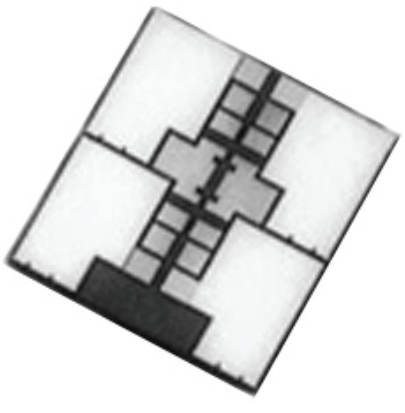
High Power Multi-Tired Conductor Hybrid Circuit Substrate



Product may not be to scale

FEATURES

- Copper power lines up to 5000 microinches thick
- Gold small signal lines ± 100 microinches width tolerance
- Temperatures to 350 °C
- Substrate material: Alumina, Beryllium Oxide or Aluminum Nitride
- Excellent adhesion
- Metallized through holes
- Filled vias
- Resistors available
- Sizes up to 4 inches x 4 inches

Vishay Electro-Films (EFI) has developed a thin film process that has the unique capability of incorporating up to 5000 microinches thick plated copper conductors on the same substrate with standard 100 to 300 microinches thick conductors.

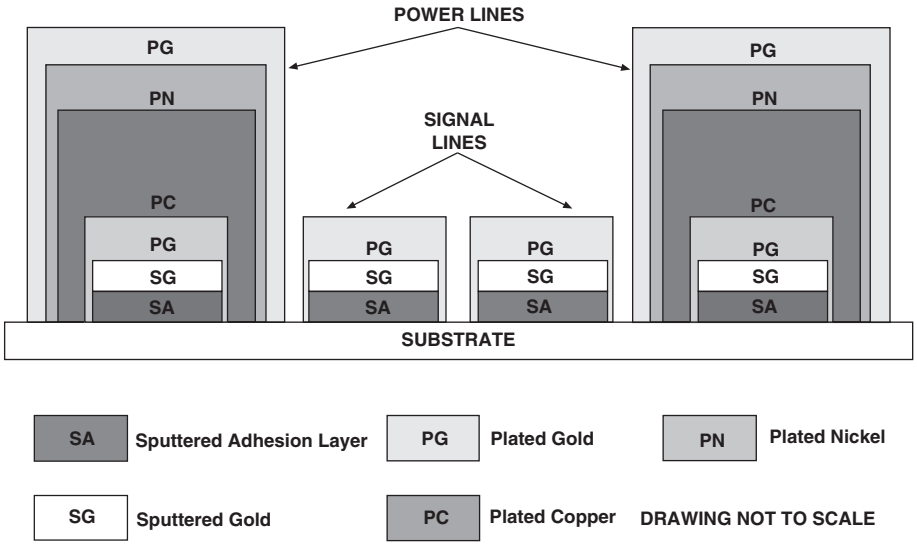
Some hybrid circuit applications require thick copper conductors for the power lines but standard thickness small signal lines to maintain tight line width control of critical elements. For example, a microwave application may require high power bias current to GaAs or other semiconductor devices while also requiring tight line width control to obtain good high frequency performance for lange couplers, filters or other critical signal patterns.

For standard, high power, low frequency hybrid circuit substrates, thick copper plating alone is ideal. The 5000 microinches thick plated copper has a resistivity of less than 0.15 mΩ/square.

In most cases, the dc or low frequency copper power lines are overplated with nickel and gold to prevent oxidation, permitting high temperature processing and operation. The conductor material for the small signal lines is normally gold. Several substrate materials and various adhesion metals are available.

Consult Applications Engineer to discuss your requirements in detail to jointly develop the optimum metalization structure for your application.

TYPICAL CROSS SECTION



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