

# Voltage Variable Attenuator

# MVA-1000+

## Typical Performance Data

V CONTROL (V)	ATTENUATION @ 500 MHz (dB) @V+=5V
0.0	12.93
1.0	12.84
1.1	12.65
1.2	12.28
2.0	9.11
2.5	7.76
3.0	6.69
3.5	5.78
4.0	4.96
4.5	4.21
5.0	3.50

FREQ. (MHz)	ATTENUATION Vs. V CONTROL @ V+=5V					
	(dB)					
	@V Control=0V	@V Control=1V	@V Control=2V	@V Control=3V	@V Control=4V	@V Control=5V
50	12.74	12.92	9.04	6.59	4.88	3.44
100	12.83	13.04	8.99	6.58	4.87	3.42
150	13.43	12.88	8.98	6.57	4.87	3.42
200	12.91	12.76	9.00	6.59	4.88	3.44
250	12.89	12.77	9.01	6.60	4.90	3.44
300	12.91	12.79	9.04	6.62	4.91	3.47
350	12.90	12.80	9.04	6.63	4.91	3.46
400	12.93	12.83	9.06	6.66	4.93	3.49
450	12.94	12.85	9.10	6.67	4.95	3.50
500	12.93	12.84	9.11	6.69	4.96	3.50
550	12.96	12.88	9.14	6.71	4.99	3.55
600	12.95	12.86	9.15	6.73	5.00	3.54
650	12.98	12.90	9.19	6.76	5.03	3.58
700	12.96	12.88	9.20	6.76	5.04	3.57
750	13.00	12.91	9.25	6.81	5.08	3.62
800	13.00	12.91	9.26	6.80	5.07	3.61
850	13.03	12.94	9.32	6.87	5.14	3.67
900	12.99	12.91	9.30	6.85	5.10	3.62
950	13.06	12.96	9.40	6.93	5.19	3.72
1000	12.99	12.93	9.37	6.90	5.15	3.67
1100	13.04	12.96	9.47	6.97	5.22	3.74
1200	13.09	13.01	9.58	7.06	5.31	3.83
1300	13.13	13.05	9.67	7.14	5.38	3.90
1400	13.12	13.05	9.75	7.20	5.43	3.93
1500	13.15	13.06	9.87	7.31	5.52	4.01
1600	13.17	13.09	9.98	7.41	5.62	4.09
1700	13.20	13.12	10.10	7.51	5.71	4.18
1800	13.15	13.09	10.16	7.58	5.75	4.19
1900	13.15	13.08	10.32	7.72	5.85	4.27
2000	13.17	13.10	10.49	7.90	6.02	4.38

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## Typical Performance Data

FREQ. (MHz)	INPUT RETURN LOSS Vs. V CONTROL @ V+=5V					
	(dB)					
	@V Control=0V	@V Control=1V	@V Control=2V	@V Control=3V	@V Control=4V	@V Control=5V
50	17.48	18.20	22.77	23.81	21.53	15.69
100	17.58	18.52	22.95	24.69	22.34	17.00
150	19.44	18.46	23.22	25.12	22.63	17.64
200	17.94	18.09	23.10	25.06	22.56	17.98
250	17.93	18.10	23.20	25.14	22.67	18.17
300	17.90	18.10	23.17	25.06	22.60	18.32
350	17.95	18.14	23.22	25.08	22.63	18.41
400	17.91	18.16	23.18	24.97	22.55	18.53
450	17.97	18.18	23.21	24.94	22.54	18.50
500	17.95	18.19	23.15	24.81	22.44	18.56
550	17.92	18.16	23.07	24.65	22.31	18.55
600	17.96	18.17	23.08	24.57	22.25	18.56
650	17.93	18.17	22.98	24.40	22.13	18.50
700	17.92	18.15	22.93	24.23	22.01	18.51
750	17.91	18.16	22.83	24.07	21.86	18.47
800	17.84	18.09	22.75	23.89	21.72	18.38
850	17.87	18.12	22.77	23.82	21.68	18.35
900	17.82	18.05	22.60	23.62	21.50	18.29
950	17.86	18.10	22.72	23.62	21.53	18.22
1000	17.83	18.08	22.64	23.47	21.36	18.14
1100	17.84	18.09	22.70	23.33	21.25	18.04
1200	17.90	18.17	22.80	23.28	21.21	18.01
1300	17.98	18.25	23.00	23.28	21.15	17.90
1400	18.10	18.39	23.31	23.38	21.21	17.91
1500	18.28	18.53	23.75	23.56	21.34	17.84
1600	18.52	18.78	24.40	23.88	21.59	17.75
1700	18.77	19.10	25.22	24.23	21.87	17.73
1800	19.17	19.51	26.19	24.55	22.16	17.71
1900	19.72	20.07	27.31	24.67	22.37	17.77
2000	20.44	20.83	28.00	24.32	22.33	17.89

