



Product Family: [High Precision Chip Attenuators](#)

Part Number Series: [PAT Series](#)

	<p>Construction:</p> <ul style="list-style-type: none"> • High Purity Alumina Substrate • Ni alloy thin-film resistive elements • Wrap around electrodes • 100% matte tin over Ni terminations (RoHS compliant and Pb Free) 	<p>Features:</p> <ul style="list-style-type: none"> • 0402, 0603, 0805, 1206 and 1712 English case sizes • Attenuation values between 0-20dB • 50Ω impedance (75Ω also available in 1712 size) • High volume production suitable for commercial and special applications
--	--	---

Description:
 These precision chip attenuators exhibit excellent high frequency characteristics. The surface mount package is ideal for applications requiring low noise, low inductance and low parasitic capacitance. The thin film metallization provides for very stable characteristics over temperature and time.

Product Dimensions:

<p>Top Side</p>	<p>Bottom Side</p>	<p>Schematic</p>	<table border="1"> <thead> <tr> <th>Dimension</th> <th>L</th> <th>W</th> <th>H</th> <th>P1</th> <th>P2</th> <th>P3</th> </tr> </thead> <tbody> <tr> <td>PAT0510 (0402)</td> <td>0.039 ±0.002</td> <td>0.020 ±0.002</td> <td>0.013 ±0.002</td> <td>0.005 ±0.002</td> <td>0.011 ±0.002</td> <td>---</td> </tr> <tr> <td>PAT0816 (0603)</td> <td>0.063 ±0.004</td> <td>0.032 ±0.004</td> <td>0.016 ±0.004</td> <td>0.008 ±0.004</td> <td>0.016 ±0.006</td> <td>---</td> </tr> <tr> <td>PAT1220 (0805)</td> <td>0.079 ±0.004</td> <td>0.049 ±0.004</td> <td>0.016 ±0.004</td> <td>0.014 ±0.008</td> <td>0.024 ±0.008</td> <td>---</td> </tr> <tr> <td>PAT1632 (1206)</td> <td>0.126 ±0.008</td> <td>0.063 ±0.008</td> <td>0.016 ±0.004</td> <td>0.016 ±0.008</td> <td>0.039 ±0.008</td> <td>---</td> </tr> <tr> <td>PAT3042S (1712)</td> <td>0.165 ±0.008</td> <td>0.118 ±0.008</td> <td>0.032 ±0.006</td> <td>0.032 ±0.008</td> <td>0.020 ±0.008</td> <td>0.050 ±0.008</td> </tr> </tbody> </table> <p>Note: Dimensions in inches</p>	Dimension	L	W	H	P1	P2	P3	PAT0510 (0402)	0.039 ±0.002	0.020 ±0.002	0.013 ±0.002	0.005 ±0.002	0.011 ±0.002	---	PAT0816 (0603)	0.063 ±0.004	0.032 ±0.004	0.016 ±0.004	0.008 ±0.004	0.016 ±0.006	---	PAT1220 (0805)	0.079 ±0.004	0.049 ±0.004	0.016 ±0.004	0.014 ±0.008	0.024 ±0.008	---	PAT1632 (1206)	0.126 ±0.008	0.063 ±0.008	0.016 ±0.004	0.016 ±0.008	0.039 ±0.008	---	PAT3042S (1712)	0.165 ±0.008	0.118 ±0.008	0.032 ±0.006	0.032 ±0.008	0.020 ±0.008	0.050 ±0.008
Dimension	L	W		H	P1	P2	P3																																						
PAT0510 (0402)	0.039 ±0.002	0.020 ±0.002		0.013 ±0.002	0.005 ±0.002	0.011 ±0.002	---																																						
PAT0816 (0603)	0.063 ±0.004	0.032 ±0.004	0.016 ±0.004	0.008 ±0.004	0.016 ±0.006	---																																							
PAT1220 (0805)	0.079 ±0.004	0.049 ±0.004	0.016 ±0.004	0.014 ±0.008	0.024 ±0.008	---																																							
PAT1632 (1206)	0.126 ±0.008	0.063 ±0.008	0.016 ±0.004	0.016 ±0.008	0.039 ±0.008	---																																							
PAT3042S (1712)	0.165 ±0.008	0.118 ±0.008	0.032 ±0.006	0.032 ±0.008	0.020 ±0.008	0.050 ±0.008																																							
<p>Top Side</p>	<p>Bottom Side</p>	<p>Schematic</p>																																											
<p>Top Side</p>	<p>Bottom Side</p>	<p>Schematic</p>																																											

PAT Series Part Numbering: Ex: PAT1632C-3dB-T*

Product Designator	Metric Size (English)	Impedance Code	Attenuation Value	T&R Packaging Quantity	Tape Orientation **
PAT	Either 4 or 5 digits as shown below 0510S (0402) 0816 (0603) 1220 (0805) 1632 (1206) 3042S (1712)	C = 50Ω D = 75Ω (75Ω only available in PAT3042S (1712) size as shown in electrical specs table.	Either 3 or 4 digits as required (i.e. "3dB" = 3dB, "10dB" = 10dB)	-B = Bulk -T = 1,000/reel for 0816, 1632 and 3042S; 5,000/reel for 1220; 10,000/reel for 0510 (see electrical section for offerings)	-H = Ground side (bottom) facing up (full reels only) Leave blank for ground side facing down (default)

* Notes: * All part numbers will automatically have a "-LF" appended to the end of them to indicate RoHS compliance/Pb Free (RoHS 6/6).

** The 0510S/(0402 English size) product is not offered with the ground side (bottom side) facing up.

Examples:

Part Number	Size (English)	Impedance	Attenuation (dB)	Packaging	Tape Orientation
PAT0816C-3DB-B-H	0816 (0603)	(C) 50Ω	(-3DB) -3dB	(-B) Bulk (cut tape)	(-H) Ground (bottom) Up
PAT1220C-6DB-T	1220 (0805)	(C) 50Ω	(-6DB) -6dB	(-T) 5K/reel (T&R)	(blank) Ground Down

Electrical Specifications:

Type	PAT0510S			PAT0816			PAT1220	PAT1632		PAT3042S	
English Size	0402			0603			0805	1206		1712	
Metric Size	0510			0816			1220	1632		3042	
Attenuation (dB)	0~3	4~7	8~10	0~3	4~7	8~10	0~10	0~10	16	0~10	16, 20
Attenuation Tolerance (± dB)	0.3	0.5	0.7	0.3	0.5	1.0	0.3	0.3	0.5	0.3	0.5
Impedance Code (Ω)	C = 50Ω			C = 50Ω			C = 50Ω	C = 50Ω		C = 50Ω, D = 75Ω	
VSWR	<1.3			~6dB = <1.3 6-10dB = <1.5			<1.3	<1.3		50Ω = <1.2 75Ω = <1.3	
Frequency Range (GHz)	DC~10			DC~10				DC~3		50Ω = DC~3 75Ω = DC~2	
Power Rating *	32mW			63mW			100mW	125mW		250mW	
Operating Temp. Range	-55°C ~ +125°C										
Packaging (B=Bulk)	Bulk or 10,000 pcs/reel (Not offered with ground side facing up in tape. Only offered with ground side facing down)			Bulk or 1,000 pcs/reel (Offered with ground side facing up or down (H) in tape. Ground side facing down option available in full reel quantities only)			Bulk or 5,000 pcs/reel (Offered with ground side facing up or down (H) in tape. Ground side facing down option available in full reel quantities only)	Bulk or 1,000 pcs/reel (Offered with ground side facing up or down (H) in tape. Ground side facing down option available in full reel quantities only)			

Note: Contact factory for power rating of up to 10W

Recommended Land Pattern:

Part Size	A	B	C	D	E	F
0510 Metric 0402 English	0.008 to 0.016	0.012	0.010	0.020	0.028 to 0.043	0.000 to 0.012
1608 Metric 0603 English	0.016	0.032	0.008	0.016	0.063	0.008 to 0.016
1220 Metric 0805 English	0.024	0.032	0.012	0.012	0.079	0.008 to 0.020
1632 Metric 1206 English	0.039	0.047	0.016	0.032	0.126	0.008 to 0.020
3042S Metric 1712 English	0.020	0.126	0.035	0.047	0.165	0.008 to 0.020

Note: All dimensions in inches