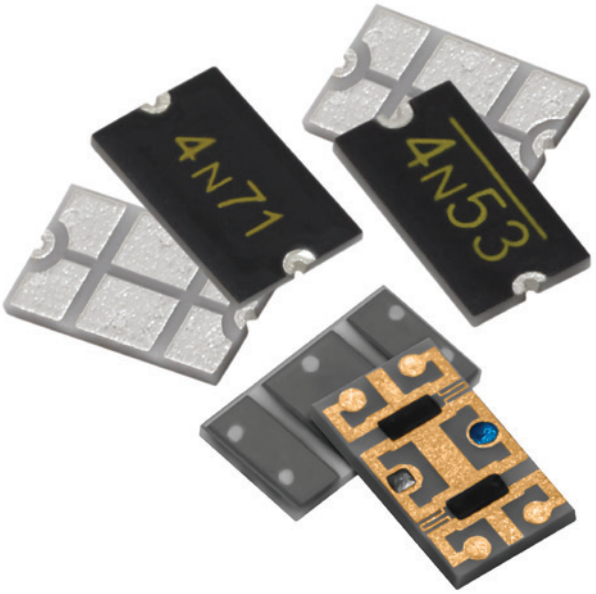
SpaceNXT™ K2TVA Thermopad®

TEMPERATURE VARIABLE ATTENUATOR



SpaceNXT™ K2TVA Thermopad® Series offers a totally passive solution for gain compensation over temperature with proven high-reliability heritage

SpaceNXT™ K2TVA Thermopad® Series is Smiths Interconnect's response to the increasing demand for high-reliability connectivity in commercial space programs, particularly GEO/MEO and LEO satellites. K2TVA Thermopad is part of SpaceNXT™ family of COTS+ products, specifically designed and tested for critical space flight applications.

The new SpaceNXT™ K2TVA Series offers up to 4 times Temperature Coefficient of Attenuation over the original KTVA series. This series focuses on improved performance in specific frequency bands to target increased RF stability and temperature shift response over the life of the system. The K2TVA platform offers significant heritage and proven performance in a cost-effective commercial grade product. High reliability tested options are available to ensure mission success in demanding high reliability applications.

K2TVA products are rated for 17-22 GHz and 27-32 GHz with excellent response in the specified band of application. K2TVA is constructed on an Alumina substrate with rugged thick film terminations and thick film thermistor technology elements. The product also includes a protective coating for added protection from various environmental conditions. Multiple attenuation values, temperature shift options and mounting configurations are available to support both surface mount and wire bond applications. Various finish options are also available including RoHS compliance.

Features

- Small Footprint
- Multiple Mounting Configurations
- Broad Specific Frequency Range
- Low VSWR
- Multiple Temperature Shift Options
- Range of Attenuation Values
- Tight Attenuation Tolerance

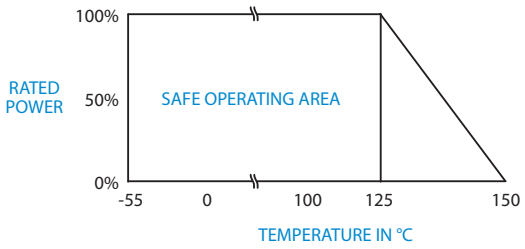
Applications

- Amplifier Circuits
- Transmit/Receive Modules
- Up/Down Converters
- Instrumentation
- Satellite Communications
- Radars

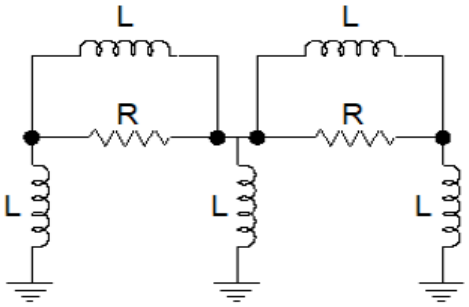
Technical Characteristics

Mounting Configuration Options	Surface Mount (SMT)	Wire Bondable
Electrical		
Nominal Impedance	50 ohms	
Frequency Range	[Band 1] 17-22 GHz [Band 3] 27-32 GHz	
Attenuation Values	3, 4, 5, 6 dB	
Attenuation Accuracy	± 1.0 dB maximum	
Temperature Coefficient of Attenuation (TCA)	-0.005 & -0.007 dB/dB/°C	
Temperature Coefficient Tolerance	± 0.001 dB/dB/°C	
Input Power CW	200 Milliwatts Max up to 125°C (See derating curve)	
Peak Power	2 Watts based on 10 µS pulse width @ 1% Duty Cycle	
VSWR	1.25 Typical, 1.40:1 Maximum within selected frequency band	
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_2O_3) 96%	
Resistive Film	Thick Film	
Terminal Material	Thick Film	Thick Film Bondable Gold Input/Output Pads, Solderable Platinum Silver Ground
Protective Coating	Polymer	
Finish Options Blank -F	Solder Plated (Sn60/Pb40) Silver Plated (RoHS Compliant)	N/A
Marking		
Unit Marking	dB Value, Shift Negative, TCA Shift and Band	Dot Marking See Table
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. **TCA Calculation Method** - Measure Attenuation @ frequency band every 20°C over the temperature range of -55°C to +125°C Calculate the slope of the curve using linear regression. Calculate TCA using the following formula: $TCA = \frac{Slope}{Attenuation\ @\ 25^{\circ}C}$	
Packaging		
Standard Packaging	Tape and Reel or Waffle Pack	
Typical Data		
See Test Report		

