Halogen-free Theta circuit materials ideally suited for high-speed digital circuits

Rogers Corporation will have a strong presence at the upcoming IPC Midwest Exhibition and Conference, both on the show floor and as part of the technical conference. This key industry event is scheduled for August 22-23 at the Renaissance Schaumburg Convention Center Hotel in Schaumburg, IL, the IPC Midwest Exhibition and Conference [1]) is for electronic circuit assembly and printed-circuit-board (PCB) manufacturing professionals. Representatives from Rogers Corporation [2] will be on hand at Booth #503 to advise visitors on the optimal use of their diversified lines of circuit-board materials, engineered to extract the best performance from high-frequency analog and high-speed digital circuits.

As part of the exhibition, Rogers' staff will be highlighting their halogen-free Theta circuit materials, a family of laminate and prepreg products ideally suited for high-speed digital circuits. These materials have the low loss required for outstanding signal integrity in high-speed digital designs, which feature a relative dielectric constant of 3.90 at 1 GHz and low dissipation factor of 0.009 at 1 GHz for excellent low loss performance. Theta circuit materials are designed for high reliability, with a low coefficient of thermal expansion (CTE) of only 50 ppm/°C in the z direction, or about 30% less expansion than standard FR-4 circuit materials for the same temperature range. This translates into improved reliability of plated through holes (PTHs), buried blind, and stacked vias in multilayer structures requiring multiple lamination cycles. RoHS-compliant Theta laminates are available in a range of thickness options for design flexibility.

In addition, visitors to the Rogers' booth are encouraged to ask about the new ROG Calculator App, available online at: www.rogerscorp.com/rogcalc [3]. This free software tool is actually four handy calculators in one simple-to-use program. It provides conversions for commonly used units of measure (such as VSWR and conversion loss), calculations of copper laminate

thickness, analysis of circuit material thermal coefficient of dielectric constant (TCDk), and estimations of circuit material CTE.

On the conference side, attendees can learn more about circuit materials and lead-free processing by attending a presentation from John Coonrod, Rogers' Market Development Engineer. He is the author of numerous articles on circuit materials as well as the popular "ROG" blog series (www.rogerscorp.com/acm [4]). Speaking as part of an IPC Midwest Conference session on "Assembly Process Soldering Materials," his address is entitled "*New Developments in PCB Laminates, Halogen Free & Lead-Free Soldering Capable."* It is scheduled for August 23 at 10:15 – 11:45 AM as part of Session S05.

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www.rogerscorp.com [2]

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