Coaxial

Attenuator/Switch

ZFAS-2000+

50Ω Bi-Phase 100 to 2000 MHz

CASE STYLE: K18

Connectors	Model
SMA	ZFAS-2000+
BRACKET (OPTION "B")	

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	2
OUTPUT	1
CONTROL	3

Features

- wideband, 100 to 2000 MHz
- rugged shielded case

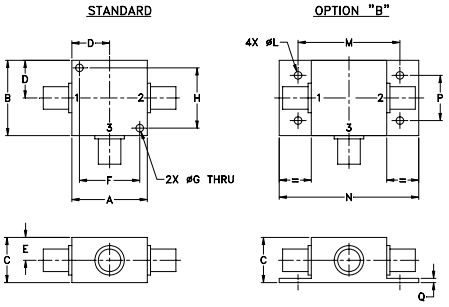
Applications

- bi-phase modulator

+RoHS Compliant

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

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	1.00	.125	1.000
31.75	31.75	19.05	16.00	9.65	25.40	3.18	25.40

J	K	L	M	N	P	Q	wt
--	--	.125	1.688	2.18	.75	.07	grams
--	--	3.18	42.88	55.37	19.05	1.78	70.0

Attenuator/Switch Electrical Specifications

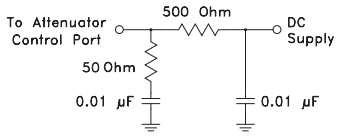
FREQUENCY (MHz)		INSERTION LOSS (dB) ±20 mA				MAX. INPUT PWR (dBm) ±20mA		IN-OUT ISOLATION (dB) 0 mA						BI-PHASE $\overline{X}$ (±20 mA) Typ.			
		Mid-Band m		Total Range				L		M		U		Δ AMP (dB)		Phase (deg.) deviation from 180°	
IN f_L-f_U	CON	Typ.	Max.	Typ.	Max.	1 dB compr.	no damage	Typ.	Min.	Typ.	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]

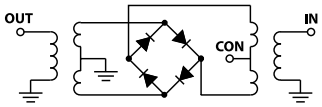
* 15 dBm from 100-800 MHz.

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

suggested control port biasing configuration



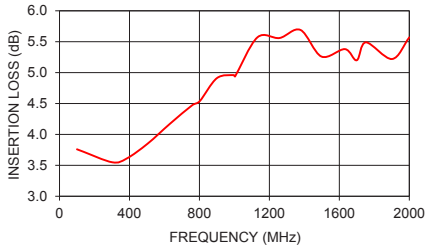
electrical schematic



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	Attenuation (dB) 1000 MHz	Attenuation (dB) 2000 MHz	Phase Δ ref at 15mA Ctrl 100 MHz deg.	Phase Δ ref at 15mA Ctrl 1000 MHz deg.	Phase Δ ref at 15mA Ctrl 2000 MHz deg.	Input VSWR 100 MHz	Input VSWR 1000 MHz	Input VSWR 2000 MHz
	$\overline{x}$	σ	$\overline{x}$	$\overline{x}$	$\overline{x}$	$\overline{x}$	$\overline{x}$										
100.0	3.76	0.006	0.02	179.4	46	48	9.5	0.0000	51.0	38.9	34.4	89.6	18.6	46.6	1.6	4.7	2.9
137.1	3.72	0.003	0.01	179.0	43	44	10.2	0.0001	48.5	37.0	33.9	91.3	12.9	42.2	1.6	4.7	2.9
301.5	3.55	0.001	0.03	178.2	36	34	11.0	0.0002	46.3	35.1	33.2	89.8	8.7	35.1	1.6	4.6	2.9
383.8	3.61	0.001	0.04	177.7	34	32	10.5	0.0003	44.1	33.6	32.7	85.5	5.8	31.0	1.5	4.6	2.9
503.4	3.85	0.010	0.08	177.1	32	30	9.3	0.0004	42.3	32.4	32.1	84.8	2.4	27.0	1.5	4.6	2.9
630.4	4.17	0.027	0.18	176.4	30	29	7.9	0.0005	39.1	30.8	31.2	78.5	-1.4	21.2	1.5	4.6	2.9
757.5	4.47	0.059	0.21	176.3	30	31	6.9	0.0006	36.5	29.7	30.6	71.5	-4.8	16.8	1.5	4.5	2.9
802.4	4.54	0.061	0.22	176.4	30	31	6.7	0.0007	30.2	26.8	28.7	53.5	-12.0	6.9	1.5	4.4	2.8
899.5	4.91	0.107	0.27	176.1	30	30	6.3	0.0008	25.5	24.0	26.3	43.0	-15.6	-0.9	1.4	4.2	2.7
996.7	4.96	0.114	0.28	175.9	29	28	6.2	0.0011	22.0	21.2	23.6	36.6	-16.4	-5.9	1.4	4.0	2.6
1004.2	4.94	0.118	0.28	175.8	29	28	6.2	0.0016	18.4	18.1	20.3	31.0	-16.0	-8.8	1.3	3.7	2.4
1131.3	5.57	0.162	0.36	175.7	30	26	6.4	0.0032	14.1	14.1	15.9	24.3	-13.7	-9.8	1.2	3.3	2.0
1258.3	5.56	0.105	0.36	175.5	30	24	7.0	0.0058	11.3	11.5	13.0	19.5	-11.1	-8.9	1.2	3.1	1.8
1377.9	5.69	0.045	0.37	175.5	30	24	7.7	0.0106	9.1	9.5	10.6	14.8	-8.6	-7.5	1.3	3.0	1.6
1497.5	5.26	0.053	0.33	175.2	28	21	8.7	0.0226	6.9	7.7	8.3	9.5	-5.5	-5.4	1.5	2.9	1.4
1632.1	5.38	0.045	0.27	174.7	28	20	10.0	0.0381	5.9	6.9	7.2	6.7	-4.0	-4.0	1.6	2.9	1.4
1699.4	5.20	0.068	0.29	174.2	28	20	10.8	0.1031	4.8	6.0	6.0	3.2	-2.0	-2.1	1.8	3.0	1.5
1751.7	5.49	0.068	0.27	174.2	28	21	11.3	0.3098	4.3	5.5	5.4	1.3	-0.9	-1.0	1.9	3.0	1.6
1901.2	5.22	0.090	0.23	173.0	28	22	12.4	1.5487	4.0	5.3	5.0	0.4	-0.4	-0.4	2.0	3.0	1.7
2000.0	5.57	0.156	0.25	172.7	28	23	12.5	15.1120	3.9	5.2	4.9	0.1	0.0	0.2	2.0	3.1	1.7

ZFAS-2000+
INSERTION LOSS



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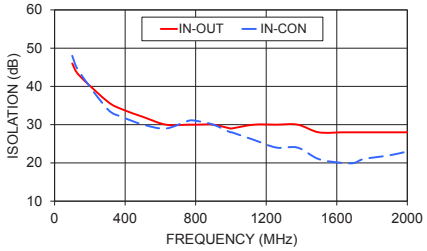
ISOLATION



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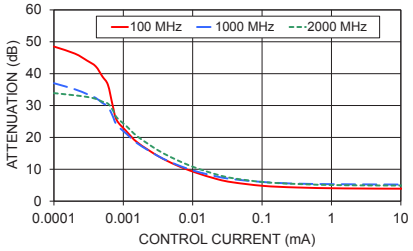
ATTENUATION



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.

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