

RO4830™ Laminate

Quick Reference Processing Guide

Material Description:	Reverse-treat copper clad, glass reinforced ceramic filled hydrocarbon resin composite material targeting automotive radar applications operating at 77-79 GHz. The materials covered by this processing guide are intended for use as cap layers in hybrid multi-layer boards made using FR-4 core and prepreg materials.
Storage:	Ambient
INNER LAYER PREPARATION	
Tooling:	Compatible with round and slotted pinning and pinless systems.
Surface Preparation for Photoresist:	Process as-delivered or use chemical surface preparation system.
Photoresist Application:	Standard procedures for film and liquid photoresists would apply.
DES Processing:	Retain balanced copper on both sides of inner-layers to improve registration and reduce the risk for bow and twist.
Oxide/Oxide Alternatives:	Use procedures associated with oxide or oxide alternative of choice.
MLB BONDING	
Final Preparation:	110C-125C pre-bake is recommended unless a similar bake was already implemented as part of the oxide or alternative oxide application process.
Multi-Layer Adhesive System:	Compatible with RO4400™ bondply and most FR4-type adhesive systems.
Multi-Layer Bond Cycle:	Use parameters associated with the chosen adhesive system. Flatness of pressed MLBs might be improved by reducing applied pressure to ~50 PSI fifteen minutes after reaching the final cure temperature.
PTH AND OUTER LAYER PROCESSING	
Drilling:	Use standard entry/exit materials such as sheeted aluminum and pressed phenolic. Use new drills. Enter through the RO4830™ core side when drilling hybrid MLBs. Vias can be processed using UV-YAG, CO2, or combined UV-YAG/CO2 systems. Plasma or permanganate may be required to clean copper surfaces at the base of blind vias.
Deburring:	Mechanical debur/scrub is acceptable for thicker (>0.030") builds. Chemical processing or suspended pumice sprays are preferred for thinner panels.
Hole Preparation:	Chemical or plasma desmear may be required. Etch back of RO4830™ core layers should be avoided.
Metallization:	Electroless copper or direct deposit processes can be used.
PTH AND OUTER LAYER PROCESSING	
Final Finish:	Compatible with most thermally, electrolytically, and chemically deposited final metal finishes and OSPs. Preserve post-etch surface of cores to promote better adhesion to solder mask. Bake cores for 30-60 minutes at 110C-125C prior to applying solder mask.
Final Circuitization:	RO4830 laminates can be routed, punched, V-scored, or laser trimmed. Diamond-cut or multi-fluted chipbreaker router bits are recommended.

The information in this processing guideline 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 processing guideline will be achieved by a user for a particular purpose. The user should determine the suitability of Rogers' circuit materials for each application.

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