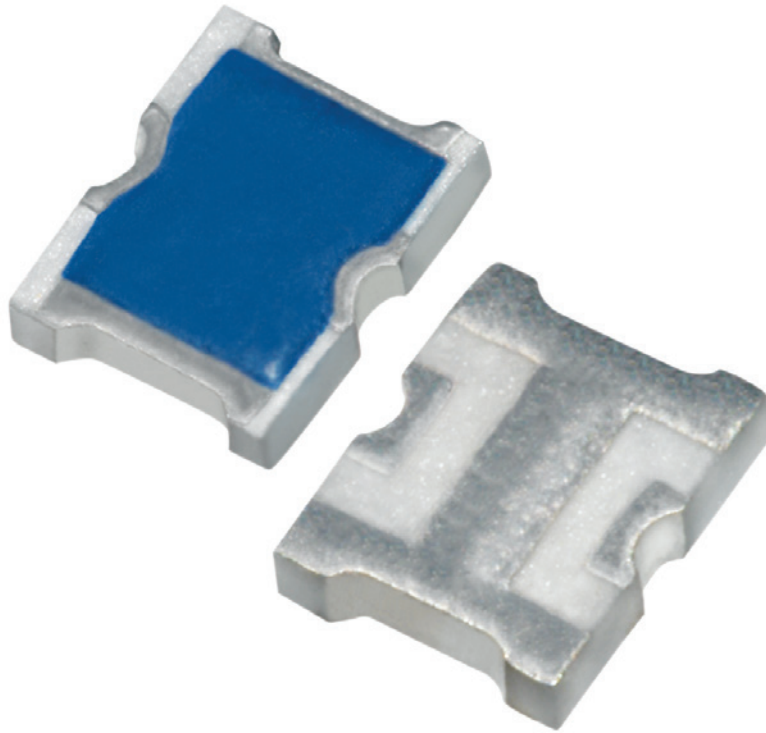


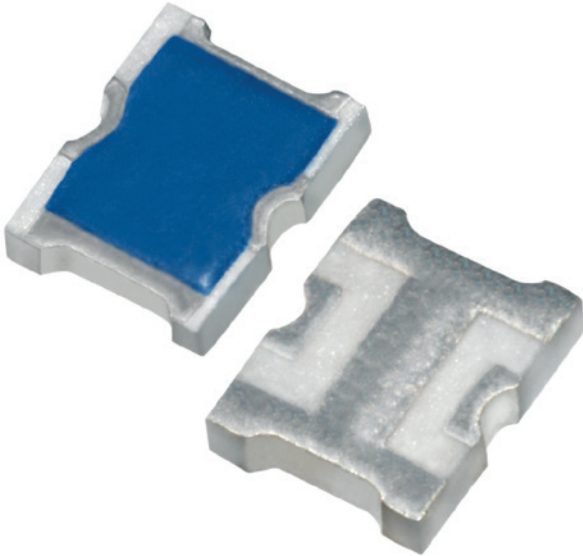
# TT9 SMT Series

Attenuator Chip DC-20 GHz



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Attenuator Chip DC-20 GHz



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 up to 4 watts 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.

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

TT9 SMT Series with improved power rating, specifically designed for demanding surface mount broadband applications.

## 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)
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## Electrical

Nominal Impedance	50 ohms		
Frequency Range	DC -20 GHz		
Attenuation Values Available	1-10 in 1 dB Increments		
Attenuation Accuracy	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	0-1 dB 4.00 W, 2-3 dB 1.50 W, 4-6 dB 1.25 W, 7-10 dB 1.00 Watts (See derating curve)		
Peak Power	5 times input power 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 (Al <sub>2</sub> O <sub>3</sub> ) 96%
Resistive Film	Thick Film
Terminal Material	Thick Film
Protective Coating	Polymer
Finish Options	Blank Solder Plated (Sn60/Pb40)
	-F Silver Plated (RoHS Compliant)

## Marking

Unit Marking	None
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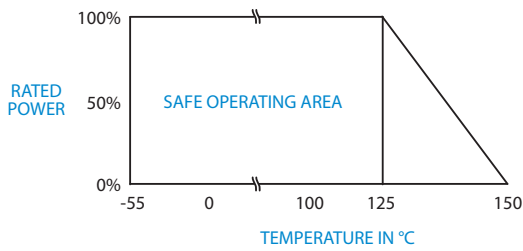
## Quality Assurance

