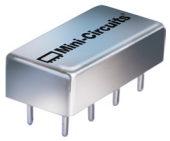
Plug-In

Attenuator/Switch

50Ω Bi-Phase 100 to 2000 MHz

PAS-2000+



CASE STYLE: A05

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Control Current	30mA

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

INPUT	1
OUTPUT	8
CONTROL	3
GROUND	2,5,6,7
CASE GROUND	2,5,6,7
NOT USED	4

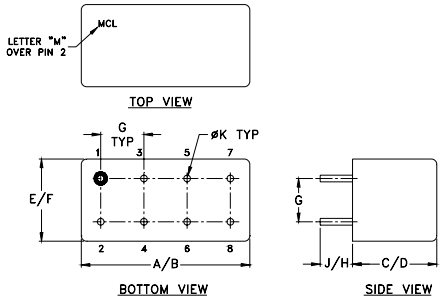
Features

- wideband, 100 to 2000 MHz
- excellent amplitude and phase unbalance
- low profile, rugged shielded case

Applications

- bi-phase modulator

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F
.770	.800	.240	.250	.370	.400
19.56	20.32	6.10	6.35	9.40	10.16

G	H	J	K		wt
.200	.20	.14	.031		grams
5.08	5.08	3.56	0.79		3.7

Attenuator/Switch Electrical Specifications

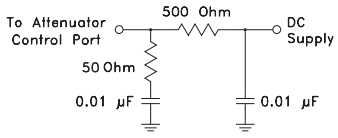
FREQUENCY (MHz)		INSERTION LOSS (dB) ±20 mA				MAX. INPUT PWR (dBm) ±20 mA		IN-OUT ISOLATION (dB) 0 mA						BI-PHASE $\overline{X}$ (±20 mA) Typ.			
		Mid-Band m		Total Range				L		M		U		Δ AMP (dB)		Phase (deg.) deviation from 180°	
IN f_L-f_U	CON	Typ.	Max.	Typ.	Max.	1 dB compr.	no damage	Typ.	Min.	Typ.	Min.	Typ.	Min.	m	Total Range	m	Total Range
100-2000	DC-0.5	4.2	6.5	5.4	7.5	19*	25	30	22	—	—	26	20	0.3	0.4	5.0	8.0

L = low range [f_L to 10 f_L] M = mid range [10 f_L to f_U/2] U = upper range [f_U/2 to f_U] m = [2 f_L to f_U/2]

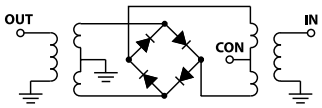
* 15 dBm from 100-800 MHz.

Performance specifications apply for input power up to 10 dB below stated 1 dB compression.

