Rogers ACM Division Introduces High Reliability Laminates

Rogers Advanced Circuits Materials Division (ACM) will be introducing two new laminates to the market at the IEEE Radio & Wireless Week expo at the Renaissance Glendale Hotel & Spa in Glendale, Arizona January 17-18, 2011. Rogers (Booth #2) will be featuring its new XT/duroid® 8000 series high performance thermoplastic laminate materials along with its new RT/duroid® 6035HTC high thermal conductivity laminates.

Rogers XT/duroid 8000 Series includes XT/duroid 8000 laminates for simpler multilayer designs (less than 6 layers) and XT/duroid 8100 laminates for constructions consisting of six or more layers. Highly reliable and halogen-free flame retardant, XT/duroid laminates are thermally and chemically robust with melting points higher than PTFE materials and an estimated maximum Relative Thermal Index (RTI) greater than 210°C (410°F), making them well suited for rugged military and aerospace applications, including airborne lightning strike protection circuits, phased-array antennas and unmanned aerial vehicles (UAVs).

Rogers' new XT/duroid 8000 laminates feature a z-axis dielectric constant of 3.23 ±0.05 at 10 GHz and a dissipation factor of 0.0035 or less at 10 GHz. They deliver stable electrical performance over wide frequency ranges, with a low thermal coefficient of dielectric constant of +7 ppm/°C from -50° to +150°C.

For complex multilayer circuit constructions requiring excellent stability, XT/duroid 8100 laminates have a reinforced woven-glass resin system for added dimensional stability. That makes them capable of supporting multilayer circuits while providing the thermal and chemical ruggedness, as well as outstanding electrical performance, of XT/duroid 8000 laminates.

Rogers' new XT/duroid 8100 laminates feature z-axis dielectric constants of 3.54 ±0.05 (.002") & 3.32±0.05 (.004") at 10 GHz and dissipation factors of 0.0049 (.002") & .0038" (.004") at 10 GHz. They deliver stable electrical performance over wide frequency ranges, with a low thermal coefficient of dielectric constant of +9 ppm/°C from -50° to +150°C.

Both XT/duroid 8000 and 8100 laminates are available with a dielectric thickness of 0.002 in. (0.0508 mm) with 0.5-oz. low profile reverse treated electrodeposited copper foil cladding. XT/duroid 8100 is also available with dielectric thickness of 0.004 in. (0.1016 mm).

Rogers' new RT/duroid® 6035HTC is a high-thermal-conductivity (HTC) laminate material engineered for low loss in high-power circuits. With a thermal conductivity of 1.44 W/m-K and a loss tangent of 0.0013 @ 10 GHz, this combination of high thermal conductivity and low dielectric loss translates into improved amplifier

performance.

Rogers' RT/duroid 6035HTC laminates feature a relative dielectric constant of 3.5 at 10 GHz, making them suitable for a wide range of circuits, including amplifiers, couplers, filters, and power combiners/dividers employed in avionic and other military and high reliability systems. Improved drillability and extended tool life is an advantage of the advanced filler system in comparison to alumina-containing circuit materials.

RT/duroid 6035HTC laminates are available in a variety of dielectric thicknesses and cladding options to support a wide range of high frequency circuit applications.

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