

Precision

Digital Step Attenuator

50Ω TTL Control, Pin Diode 10 to 1000 MHz

ZFAT-4816



CASE STYLE: SSS173

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 125°C
Input Power	15 dBm
DC Voltage	5.5 V
TTL	5.5V

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

Features

- wideband, 10 to 1000 MHz
- excellent step accuracy, 0.2 dB typ.
- small, shielded metal case

Applications

- base stations
- cellular
- test sets

Connectors	Model	Price	Qty.
SMA	ZFAT-4816	\$89.95	(1-9)
BRACKET (OPTION "B")		\$5.00	(1+)

Digital Step Attenuator Electrical Specifications

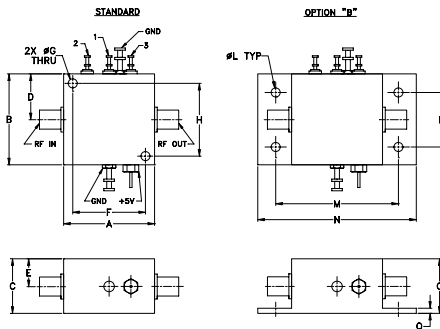
MODEL NO.	FREQUENCY (MHz)		PRIMARY ATTENUATION STEPS (dB)			ATTENUATION (dB)		VSWR (:1)		
	f_L	f_U	#1	#2	#3	(1,1,1)** Nom.	(0,0,0) Max.	L	M	U
ZFAT-4816	10	1000	4±0.4	8±0.4	16±0.5	28.0	4.0	1.6	1.4	1.5

L=10 to 100 MHz M=100 to 500 MHz U=500 to 1000 MHz

** Total attenuation above thru-loss.

1. Step accuracy is specified for basic steps. For combination of steps accuracy is additive.
2. Thru-loss is minimum insertion loss with all attenuation elements bypassed (All TTL controls state are Low)

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
1.25	1.25	0.75	.63	.38	1.000	.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	75

Additional Specifications

DC Voltage	+5V
DC Current	12mA max.
Switching Time (50% TTL to within specified accuracy of the next-selected attenuation step, and to within 0.1 dB of steady-state Thru-Loss)	10µs typ., 15µs max.,
TTL Input High Threshold	2V min
TTL Input Low Threshold	0.8V max.
TTL Toggle Rate	50 kHz typ.
1dB Compression	0 dBm (10-100 MHz) +10 dBm (100-1000MHz)

Notes

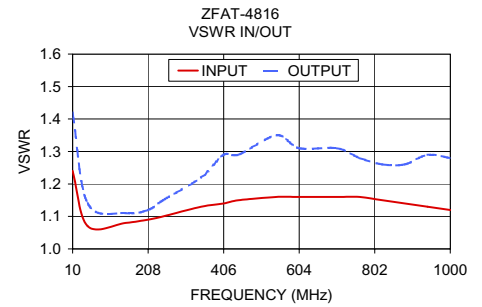
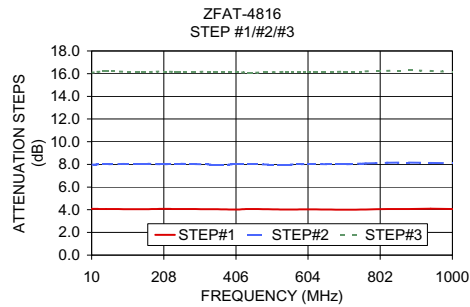
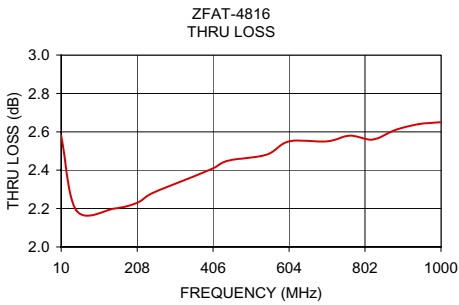
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www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

