RF POWER ATTENUATOR

The content of this specification may change without notification 10/16/07

Custom solutions are available.

ATP Series - RF Power Attenuators

Custom solutions are available. Call us with your specification requirements.

HOW TO ORDER

ATP 53 SL-10 D G M

Packaging

Impedance Tolerance
G = ±2%

Characteristic Impedance
D = 50Ω C = 75Ω

Attenuation
01 = 1dB

Package Type
D = balanced coaxial
DL = balanced, smd with leads
S = unbalanced coaxial
SL = unbalanced smd with leads
E = balanced with heat sink

Size

53 = 5.00 x 2.70	100 = 8..89 x 5.35
54 = 5.00 x 3.80	120 = 9.53 x 6.35
55 = 5.00 x 4.50	150 = 11.43 x 7.62
84 = 8.00 x 5.25	37 = 13.0 x 7.00
68 = 6.70 x 8.65	

ATP Series
RF Power Attenuators

FEATURES

- 4GHz-1/4W, 1.0GHz - 30W, 3.0GHz - 100W, 2.4GHz-120W, and 2.0GHz - 150W
- Surface Mount Small Size Attenuators
- 50Ω Characteristic Impedance
- Face down configuration on strip line show better return loss characteristics.
- Long life and temperature stability of thin film technology provide better performance at a temperature range from -55°C ~ +155 °C.

APPLICATIONS

- Gain Control Circuits
- Power Boost Amplifiers (GHz) Isolation Circuits
- Transmission Line Loss Compensation for Data Communications Systems
- Detecting signal control of ATE-LSI test system circuit board functional test systems
- Industrial measurement electronics
- Medical scientific electronics
- Communications systems

ELECTRICAL SPECIFICATIONS

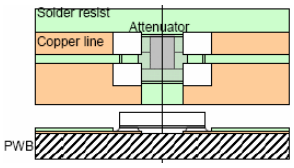
Part	Package Type	Frequency	Power Rating	Attenuation Availability	Attenuation Tolerance	Impedance
ATP37	S, D, DL	DC – 1.0 GHz	1.00 W	1db ~ 10db, 20dB, 30db, 40dB		
ATP53	S, SL	DC – 4.0 GHz	0.25 W	1db ~ 10db, 20dB, 30db, 40dB		
ATP54	D, DL	DC – 4.0 GHz	0.25 W	1db ~ 10db, 20dB, 30db, 40dB		
ATP55	S, D	DC – 4.0 GHz	0.25 W	1db ~ 10db, 20dB, 30db, 40dB		
ATP68	E	DC – 1. 0GHz	30.0 W	10 dB, 20 dB, 30dB		
ATP84	S, D	DC – 1.0 GHz	0.50 W	1db ~ 10db, 20dB, 30db, 40dB		
ATP100	D, DL	DC – 3.0 GHz	100 W	10 dB, 20 dB, 30dB, 40dB		
ATP120	D, DL	DC – 2.4 GHz	120 W	10 dB, 20 dB, 30dB, 40dB		
ATP150	D, DL	DC – 2.0 GHz	150 W	10 dB, 20 dB, 30dB, 40dB		

dB	dB Tolerance
1 ~ 6	±0.2
7 ~ 10	±0.3
20, 30, 40	±0.4

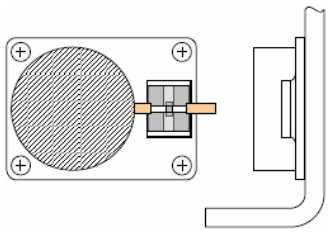
50Ω ± 1Ω
or
75Ω ± 1Ω

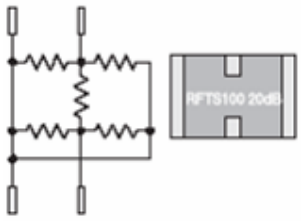
* Heat Sink will be required starting 30 WATTS.

