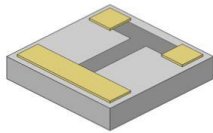
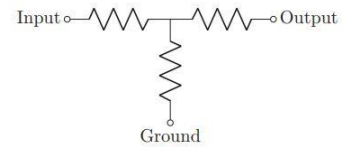
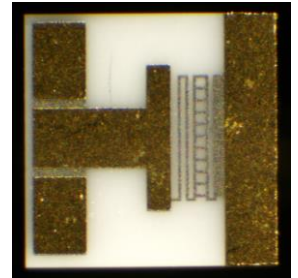


Attenuators – PAT Series

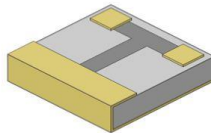


Product Features

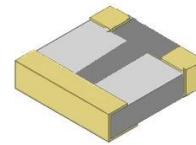
- Reduces amplitude or power of a signal by a known value. This is achieved with very little distortion of the signal, maintaining accuracy up to 40 GHz.
- Attenuators are available with or without center Taps
- Single wraps of the ground pad to a full gold backside available
- Additional Attenuator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



Attenuator Top Contact



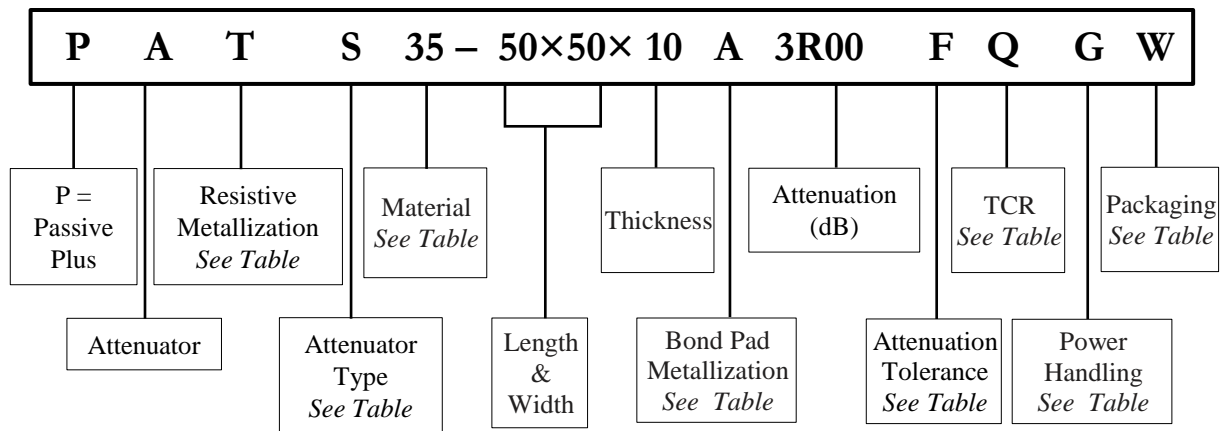
Attenuator, Single Pad Wrap



Attenuator, 3-Sided Wrap



Part Numbering



Resistive Metallizations

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



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

Metallization	Code
Top Only	A
Single Wrap, Full GRD Plane	M
Flip Chip	R
3-sided Wrap	X

Attenuation Tolerance

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

Temperature Coefficient of Resistance

TCR	Availability	Code
±150ppm	Standard	Q
±100ppm	Optional	V

Power Handling

Power	Code
250mW	G
1.0W	K
2.0W	L
8.0W	R
16.0W	Y

Power Ratings assume proper heat sinking is used.

Packaging

Code	Style
W	Waffle Pack (Standard)
G	Gel Pack

All parts are supplied in waffle packs. Other packaging may be available. Contact PPI for additional packaging options.



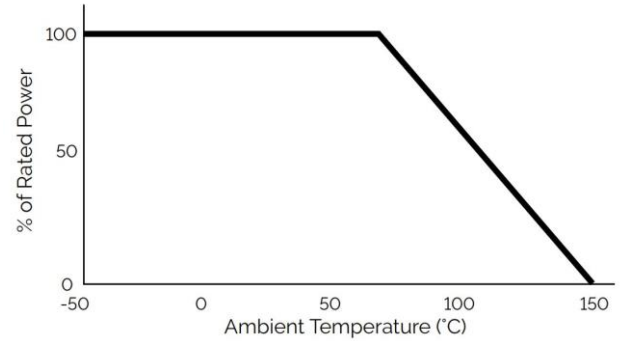
Attenuators – PAT Series



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.



Packaging

ESD waffle packs are standard. Gel pack packaging also available. Film rings are available upon request for Top Contact Attenuators only. Please contact PPI for availability.