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## Typical Performance Data

FREQ. (MHz)	OUTPUT RETURN LOSS Vs. V CONTROL @ V+=5V					
	(dB)					
	@V Control=0V	@V Control=1V	@V Control=2V	@V Control=3V	@V Control=4V	@V Control=5V
50	17.47	18.21	22.63	23.69	21.44	15.65
100	17.64	18.42	22.93	24.63	22.27	16.96
150	18.57	18.21	23.12	25.03	22.55	17.57
200	17.83	18.01	23.05	24.97	22.53	17.91
250	17.90	18.12	23.23	25.15	22.68	18.09
300	17.93	18.21	23.24	25.17	22.72	18.25
350	18.04	18.30	23.39	25.29	22.82	18.34
400	18.14	18.43	23.46	25.28	22.85	18.51
450	18.16	18.46	23.47	25.24	22.82	18.49
500	18.28	18.60	23.56	25.22	22.88	18.59
550	18.30	18.65	23.52	25.09	22.83	18.61
600	18.42	18.74	23.54	25.01	22.78	18.67
650	18.48	18.83	23.49	24.82	22.71	18.74
700	18.50	18.86	23.36	24.59	22.55	18.75
750	18.62	18.97	23.32	24.38	22.47	18.78
800	18.63	18.97	23.11	24.06	22.27	18.80
850	18.72	19.03	23.01	23.79	22.08	18.80
900	18.69	19.05	22.74	23.42	21.85	18.80
950	18.73	19.08	22.60	23.13	21.62	18.75
1000	18.73	19.08	22.35	22.77	21.33	18.77
1100	18.76	19.11	21.91	22.07	20.79	18.65
1200	18.73	19.07	21.39	21.38	20.24	18.58
1300	18.71	19.02	20.90	20.72	19.66	18.50
1400	18.70	19.02	20.49	20.15	19.15	18.36
1500	18.69	19.00	20.14	19.58	18.62	18.25
1600	18.71	19.03	19.82	19.11	18.13	17.94
1700	18.69	19.03	19.56	18.65	17.67	17.55
1800	18.77	19.07	19.30	18.19	17.17	17.21
1900	18.89	19.21	19.03	17.76	16.73	16.83
2000	19.08	19.41	18.79	17.28	16.18	16.43

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# Voltage Variable Attenuator

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## Typical Performance Data

FREQ. (MHz)	INPUT IP3 Vs. V CONTROL @ V+=5V (dBm)				
	@V Control=0V	@V Control=2V	@V Control=3V	@V Control=4V	@V Control=5V
50	39.17	38.94	40.00	40.88	42.82
60	40.41	39.95	40.91	41.82	43.31
80	42.85	42.08	43.05	43.41	44.77
100	44.08	44.64	46.05	46.29	48.14
200	49.58	51.85	54.50	52.68	51.63
300	51.13	52.29	56.11	54.62	54.13
400	50.74	52.34	55.87	53.32	53.08
500	50.43	51.70	54.31	52.97	53.30
600	51.19	52.35	53.25	53.62	54.08
700	52.78	53.19	54.06	54.35	54.55
800	54.20	54.87	52.65	54.09	52.70
900	55.43	53.70	52.14	53.60	52.46
1000	54.63	54.38	53.69	53.57	52.74
1100	54.12	53.98	55.66	55.09	54.53
1200	52.37	52.52	56.43	53.93	54.64
1300	55.49	54.73	57.38	55.77	56.44
1400	52.07	52.36	53.46	52.54	54.10
1500	53.65	53.64	55.03	54.48	55.35
1600	54.47	52.23	55.27	53.14	54.21
1700	50.38	52.81	53.28	52.88	53.23
1800	50.25	52.85	53.30	55.85	53.39
1900	52.09	53.59	53.65	55.58	54.19
2000	52.27	55.44	54.83	54.67	54.68

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# Voltage Variable Attenuator

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## Typical Performance Data

FREQ. (MHz)	PHASE SHIFT Vs. V CONTROL @ V+=5V					
	(deg)					
	@V Control=0V	@V Control=1V	@V Control=2V	@V Control=3V	@V Control=4V	@V Control=5V
50	5.96	6.37	12.73	11.88	11.60	11.66
100	11.89	13.94	15.86	15.18	14.89	14.81
150	23.00	21.95	21.09	20.39	20.03	19.91
200	27.89	27.91	26.83	26.05	25.61	25.35
250	34.35	34.42	32.97	32.02	31.47	31.18
300	40.99	41.00	39.05	38.06	37.37	36.98
350	47.70	47.74	45.29	44.12	43.34	42.92
400	54.61	54.54	51.66	50.32	49.48	48.98
450	61.23	61.17	57.90	56.36	55.37	54.74
500	68.23	68.29	64.29	62.63	61.57	60.96
550	74.79	74.79	70.56	68.72	67.55	66.78
600	81.82	81.71	76.95	74.91	73.66	72.90
650	88.50	88.46	83.35	81.19	79.78	78.88
700	95.53	95.42	89.67	87.33	85.86	84.92
750	102.09	102.09	96.05	93.55	91.93	90.88
800	109.28	109.22	102.57	99.84	98.14	97.14
850	115.66	115.60	108.81	105.92	104.03	102.74
900	122.96	122.91	115.31	112.19	110.26	109.17
950	129.30	129.23	121.60	118.30	116.19	114.76
1000	136.72	136.65	128.11	124.66	122.49	121.20
1100	150.26	150.08	140.91	137.03	134.56	133.08
1200	164.09	163.96	154.00	149.60	146.94	145.26
1300	177.88	177.78	167.04	162.08	159.20	157.43
1400	191.68	191.52	179.83	174.36	171.23	169.39
1500	205.32	205.07	192.57	186.61	183.18	181.12
1600	218.93	218.78	205.53	198.86	195.14	192.90
1700	232.68	232.52	218.49	211.17	207.24	204.79
1800	246.78	246.45	231.40	223.38	219.07	216.57
1900	260.32	260.04	244.16	235.25	230.51	227.81
2000	273.81	273.74	256.92	247.17	242.00	238.96

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