Power Derating Curve

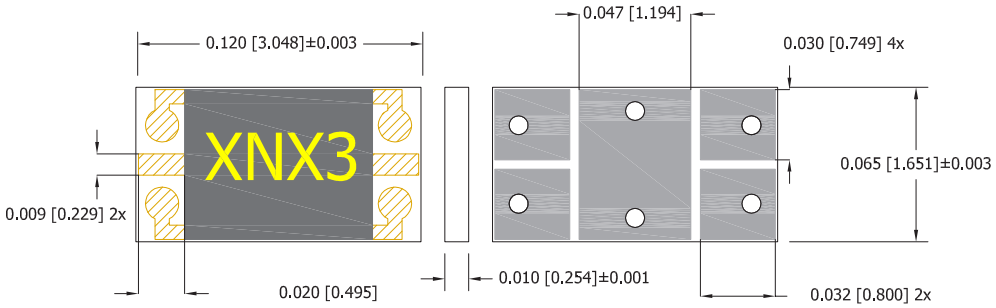


Equivalent Model

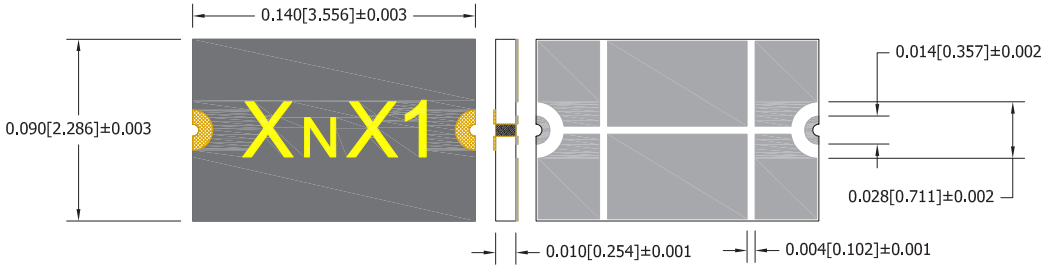


Mechanical

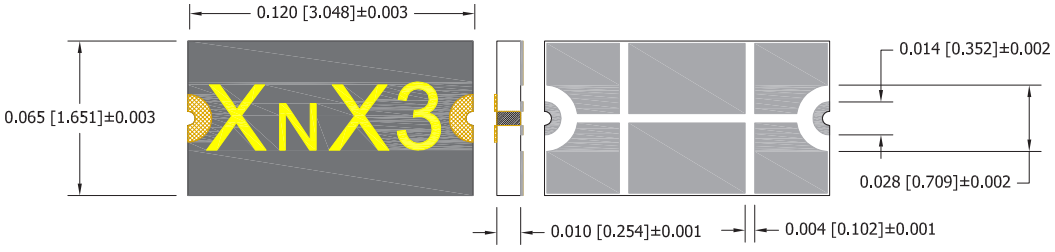
K2TVAXXNXX3



K2TVAXXNXX1SMT



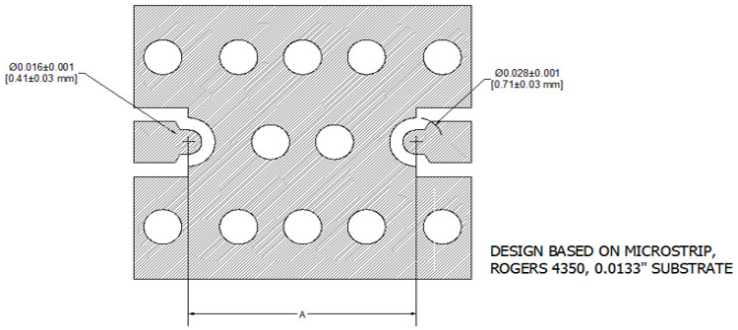
K2TVAXXNXX3SMT



Unless otherwise specified, tolerance: X.XX = ±0.01" X.XXX = ±0.001"

Suggested Mounting Footprint

	Inches	Millimeters
Part Number	A	A
K2TVAXXNXX1SMT	0.140	3.56
K2TVAXXNXX3SMT	0.12	3.05



How To Order

Specify Model Number: **K2TVAXXNXXX**

K 2 T V A		N				
1	2	3	4	5	6	7

1 Model Name	K 2 T V A Series
2 dB Value	0 3 03 dB through 0 6 06 dB
3 TCA Slope	N Negative
4 TCA Shift	0 5 05 - 0.005 and 0 7 07 - 0.007
5 Frequency Band	1 17 - 22 GHz 3 27 - 32 GHz
6 Options	S M T Surface Mount Wire Bondable
7 Terminal Finish	F RoHS Standard

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