Smiths Interconnect offers the widest selection of products from DC through Q band. Backed by proven performance and significant heritage, Smiths Interconnect is the leader in high reliability components.

Smiths Interconnect introduces the TT9 series, a new wideband surface mount fixed attenuator optimized for performance from DC to 20 GHz. Utilizing our 40 plus years of experience in refining attenuation solutions, the TT9 offers the best performance to date for high frequency applications in an SMT package. These devices are noted for their excellent performance and small size, measuring only 0.070” x 0.060” (1.78mm X 1.62mm). The TT9 wideband fixed attenuator handles 500mW of input power and is available in dB values from 0 to 10 dB in 1 dB increments. In addition, Smiths Interconnect can develop custom variations specific to the frequency band of your application. The same footprint is also offered in a temperature variable version, the WTVA SMT series, for ultimate design flexibility. This product is available in both RoHS compliant and Sn60Pb40 solder finish versions and supplied on tape and reel for high volume pick and place applications.

Full test qualification test report and RF test report are available for this series on our website. A product kits with an evaluation board is also available.

**Features and Benefits**
- Small Footprint
- High Power
- Surface Mount
- Low VSWR
- Easy Installation
- Wide Attenuation Offering

**Applications**
- Mobile Networks
- Broadcast
- High Power Amplifiers
- Isolators/Circulators
- Military
- Instrumentation
Technical Characteristics

### Mounting Configuration Options
Surface Mount (SMT)

### Electrical
- **Nominal Impedance**: 50 ohms
- **Frequency Range**: DC - 20 GHz
- **Attenuation Values Available**: 1-10 in 1 dB Increments
- **Attenuation Accuracy**
  - | Attenuation Value (dB) | DC–15 GHz | 15–20 GHz |
  - | 0–4 | ± 0.5 | ± 0.5 |
  - | 5–10 | ± 0.5 | ± 0.75 |
- **Input Power CW**: 500 Milliwatts Max up to 125°C (See derating curve)
- **Peak Power**: 5 Watts based on 10 µS pulse width @ 1% Duty Cycle
- **VSWR**: 1.40:1 Typical DC-20 GHz, 1.70:1 Max 10-20 GHz

### Environmental
- **Operating Temperature**: -55°C to +150°C
- **Storage Temperature**: -65°C to +150°C
- **Moisture Sensitivity Level**: MSL 1 - Unlimited

### Mechanical
- **Substrate Material**: Alumina (Al₂O₃) 96%
- **Resistive Film**: Thick Film
- **Terminal Material**: Thick Film
- **Protective Coating**: Polymer
- **Finish Options**
  - Blank
  - Solder Plated (Sn60/Pb40)
  - Silver Plated (RoHS Compliant)

### Marking
- **Unit Marking**: None

### Quality Assurance
- Sample visual and mechanical Inspection - 1.0 AQL per mechnical drawing requirements.
- Periodic electrical inspection performed for commercial grade products.
- High reliability tested products are available per MIL-PRF-55342.

### Packaging
- **Standard Packaging**: Tape and Reel or Waffle Pack
## Power Derating Curve

![Power Derating Curve](image)

## Typical Data

### TT9 Series Attenuation

![TT9 Series Attenuation](image)

### TT9 Series VSWR

![TT9 Series VSWR](image)

## Mechanical

### TT9 - Surface Mount

![TT9 Surface Mount](image)

Unless otherwise specified, tolerance: X.XXX = ±0.005
Suggested Mounting Footprint

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<th>B</th>
<th>C</th>
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How To Order

Specify Model Number: **TT9XX.0XXXX**

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1 Series Name

2 Attenuation Value

3 Options

4 Terminal Finish

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TT9 SMT Series