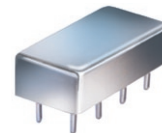


Plug-In Attenuator/Switch

50Ω Bi-Phase 10 to 1000 MHz

GAS-2



CASE STYLE: A05
PRICE: \$18.20 ea. QTY. (1-9)

Maximum Ratings

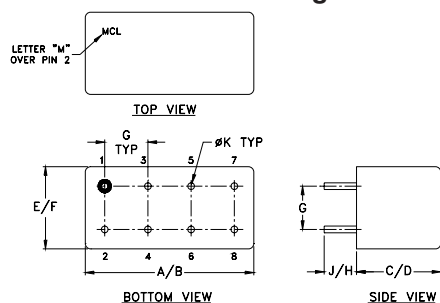
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Control Current	30mA
Permanent damage may occur if any of these limits are exceeded.	

Pin Connections

INPUT	1
OUTPUT	8
CONTROL	3,4^
GROUND	2,5,6,7
CASE GROUND	2,5,6,7

^ pins must be connected together externally

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

Features

- wideband, 10 to 1000 MHz
- rugged shielded case

Applications

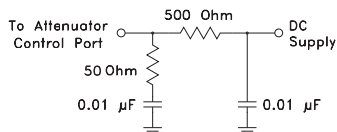
- bi-phase modulator
- electronic attenuator

Attenuator/Switch Electrical Specifications

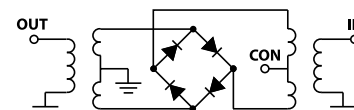
FREQUENCY (MHz)	INSERTION LOSS (dB) ±20 mA	MAX. INPUT PWR (dBm) ±20 mA	IN-OUT ISOLATION (dB) 0 mA						BI-PHASE X̄ (±20 mA) Typ.											
			L		M		U		Δ AMP (dB)		Phase (deg.) deviation from 180°									
IN f _L -f _U	CON	Mid-Band m	Typ.	Max.	Total Range Typ.	Max.	1 dB compr.	no damage	Typ.	Min.	Typ.	Min.	Typ.	Min.	Total Range m	Typ.	Min.	Total Range m	Typ.	Min.
10-1000	DC-0.05	4.3	6	5.2	8.5	20	25	55	40	35	25	28	20	0.10	0.3	1.5	3.0			

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

suggested control port biasing configuration

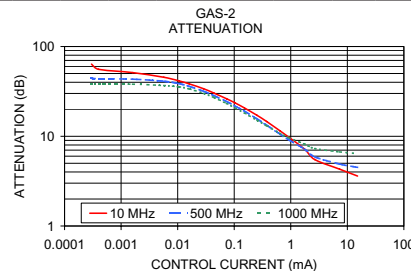
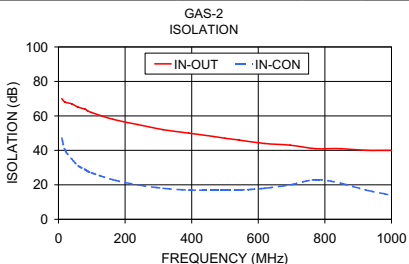
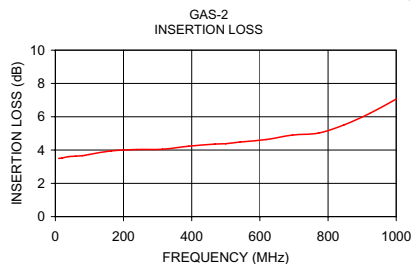


electrical schematic



Typical Performance Data

Freq. (MHz)	I. Loss (dB) at 20mA		±Control, 20mA		Isolation (dB) (in-out) (in-con)		Input R. Loss (dB)	Control Current (mA)	Attenuation (dB)			Phase Δ ref at 15mA Ctrl			Input VSWR		
	̄	σ	ΔAMP (dB)	ΔPhase (deg.)	̄	̄			10 MHz	500 MHz	1000 MHz	10 MHz	500 MHz	1000 MHz	10 MHz	500 MHz	1000 MHz
10.0	3.50	0.025	0.01	180.00	70	47	12.3	0.0000	71.8	43.8	38.2	-37.1	96.0	63.6	3.6	2.9	7.5
19.9	3.52	0.015	0.01	180.00	68	40	12.7	0.0003	63.7	44.2	38.1	-34.3	93.2	62.4	3.6	2.9	7.5
39.7	3.61	0.008	0.01	179.90	67	35	12.6	0.0004	55.7	43.8	38.1	-12.5	86.0	57.8	3.6	2.9	7.5
59.5	3.63	0.006	0.01	179.90	65	31	12.5	0.0016	51.2	43.3	38.1	-8.5	80.1	52.8	3.6	2.8	7.4
79.3	3.66	0.006	0.01	179.90	64	29	12.5	0.0057	45.4	41.1	36.8	-4.6	55.5	35.7	3.6	2.8	7.3
86.7	3.68	0.006	0.01	179.90	63	28	12.5	0.0105	41.5	38.6	35.6	-1.2	42.6	23.4	3.5	2.8	7.1
99.1	3.73	0.006	0.01	179.90	62	27	12.4	0.0161	38.3	36.0	33.7	1.5	34.4	12.9	3.5	2.8	6.9
163.5	3.95	0.006	0.01	179.80	58	23	12.3	0.0286	33.9	31.8	30.1	3.6	24.5	0.6	3.4	2.7	6.6
237.7	4.03	0.007	0.01	179.70	55	20	12.1	0.0437	30.3	28.4	27.1	4.3	20.7	-5.6	3.3	2.6	6.2
314.4	4.05	0.008	0.01	179.37	52	18	12.0	0.0734	26.2	24.4	23.2	5.1	16.3	-9.9	3.1	2.4	5.6
391.2	4.23	0.012	0.02	179.60	50	17	12.1	0.1029	23.6	21.8	20.8	5.0	14.4	-11.4	2.9	2.3	5.2
467.9	4.36	0.017	0.04	179.60	48	17	12.3	0.1510	20.7	19.1	18.2	5.0	12.8	-11.9	2.7	2.1	4.7
500.1	4.38	0.021	0.04	179.60	47	17	12.4	0.2540	17.1	15.6	15.1	4.6	10.4	-11.1	2.4	1.8	4.0
542.1	4.48	0.027	0.06	179.50	46	17	12.5	0.3743	14.6	13.3	13.1	4.3	9.0	-9.9	2.1	1.6	3.6
618.9	4.63	0.040	0.10	179.50	44	18	12.6	0.6438	11.5	10.6	10.8	3.5	6.9	-7.5	1.7	1.3	3.1
695.6	4.90	0.053	0.13	179.60	43	20	12.1	0.9350	9.7	9.1	9.6	3.0	5.4	-6.0	1.5	1.2	2.9
772.3	5.02	0.064	0.16	179.38	41	23	10.8	1.7496	7.2	7.2	8.2	2.0	3.6	-3.6	1.2	1.1	2.7
846.6	5.51	0.073	0.16	179.70	41	21	9.1	2.6537	5.5	5.9	7.3	1.3	1.9	-1.8	1.2	1.3	2.7
923.3	6.21	0.087	0.21	179.80	40	17	7.5	7.3045	4.3	4.9	6.7	0.5	0.6	-0.7	1.4	1.5	2.6
1000.0	7.06	0.093	0.36	180.40	40	14	6.3	15.1437	3.6	4.5	6.4	0.1	0.1	-0.1	1.5	1.6	2.6



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

REV. OR
M96904
GAS-2
WP/TD/CP
071003

IF/RF MICROWAVE COMPONENTS