CIRCUIT & INSTALLATION LAYOUTS

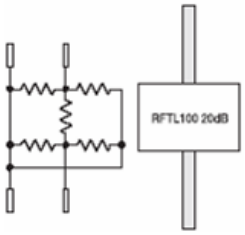


Face Down - RF Signal will be propagated straight without reflection





ATP100D, ATP120D, ATP150D



ATP100DL, ATP120DL, ATP150DL

NOTES:

1. In order to cool heat from an attenuator and to connect electrically when you attach the attenuator in a printed circuit a metal plate, reserve soldering on back side of attenuator and reflowing (re-melting) solder with solder iron are recommended.

2. In order to prevent diffusion of grounding conductor, please carry out solder processing of an attenuator quickly.

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188 Technology Drive Unit H, Irvine, CA 92618
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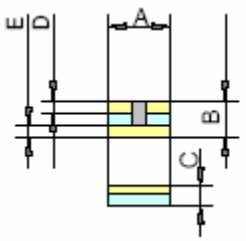
RoHS COMPLIANT 2002/95/EC

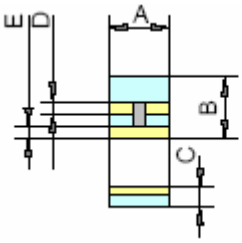
DIMENSIONS (mm)

Part	A	B	C	D	E	F	G	H	J
ATP37	13.00	7.00	0.70	2.00	1.40	-	-	-	-
ATP53	5.00	2.70	0.70	1.20	0.80	-	-	-	-
ATP54	5.00	3.80	0.70	1.20	0.80	-	-	-	-
ATP55	5.00	4.50	0.70	1.20	1.00	-	-	-	-
ATP68	6.70	8.65	1.05	1.00	0.80	-	-	-	-
ATP84	8.00	5.25	0.70	1.40	1.10	-	-	-	-
ATP100D	8.89	5.84	1.1 max	1.0	0.3	1.5	-	-	-
ATP100DL			2.2 max		-	-	0.1	6.35	1.2
ATP120D	9.53	6.35	1.1 max	1.0	0.3	1.5	-	-	-
ATP120DL			2.2 max		-	-	0.1	6.35	1.2
ATP150D	11.43	7.62	1.1 max	1.0	0.3	1.5	-	-	-
ATP150DL			2.2 max		-	-	0.1	6.35	1.2

