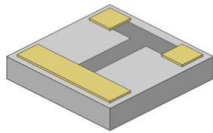
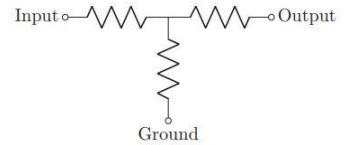
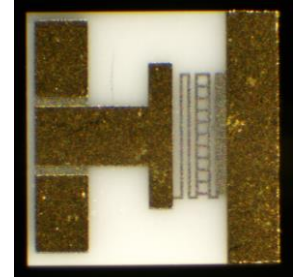
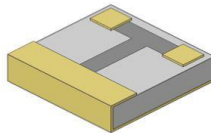


### Product Features

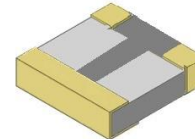
- Reduces amplitude or power of a signal by a known value. This is achieved with very little distortion of the signal, maintaining accuracy up to 40 GHz.
- Attenuators are available with or without center Taps
- Single wraps of the ground pad to a full gold backside available
- Additional Attenuator configurations, including balanced attenuators, are available as custom parts
- Can be used in Non-Magnetic Applications



Attenuator Top Contact

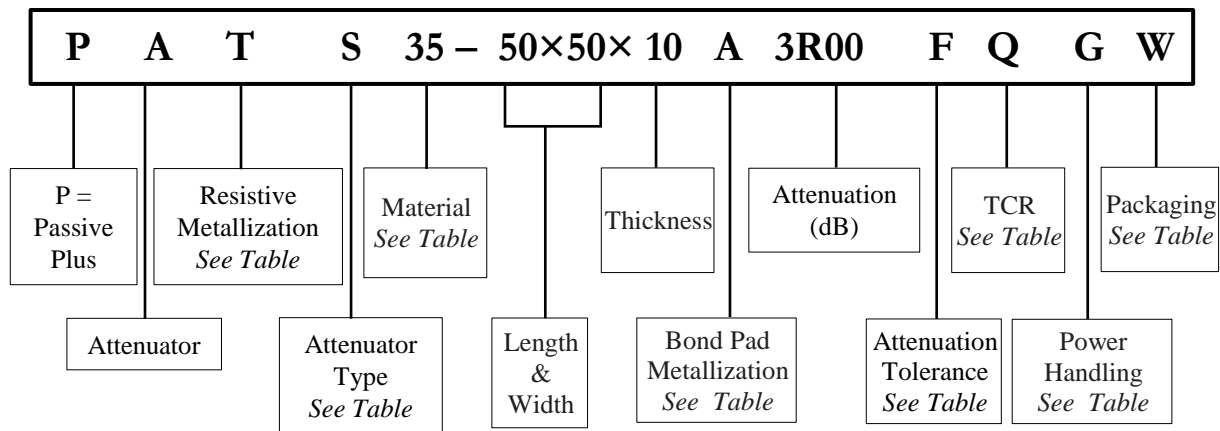


Attenuator, Single Pad Wrap



Attenuator, 3-Sided Wrap

### Part Numbering



### Resistive Materials

Code	Material	Passivation	Sheet Resistivity (Ω/ Sq)	Abs. Tolerance	Ratio Tolerance
T	Tantalum Nitride (TaN)	Self Passivating Ta <sub>2</sub> O <sub>5</sub>	5 to 270	From ±0.01%	From ±0.01%

### Attenuator Type

Code	Description
S	T-Pattern



Thin Film Products

# Attenuators – PAT Series

## Materials

(LxWxT) Dimensions (mils)	Power (W)			Value	
	Al <sub>2</sub> O <sub>3</sub>	AlN	BeO	Min	Max
<b>CODE</b>	<b>35</b>	<b>28</b>	<b>25</b>		
50x50x10	250mW	1W	2W	0.5dB	24.5dB
80x60x15	250mW	1W	2W	0.5dB	24.5dB
150x120x25	2W	8W	16W	0.5dB	24.5dB

## Bond Pad Metallizations

Code	Metallization	Description	Attachement Options
A	Pd/Au	Top Only	Wirebond, Non-Cond. Epoxy
M	TiW/Ni/Au	Single Wrap, Full GRD Place	Wirebond, Cond. Epoxy, Non-Cond. Epoxy, Eutectic Attach Solder
R	Pd/Au	Flip Chip	Wirebond, Non-Cond. Epoxy
X	TiW/Ni/Au	3-Sided Wrap	Wirebond, Cond. Epoxy, Non-Cond. Epoxy, Eutectic Attach Solder

## Attenuation Tolerance

Code	Tolerance
F	±0.1dB (-0.5 to -6.0dB)
G	±0.2dB (-6.5 to -24.5dB)

## Temperature Coefficient

Code	TC
Q*	±150 ppm/°C
V	±100 ppm/°C

## Power Handling

Code	Watts	Power Ratings assume proper heat sinking is used.
G	250mW	
K	1.0W	
L	2.0W	
R	8.0W	
Y	16.0W	

## Packaging

Code	Style
W	Waffle Pack (Standard)

Contact PPI for additional packaging options.



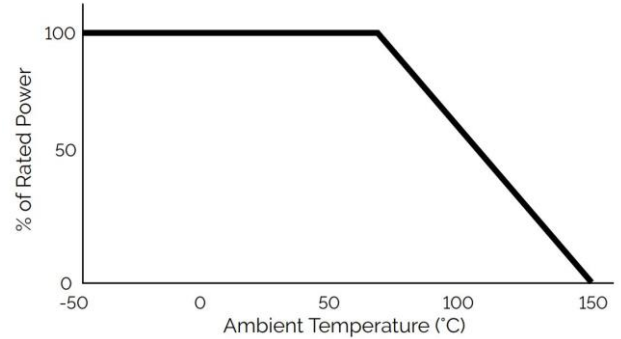
Thin Film Products

# Attenuators – PAT Series

## General Properties

Operating Temperature	-55°C to +150°C
Storage Temperature	-65°C to +150°C
Operating Frequency	DC to 40 GHz
Voltage Rating	100V maximum
Power Derating (See Chart at Right)	Full power up to 70°C Derated linearly to zero power at 150°C

Power Derating Curve



## Testing

Testing Performed	Specification / Standard
Visual Inspection	MIL-PRF-55342 MIL-STD-883
Mechanical Inspection	MIL-PRF-55342
DC Resistance	MIL-PRF-55342 MIL-STD-202
Resistance Temperature Characteristics (TCR)	MIL-PRF-55342
Short Time Overload	MIL-PRF-55342
High Temperature Exposure	MIL-PRF-55342
Thermal Shock	MIL-PRF-55342 MIL-STD-202
Resistance to Bonding Exposure	MIL-PRF-55342
Wire Bonding Integrity	MIL-PRF-55342
Life Test	MIL-PRF-55342 MIL-STD-202

## Performance Specifications

Higher power ratings, additional sizes, and custom resistors available. Please contact [sales@passiveplus.com](mailto:sales@passiveplus.com).