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

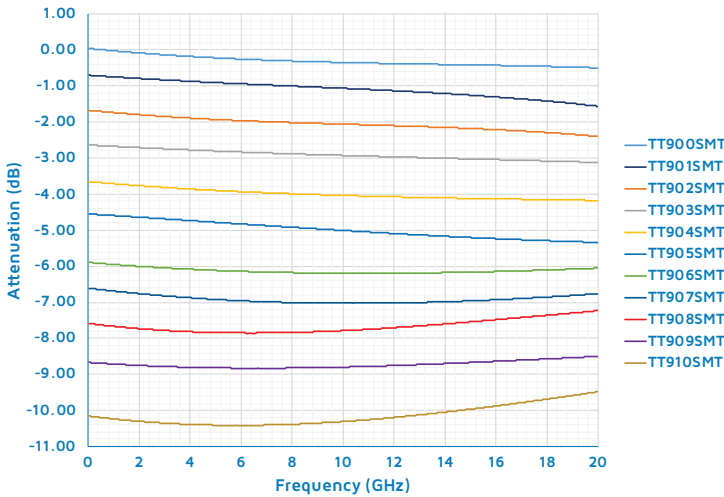
Standard Packaging	Tape and Reel or Waffle Pack
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# Power Derating Curve

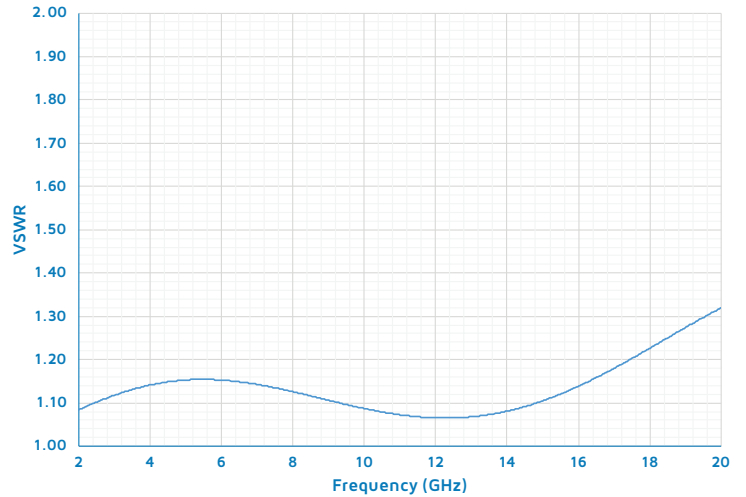


# Typical Data

## TT9 Series Attenuation

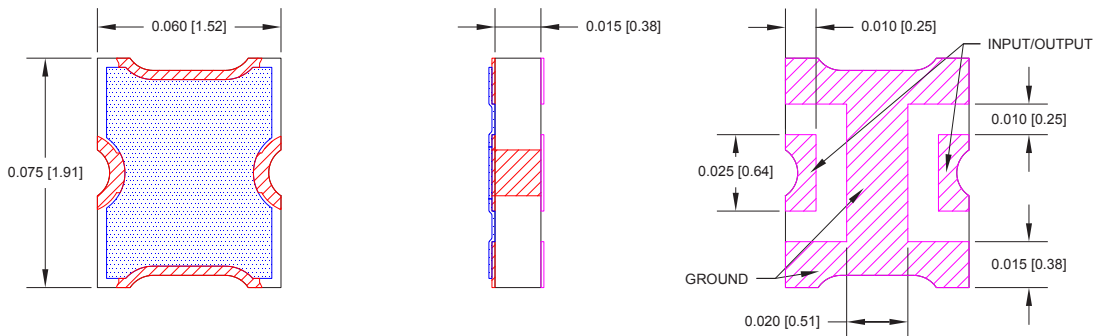


## TT9 Series VSWR



# Mechanical

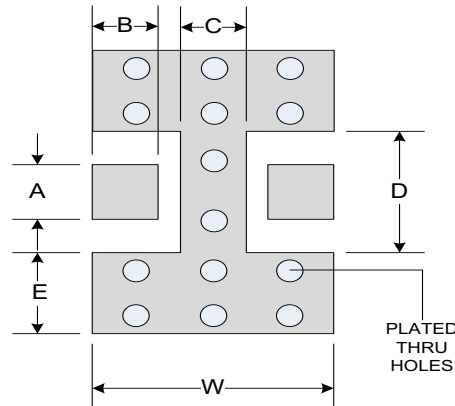
## TT9 - Surface Mount



Unless otherwise specified, tolerance: X.XXX =  $\pm 0.005$ "

# Suggested Mounting Footprint

Part Number	Inches						Millimeters					
	A	B	C	D	S	W	A	B	C	D	S	W
TT9XXSMTF	0.025	0.015	0.016	0.049	0.018	0.070	0.64	0.38	0.41	1.24	0.46	1.78



## How To Order

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

	1	2	3	4
<b>1 Series Name</b>	TT9 Series			
<b>2 Attenuation Value</b>	.0 00.0 dB through .0 10.0 dB			
<b>3 Options</b>	SMT Surface Mount			
<b>4 Terminal Finish</b>	Standard F RoHS			

# Global Support

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