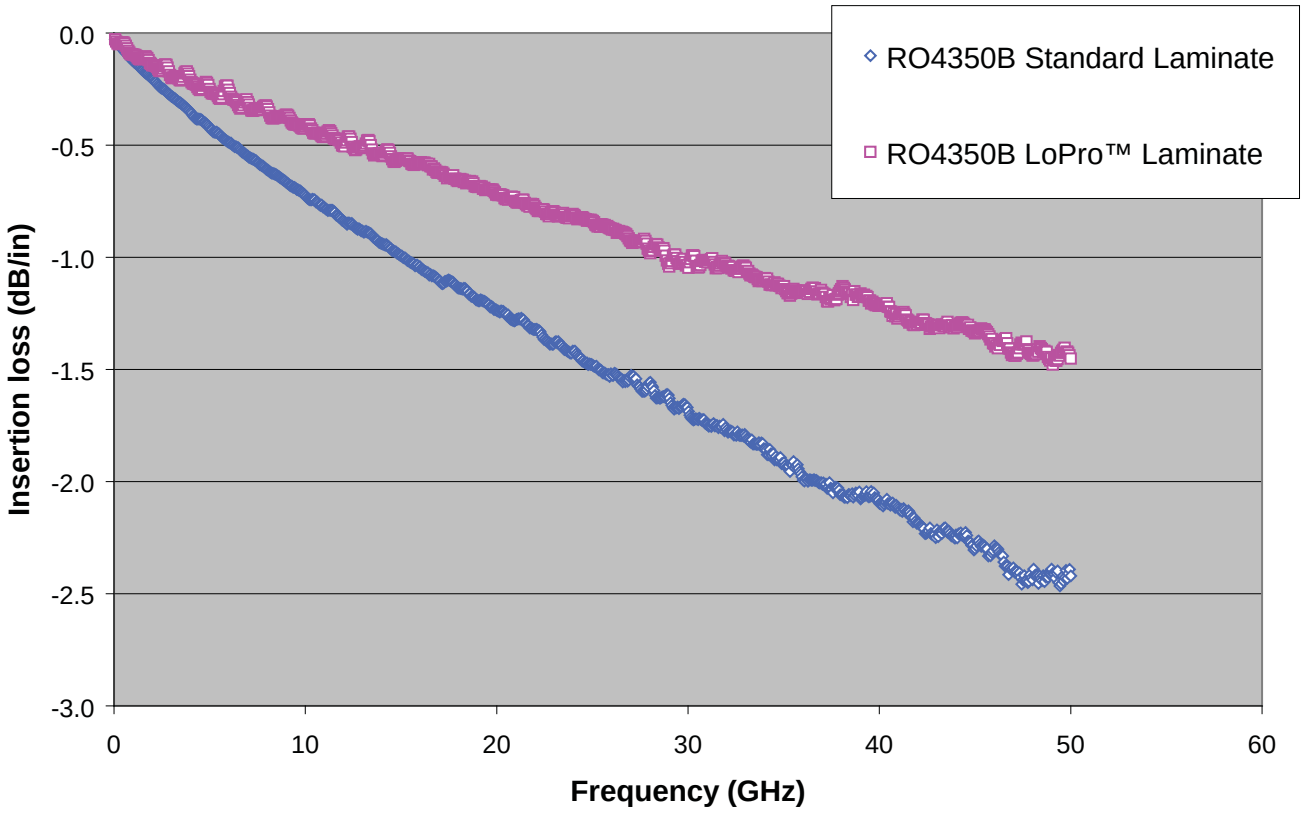
Features	Benefits
RO4000® laminates with very low profile reverse treated foil.	• Lower insertion loss
	• Lower PIM
	• Increased signal integrity
	• Higher circuit density
Thermoset hydrocarbon resin system	• Ease of fabrication
Low Z-Axis CTE	• MLB capability
	• Design flexibility
Lead free process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

RO4000 LoPro™ 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 oz (17µm), 1 oz (35 µm) For most applications the standard EDC foil should be 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™ 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)		

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.

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