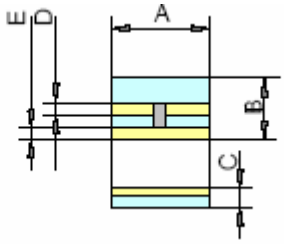
SCHEMATIC



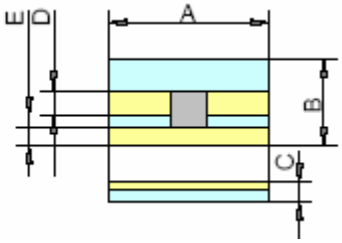
ATP53S



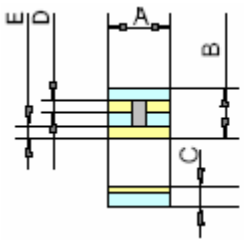
ATP55S



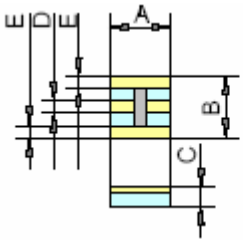
ATP84S



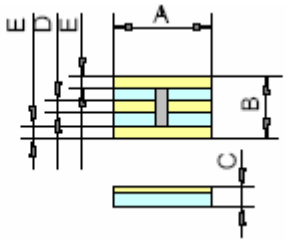
ATP37S



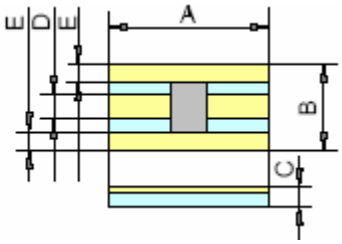
ATP54S



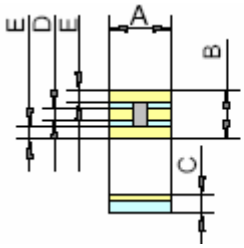
ATP55D



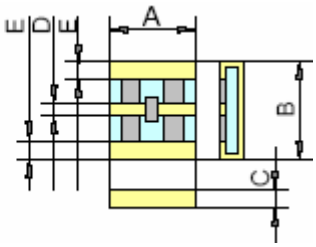
ATP84D



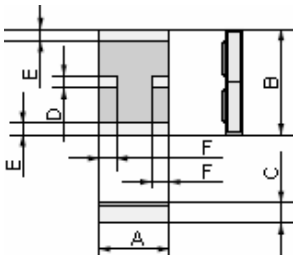
ATP37D



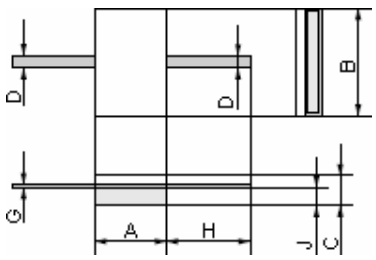
ATP54D



ATP68D



ATP100D, 120D, 150D



ATP100DL, 120DL, 150DL

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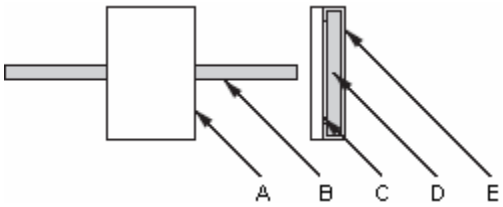
PERFORMANCE SPECIFICATION

Item	ATP37, ATP53S, ATP54D, ATP84	ATP100, ATP120, ATP150	Test Condition
Characteristic Impedance	50Ω default		Available in 75Ω
Impedance Tolerance	±2%		Input DC resistance in terminating output with resistors
Attenuation Tolerance	Refer to electrical specifications		Output DC volt in terminating output with resistor when stable 1V DC volt source connect to input.
TC of Impedance	±50ppm/°C		TC of input DC resistance in terminating output with resistor
TC of Attenuation	±50ppm/°C		TC of output DC volt in terminating output with resistor when stable 1V DC volt source connect to input
Temperature Rating	-55°C ~ +70°C	-55°C ~ 100°C	
Soldering Heat	±1%		350°C, 3 seconds dipping
Solder Capability	95% covered		
Humidity	±1%		Input DC resistance change under condition of 40°C temp.l and 90-95% RH, rating powering On-90min., Off-30 min., 1000 hours
Load Life	±1%		Input DC resistance change under condition of 70°C temp. rating power On-90 min., Off-30 min., 1000 hours
Operating & Storage Temp.	-55°C ~ 155°C		

DERATING CURVE

Back Plate Temperature

MATERIALS



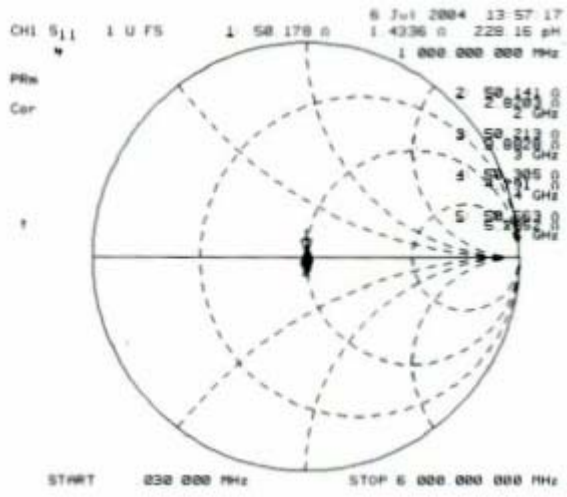
	Name	Material	Finish
A	Cover	Alumina	
B	Beam Lead	Cu Alloy	Au Plating
C	Contact	Epoxy	
D	Substrate	AIN	
E	Conductor	Cu	Tin Plating

