

Coaxial Attenuator/Switch

50Ω Bi-Phase 1 to 200 MHz

ZAS-3



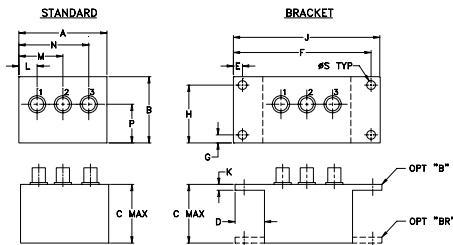
Maximum Ratings

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.	

Coaxial Connections

INPUT	3
OUTPUT	1
CONTROL	2

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H		
2.25	1.38	1.24	.50	.150	3.100	.138	1.238		
57.15	35.05	31.50	12.70	3.81	78.74	3.51	31.45		
J	K	L	M	N	P	S	wt		
3.25	.10	.40	1.15	1.86	.64	.150	grams		
82.55	2.54	10.16	29.21	47.24	16.26	3.81	74.0		

Features

- wideband, 1 to 200 MHz
- rugged shielded case
- excellent phase and amplitude unbalance
- low insertion loss, 1.6 dB typ.

Applications

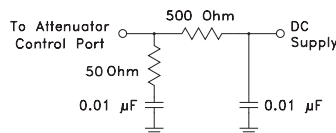
- bi-phase modulator
- electronic attenuator

Attenuator/Switch Electrical Specifications

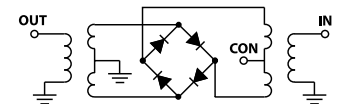
FREQUENCY (MHz)	INSERTION LOSS (dB) ±20 mA	MAX. INPUT PWR (dBm) ±20mA	IN-OUT ISOLATION (dB) 0 mA						BI-PHASE X (±20 mA) Typ.								
			Mid-Band m		Total Range		L		M		U		Δ AMP (dB)		Phase (deg.) deviation from 180°		
IN f _L -f _U	CON	1 dB compr.	no damage	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	m	Total Range	m	Total Range
1-200	DC-0.05	15	30	1.4	2	1.6	2.5	65	50	50	40	50	35	0.10	0.1	0.5	1.0

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

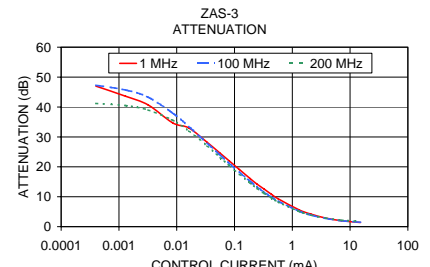
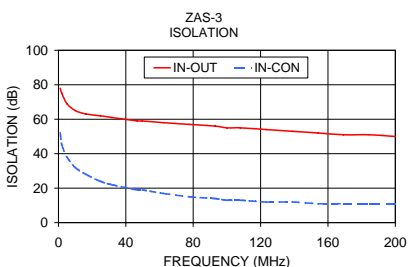
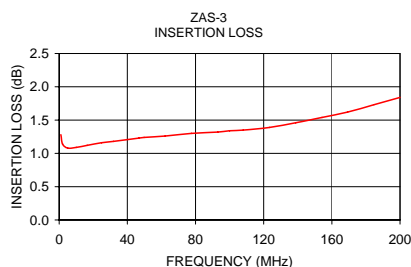


electrical schematic



Typical Performance Data

Freq. (MHz)	I. Loss (dB) at 20mA	±Control ΔΔAMP (dB)	20mA ΔΔPhase (deg.)	Isolation (dB) (in-out)	Input R. Loss (dB)	Control Current (mA)	Attenuation (dB)			Phase Δ ref at 15mA Ctrl deg.			Input VSWR				
							1 MHz	100 MHz	200 MHz	1 MHz	100 MHz	200 MHz	1 MHz	100 MHz	200 MHz		
x	σ	x	x	x	x												
1.0	1.28	0.002	0.01	180.0	78	52	23.5	0.0000	50.3	47.8	41.7	26.3	69.1	69.7	13.6	11.6	8.1
2.0	1.14	0.002	0.01	180.0	75	45	28.1	0.0004	47.0	47.3	41.2	19.0	65.6	65.4	13.5	11.6	8.1
5.0	1.08	0.002	0.01	180.0	69	38	35.4	0.0013	43.6	45.7	40.5	10.3	50.0	58.2	13.3	11.5	8.0
10.0	1.09	0.002	0.01	180.0	65	32	43.0	0.0032	40.7	43.3	39.0	5.7	36.8	46.4	12.9	11.3	7.9
16.4	1.12	0.002	0.01	179.9	63	28	42.7	0.0085	34.7	38.0	35.6	6.3	20.9	29.7	12.5	10.9	7.7
24.9	1.16	0.002	0.01	179.9	62	24	37.5	0.0162	33.0	33.5	32.0	6.6	12.3	19.1	11.7	10.3	7.4
31.8	1.18	0.002	0.01	179.9	61	22	35.2	0.0336	28.2	27.9	27.0	7.2	7.0	10.3	10.5	9.2	6.8
46.8	1.23	0.001	0.02	179.8	59	19	31.6	0.0567	24.5	23.9	23.1	7.5	4.7	6.0	9.3	8.1	6.1
49.8	1.24	0.001	0.02	179.8	59	19	31.0	0.0807	22.0	21.2	20.5	7.7	3.9	4.3	8.3	7.3	5.6
62.2	1.26	0.002	0.02	179.8	58	17	28.7	0.1215	19.1	18.2	17.5	7.5	3.0	2.9	7.1	6.2	4.9
77.6	1.30	0.001	0.02	179.7	57	15	26.4	0.1860	16.1	15.2	14.6	7.1	2.4	1.8	5.8	5.1	4.2
93.0	1.32	0.001	0.02	179.6	56	14	24.4	0.2459	14.2	13.3	12.8	6.5	2.1	1.4	5.0	4.5	3.7
100.0	1.34	0.001	0.02	179.6	55	13	23.5	0.3285	12.5	11.5	11.1	6.3	1.8	1.1	4.3	3.8	3.2
108.0	1.35	0.001	0.02	179.6	55	13	22.6	0.4365	10.8	9.9	9.6	5.7	1.6	0.9	3.6	3.3	2.8
123.4	1.39	0.001	0.02	179.5	54	12	21.0	0.5714	9.3	8.5	8.2	5.1	1.4	0.7	3.1	2.8	2.5
138.8	1.46	0.001	0.02	179.5	53	12	19.5	1.3114	5.6	5.2	5.1	3.3	0.8	0.3	2.0	1.9	1.7
154.2	1.54	0.001	0.02	179.4	52	11	18.2	2.0989	4.2	3.9	3.9	2.3	0.6	0.3	1.6	1.6	1.5
169.2	1.62	0.001	0.02	179.5	51	11	17.0	3.7220	2.9	2.8	2.9	1.3	0.3	0.1	1.3	1.3	1.3
184.6	1.73	0.001	0.02	179.5	51	11	15.9	7.0357	2.0	2.0	2.2	0.5	0.2	0.0	1.2	1.2	1.2
200.0	1.84	0.002	0.03	179.6	50	11	14.8	15.1415	1.4	1.5	1.8	0.0	0.0	0.0	1.1	1.1	1.1



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