suggested control port biasing configuration



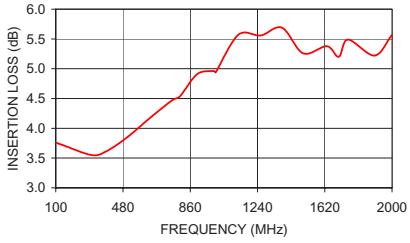
electrical schematic



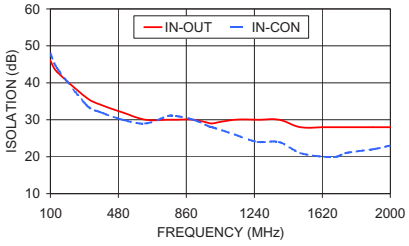
Typical Performance Data

Freq. (MHz)	I. Loss (dB) at 20mA		±Control ΔΔAMP (dB)	20mA ΔΔPhase (deg.)	Isolation (dB) (in-out)	Isolation (dB) (in-con)	Input R. Loss (dB)	Control Current (mA)	Attenuation (dB) 100 MHz	1000 MHz	2000 MHz	Phase Δ ref at 15mA Ctrl 100 MHz deg.	1000 MHz deg.	2000 MHz deg.	Input VSWR 100 MHz	1000 MHz	2000 MHz
	$\overline{x}$	σ	$\overline{x}$	$\overline{x}$	$\overline{x}$	$\overline{x}$	$\overline{x}$										
100.0	3.76	0.01	0.02	179.40	46.00	48.00	9.50	0.00	51.00	38.90	34.40	89.60	18.60	46.60	1.60	4.70	2.90
137.1	3.72	0.00	0.01	179.00	43.00	44.00	10.20	0.00	48.50	37.00	33.90	91.30	12.90	42.20	1.60	4.70	2.90
301.5	3.55	0.00	0.03	178.20	36.00	34.00	11.00	0.00	46.30	35.10	33.20	89.80	8.70	35.10	1.60	4.60	2.90
383.8	3.61	0.00	0.04	177.70	34.00	32.00	10.50	0.00	44.10	33.60	32.70	85.50	5.80	31.00	1.50	4.60	2.90
503.4	3.85	0.01	0.08	177.10	32.00	30.00	9.30	0.00	42.30	32.40	32.10	84.80	2.40	27.00	1.50	4.60	2.90
630.4	4.17	0.03	0.18	176.40	30.00	29.00	7.90	0.00	39.10	30.80	31.20	78.50	-1.40	21.20	1.50	4.60	2.90
757.5	4.47	0.06	0.21	176.30	30.00	31.00	6.90	0.00	36.50	29.70	30.60	71.50	-4.80	16.80	1.50	4.50	2.90
802.4	4.54	0.06	0.22	176.40	30.00	31.00	6.70	0.00	30.20	26.80	28.70	53.50	-12.00	6.90	1.50	4.40	2.80
899.5	4.91	0.11	0.27	176.10	30.00	30.00	6.30	0.00	25.50	24.00	26.30	43.00	-15.60	-0.90	1.40	4.20	2.70
996.7	4.96	0.11	0.28	175.90	29.00	28.00	6.20	0.00	22.00	21.20	23.60	36.60	-16.40	-5.90	1.40	4.00	2.60
1004.2	4.94	0.12	0.28	175.80	29.00	28.00	6.20	0.00	18.40	18.10	20.30	31.00	-16.00	-8.80	1.30	3.70	2.40
1131.3	5.57	0.16	0.36	175.70	30.00	26.00	6.40	0.00	14.10	14.10	15.90	24.30	-13.70	-9.80	1.20	3.30	2.00
1258.3	5.56	0.11	0.36	175.50	30.00	24.00	7.00	0.01	11.30	11.50	13.00	19.50	-11.10	-8.90	1.20	3.10	1.80
1377.9	5.69	0.05	0.37	175.50	30.00	24.00	7.70	0.01	9.10	9.50	10.60	14.80	-8.60	-7.50	1.30	3.00	1.60
1497.5	5.26	0.05	0.33	175.20	28.00	21.00	8.70	0.02	6.90	7.70	8.30	9.50	-5.50	-5.40	1.50	2.90	1.40
1632.1	5.38	0.05	0.27	174.70	28.00	20.00	10.00	0.04	5.90	6.90	7.20	6.70	-4.00	-4.00	1.60	2.90	1.40
1699.4	5.20	0.07	0.29	174.20	28.00	20.00	10.80	0.10	4.80	6.00	6.00	3.20	-2.00	-2.10	1.80	3.00	1.50
1751.7	5.49	0.07	0.27	174.20	28.00	21.00	11.30	0.31	4.30	5.50	5.40	1.30	-0.90	-1.00	1.90	3.00	1.60
1901.2	5.22	0.09	0.23	173.00	28.00	22.00	12.40	1.55	4.00	5.30	5.00	0.40	-0.40	-0.40	2.00	3.00	1.70
2000.0	5.57	0.16	0.25	172.70	28.00	23.00	12.50	15.11	3.90	5.20	4.90	0.10	-0.10	0.00	2.00	3.10	1.70

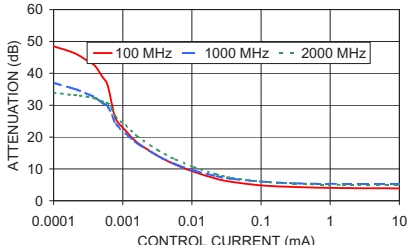
PAS-2000+
INSERTION LOSS



PAS-2000+
ISOLATION



PAS-2000+
ATTENUATION



Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp