



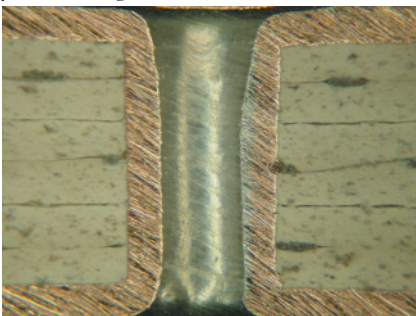
THERMALLY STABLE PCB MATERIAL

A new printed circuit board material has been developed to meet the demanding requirements for dielectric constant temperature stability and plated hole reliability for high temperature and varying environmental conditions. TSM-30 is based on a high temperature, low loss organic combined with ceramic. The material exhibits superior low loss, high copper peel strength and chemical moisture resistance properties. The new material also has good dimensional stability for the construction of multilayer boards. **Figure 1** shows a typical plated-through hole using TSM-30 material.

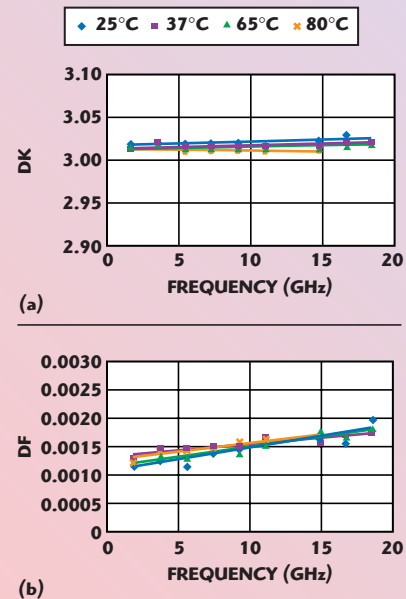
TSM-30 features a nominal dielectric constant of 3.0 and a dissipation factor of 0.0015 at 10 GHz. **Figure 2** shows the temperature influence on the dielectric constant DK and the loss tangent DF of TSM-30 over its useful frequency range. Moisture absorption is specified at 0.03 percent and the coefficient of thermal expansion (CTE) in the X, Y and Z directions is 23, 28 and 75 ppm/°C, respectively. Flammability rating per the UL-94 criteria is V-0.

TSM-30 material is available in 0.005" thickness increments. It is supplied with all types of copper foil, including Ohmega ply resistor foil. The material delivers exceptional performance for high frequency applications where a consistently stable dielectric constant is required for a changing environment. The low loss and improved thermal conductivity make it excellent for high power applications.

Fig. 1 A typical TSM-30 plated-through hole. ▼



TSM-30 is currently available in sizes up to 36" × 48", with cut panel sizes available at 12" × 18", 18" × 24" and 24" × 36". The material can be purchased in increments of 0.0050", with all standard copper thicknesses. Additional information and a product data sheet may be obtained from the company's Web site at www.taconic-add.com.



▲ Fig. 2 Temperature dependence of (a) DK and (b) DF.

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