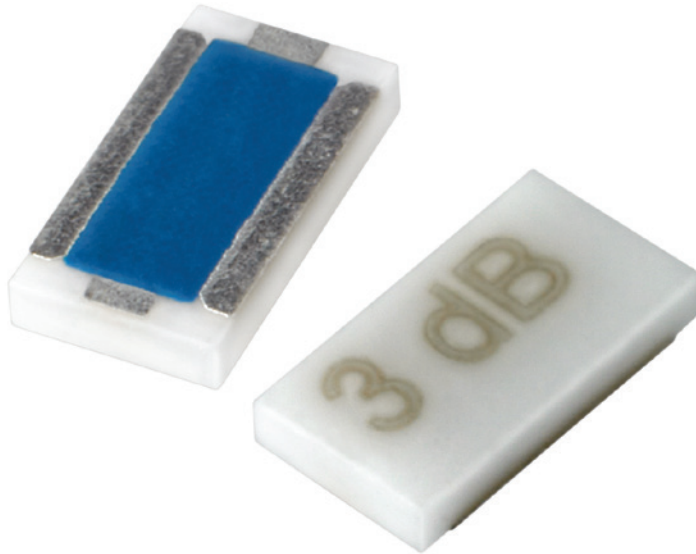


# KFA and QFA Series

## ATTENUATOR CHIP 200 MILLIWATTS



KFA and QFA Series Chip Attenuators offer proven performance and significant high reliability heritage in a commercial grade product.

Smiths Interconnect is the world leader in chip attenuators offering the widest selection of products from DC through Q band. Chip components are offered on Alumina, Aluminum Nitride, Beryllium Oxide, and CVD Diamond for a wide range of applications. Backed by proven performance and significant heritage, Smiths Interconnect is the leader in high reliability components.

The KFA and QFA platforms offers significant heritage and proven performance in a cost effective commercial grade product. High reliability tested options are also available to ensure mission success in demanding high reliability applications. Multiple band options are available between 16-50 GHz with excellent response to support a wide range of applications. The products are constructed on an Alumina substrate with rugged thick film terminations and passivated Tantalum Nitride resistive elements. The product also includes a protective coating for added protection from various environmental conditions. Multiple attenuation values and mounting configuration are available to support both surface mount and wire bond applications. Various finish options are also available including RoHS compliance.

## Features and Benefits

- Small Footprint
- Multiple Mounting Configurations
- Various Band Options Available
- Low VSWR
- Wide Range of Attenuation Values
- Tight Attenuation Tolerance
- High Reliability Options Available

## Applications

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

# Technical Characteristics

Mounting Configuration Options	KFA Wire Bondable	KFA Surface Mount	QFA Surface Mount
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## Electrical

Nominal Impedance	50 ohms		
Frequency Range	-5 (16-36 GHz)	-5 (18-27 GHz) -6 (27-36 GHz)	-4 (36-40 GHz) -5 (40-50 GHz)
Attenuation Values Available	0-10 in 1 dB Increments		
Attenuation Accuracy	± 0.75 dB		
Input Power CW	200 Milliwatts Max up to 100°C (See derating curve)		
Peak Power	2 Watts based on 10 µs pulse width @ 1% Duty Cycle		
VSWR	1.35:1 Typical	1.35:1 Typical 1.50:1 Maximum	1.50:1 Maximum

## 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	Thin Film, Tantalum Nitride	Thin Film, Tantalum Nitride
Terminal Material	Thick Film Bondable Gold	Thick Film	Thick Film
Ground Plane Material	Thick Film Solderable Gold	N/A	N/A
Protective Coating	Polymer		
Finish Options	Blank	Solder Plated (Sn60/Pb40)	N/A
	-F	Silver Plated (RoHS Compliant)	Silver Plated (RoHS Compliant)