RF CHARACTERISTICS – ATP100, ATP120, ATP150

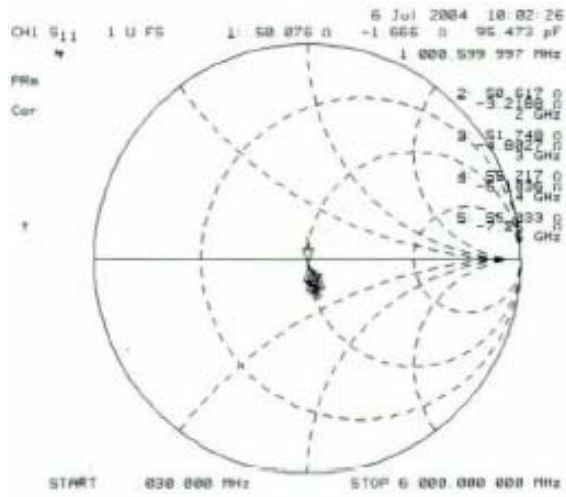
Frequency	S11		S21		S12		S22	
MHz	R	X	R	X	R	X	R	X
1	50.143	-9.765m	60.975	0.0918	60.959	0.0859	50.107	0.0156
3	50.199	-44.203	60.953	0.1523	60.986	0.1367	50.119	0.0586
10	50.186	-101.42m	60.99	0.2754	60.99	0.2441	50.092	0.1777
30	50.141	-277.34m	60.971	0.7324	60.971	0.7168	49.994	0.5155
100	50.049	-917.97m	60.682	2.4414	60.687	2.4355	49.223	0.6194
300	49.297	-2.6406	58.473	6.6932	58.457	6.6621	47.293	-8.162
1000	42.735	-4.640	45.205	8.1602	45.199	8.1582	59.344	4.335
3000	36.666	20.432	60.824	-3.0201	60.803	-3.221	46.342	-23.73
6000	69.941	-59.055	58.973	-8.752	58.969	-8.709	32.661	22.164

RF CHARACTERISTICS – ATP53, ATP54, ATP55, ATP68, ATP85, ATP37

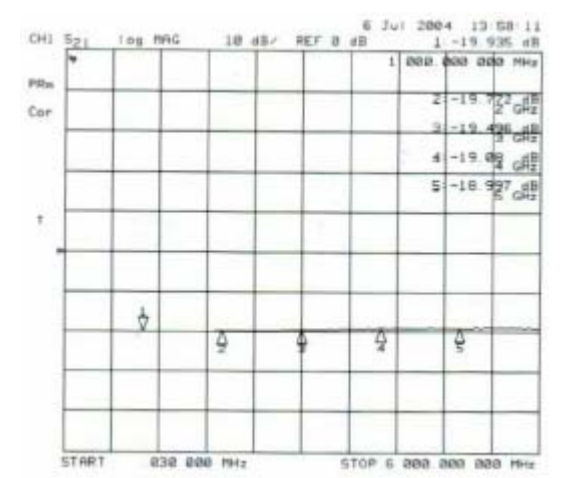
ATP55D-20DGM Impedance



ATP55D-40DGM Impedance

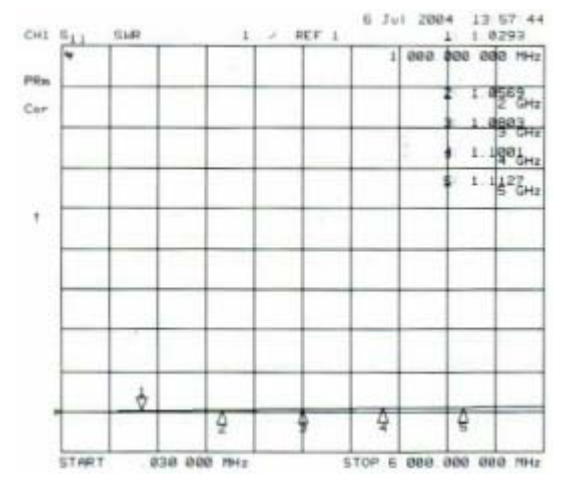


ATP55D-20DGM Attenuation



ATP55D-40DGM Attenuation

ATP55D-20DGM VSWR



ATP55D-40DGM VSWR