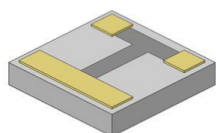
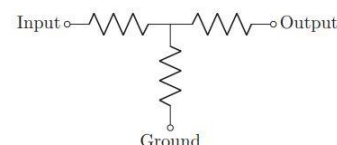
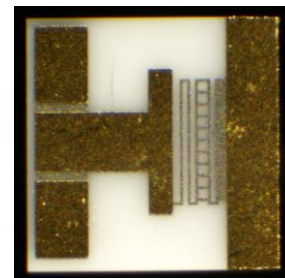


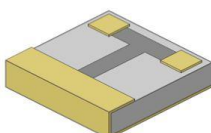
Attenuators – PAT Series

Product Features

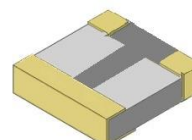
- Reduces amplitude or power of a signal by a known value. This is achieved with very little distortion of the signal, maintaining accuracy up to 40 GHz.
- Attenuators are available with or without center Taps
- Single wraps of the ground pad to a full gold backside available
- Additional Attenuator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



Attenuator Top Contact

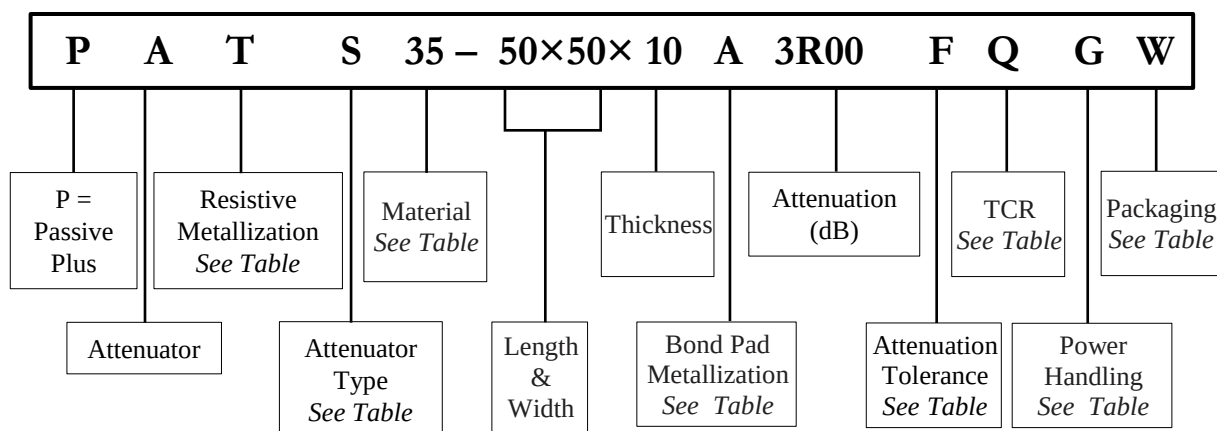


Attenuator, Single Pad Wrap



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 ₂ O ₅	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 ₂ O ₃	AlN	BeO	Min	Max
CODE	35	28	25		
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.



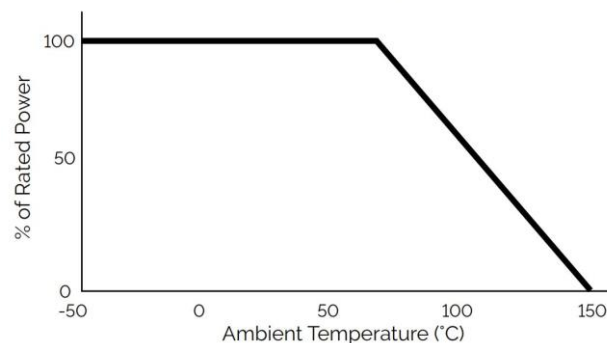
Thin Film Products

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.