## Marking

Unit Marking	dB Value
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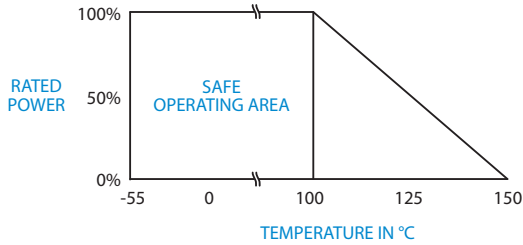
## Quality Assurance

	Sample visual and mechanical inspection - 1.0 AQL per mechanical drawing requirements
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## Packaging

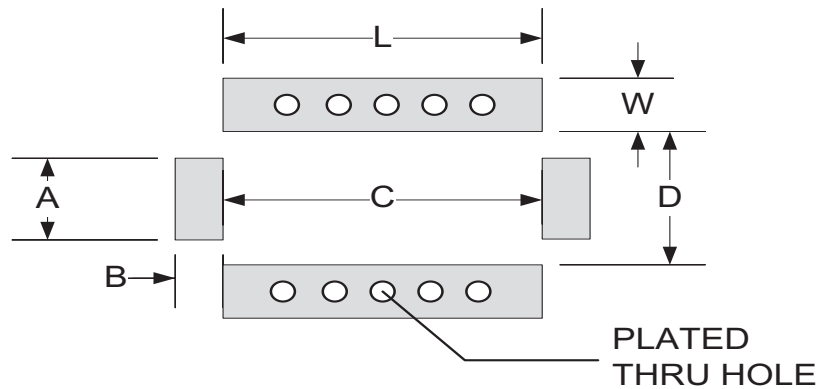
Standard Packaging	Tape and Reel or Waffle Pack
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# Power Derating Curve



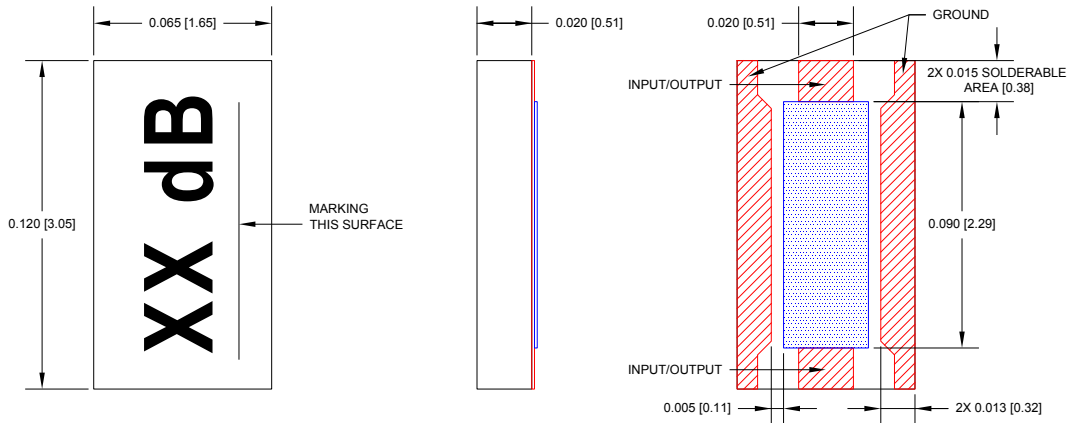
# Suggested Mounting Footprint

Part Number	Inches						Millimeters					
	A	B	C	D	L	W	A	B	C	D	L	W
QFAXXXSMTF	0.023	0.013	0.095	0.040	0.095	0.025	0.58	0.33	2.41	1.02	2.41	0.64
KFAXX.00-XSMTF												

