Thin Film, High-Density Interconnects

**KEY BENEFITS**
- Enhanced signal routing
- Size integration
- Improved response conditioning
- Low noise < - 30 dB

**APPLICATIONS**
- Microwave circuitry
- High-performance, low-noise power amplifiers
- Avionics
- Satellites

**RESOURCES**
- For technical questions contact efi@vishay.com

ES COMPONENTS
108 PRATTS JUNCTION
ROAD STERLING, MA 01564
PHONE: (978) 422-7641
FAX: (978) 422-0011
www.escomponents.com
**Thin Film, High-Density Interconnects**

**Standard Layout Guidelines**

**DESIGN CAPABILITIES**
Thin Film High Density Interconnect design guide is directed at engineers looking to design the following:
- Simple resistor networks
- Integrated resistor-capacitor networks
- Multilayer substrate that involve up to 5 layers
- Custom thin film substrate on alumina (Al₂O₃), aluminum nitride (AlN), or beryllium oxide (BeO)
- Substrates with special shapes, vias, and patterns
- Substrates for microwave applications

**DIMENSIONS** in inches (millimeters)

- **MAXIMUM SUBSTRATE SIZE** 4.1" [104] x 4.1" [104]

**CONDUCTORS & RESISTORS - VALUES & TOLERANCES**

- **VALUE TO ± 5%**
  - **WIDTH**: 0.002" [0.05] MIN.
  - **LENGTH**: 0.005" [0.13] MIN.

- **VALUE TO ± 0.1%**
  - **WIDTH**: 0.002" [0.05] MIN.

**HOLESPACING**

- **LINE SPACING**: 0.0005" [0.013] MIN.

**DIAMETER**

- **AIR BRIDGE**: 0.005" [0.13] MIN.

**OVERLAP**

- **MIN CONTACT AIR BRIDGES OR SUPPORTED**: 0.005" [0.13] MIN.

**TOLERANCES**

- **REGISTRATION VIA TO CIRCUIT**: ± 0.002" [0.05]
- **REGISTRATION VIA TO CIRCUIT**: ± 0.001" [0.003]
- **DIAMETER SURFACE DIAMETER**: ± 0.001" [0.003]
- **HOLE DIAMETER**: 0.001" [0.025] MIN.
- **HOLES AND MACHINED FEATURES**: ± 0.002" [0.05]

**RESISTOR SPACING (FOR LASER ENTRY)**

- **LINE SPACING**: 0.0005" [0.013] MIN.

**MULTILAYER CONDUCTORS (UP TO 5 LAYERS) VIA PAD**

- **LINE WIDTH**: 0.005" [0.13] MIN.

**APPLICATIONS**

- **Military**
- **Automotive**
- **Instrumentation - microwave**
- **Telecommunications - CATV, fiber optic and wireless**
- **Aerospace**
- **Medical**

**PRODUCT SHEET**

VMN-PT9057-1202

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000