REV. OR
M97802
ZFAT-4816
DJ/VV/CP
140709

ZFAT-4816



Step Attenuation* at TTL Control State

FREQ.	000	001	010	011	100	101	110	111
(MHz)	THRU LOSS (dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)
10.00	2.58	4.08	7.97	12.05	16.09	20.15	23.88	28.02
49.60	2.19	4.07	8.01	12.07	16.20	20.22	24.12	28.16
148.60	2.20	4.05	8.05	12.12	16.14	20.12	24.07	28.26
208.00	2.23	4.08	8.02	12.13	16.19	20.34	24.10	28.37
247.60	2.28	4.06	8.05	12.08	16.14	20.20	24.19	28.31
346.60	2.36	4.05	7.99	12.06	16.17	20.14	23.99	28.29
406.00	2.41	4.02	8.00	12.08	16.14	20.21	23.98	27.93
445.60	2.45	4.07	8.00	11.99	16.09	20.16	24.21	28.32
544.60	2.48	4.02	7.99	11.97	16.16	20.26	24.46	28.32
604.00	2.55	4.03	8.03	12.01	16.13	20.17	24.10	28.34
703.00	2.55	4.01	8.02	12.00	16.17	20.15	24.22	27.91
762.40	2.58	4.02	8.08	12.12	16.20	20.30	24.12	28.39
821.80	2.56	4.06	8.14	12.09	16.24	20.26	24.15	27.99
881.20	2.61	4.07	8.15	12.11	16.28	20.25	24.17	28.06
940.60	2.64	4.09	8.13	12.16	16.24	20.36	24.33	28.22
1000.00	2.65	4.06	8.12	12.13	16.16	20.34	24.16	28.02

INPUT VSWR

FREQ.	001	010	011	100	101	110	111
(MHz)							
10.00	1.24	1.27	1.17	1.38	1.21	1.25	1.17
49.60	1.07	1.08	1.05	1.12	1.06	1.08	1.05
148.60	1.08	1.09	1.05	1.13	1.06	1.08	1.05
208.00	1.09	1.10	1.06	1.15	1.08	1.10	1.06
247.60	1.10	1.11	1.07	1.16	1.08	1.11	1.07
346.60	1.13	1.15	1.09	1.21	1.11	1.14	1.09
406.00	1.14	1.17	1.11	1.24	1.13	1.16	1.10
445.60	1.15	1.18	1.11	1.26	1.14	1.17	1.11
544.60	1.16	1.21	1.13	1.30	1.16	1.20	1.14
604.00	1.16	1.22	1.15	1.32	1.16	1.22	1.15
703.00	1.16	1.24	1.16	1.34	1.18	1.24	1.17
762.40	1.16	1.25	1.17	1.36	1.19	1.26	1.18
821.80	1.15	1.25	1.18	1.36	1.19	1.26	1.19
881.20	1.14	1.26	1.19	1.37	1.19	1.28	1.20
940.60	1.13	1.26	1.20	1.37	1.19	1.28	1.21
1000.00	1.12	1.26	1.21	1.37	1.19	1.30	1.23

OUTPUT VSWR

FREQ.	001	010	011	100	101	110	111
(MHz)							
10.00	1.42	1.29	1.29	1.11	1.11	1.10	1.11
49.60	1.14	1.09	1.10	1.05	1.05	1.05	1.06
148.60	1.11	1.07	1.06	1.05	1.04	1.04	1.04
208.00	1.12	1.06	1.05	1.02	1.02	1.02	1.01
247.60	1.15	1.08	1.07	1.05	1.04	1.04	1.04
346.60	1.22	1.20	1.12	1.09	1.07	1.07	1.08
406.00	1.29	1.19	1.18	1.12	1.13	1.11	1.12
445.60	1.29	1.19	1.18	1.13	1.13	1.13	1.12
544.60	1.35	1.26	1.26	1.19	1.20	1.19	1.20
604.00	1.31	1.24	1.23	1.19	1.19	1.18	1.20
703.00	1.31	1.25	1.26	1.21	1.23	1.23	1.21
762.40	1.28	1.25	1.26	1.23	1.23	1.23	1.24
821.80	1.26	1.22	1.23	1.20	1.19	1.20	1.19
881.20	1.26	1.22	1.23	1.20	1.21	1.21	1.21
940.60	1.29	1.23	1.25	1.19	1.19	1.21	1.22
1000.00	1.28	1.28	1.30	1.26	1.25	1.27	1.26

* Step attenuation above thru-loss (TTL logic 000)

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