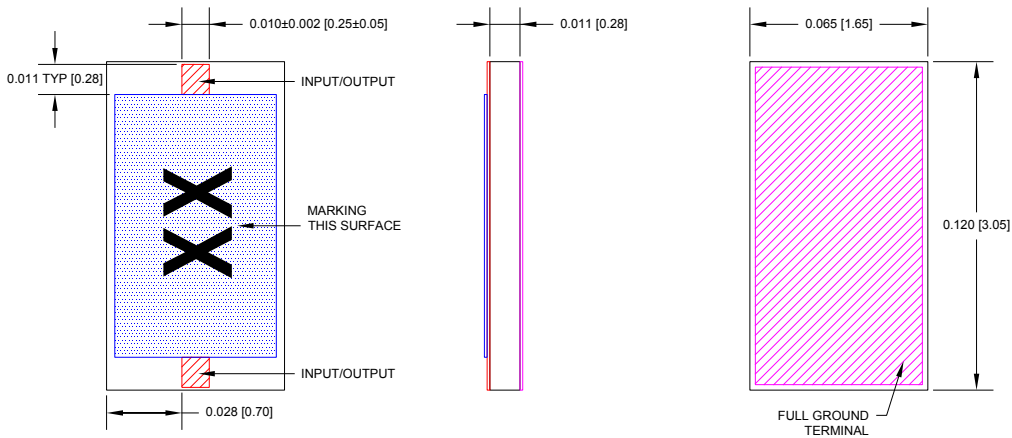


# Mechanical

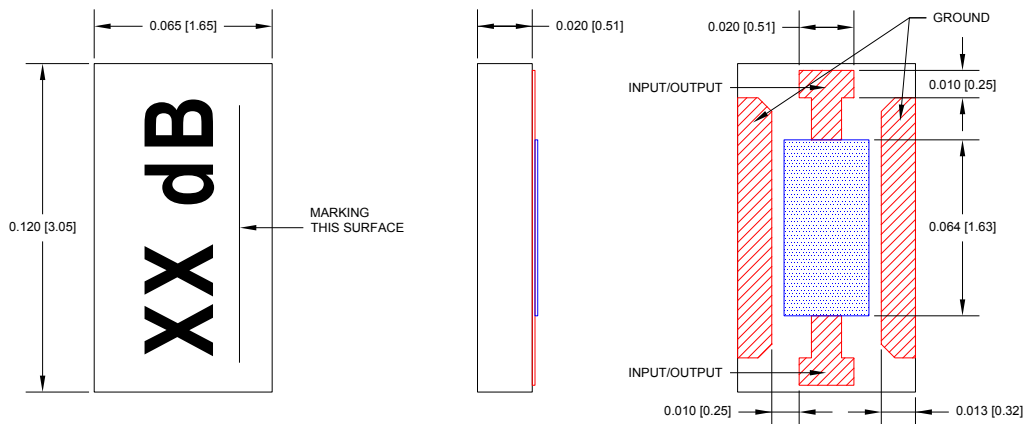
## KFA Surface Mount



## KFA Wire Bondable



## QFA Surface Mount



Unless otherwise specified, tolerance: X.XXX = ±0.005"

# How To Order

Specify Model Number: **KFAXX.00-XSMTX**

	<b>K F A</b>	<b>. 0 0</b>	<b>-</b>	<b>S M T</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>1 Series Name</b>	<b>K F A</b> KFA Series				
<b>2 Attenuation Value</b>	<b>0 0</b> 00.00 dB through		<b>1 0</b> 10.00 dB		
<b>3 Frequency Range</b>	<b>- 4</b> -4	<b>- 5</b> -5	<b>- 6</b> -6		
<b>4 Options</b>	<b>S M T</b> Surface Mount				
<b>5 Terminal Finish</b>	<input type="checkbox"/> Standard	<input checked="" type="checkbox"/> <b>F</b> RoHS			

# How To Order

Specify Model Number: **QFAXXXSMTF**

	<b>Q F A</b>		<b>0</b>	<b>S M T</b>	<b>F</b>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>1 Series Name</b>	<b>Q F A</b> QFA Series				
<b>2 Attenuation Value</b>	<b>0 0</b> 00.00 dB through		<b>1 0</b> 10.00 dB		
<b>3 Frequency Range</b>	<b>0 4</b> 04: 36-40 GHz		<b>0 5</b> 05: 40-50 GHz		
<b>4 Options</b>	<b>S M T</b> Surface Mount				
<b>5 Terminal Finish</b>	<input checked="" type="checkbox"/> <b>F</b> RoHS				

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