

Broad Band Voltage Variable Attenuator

RVA-2000V35+

50Ω 50 to 2000 MHz

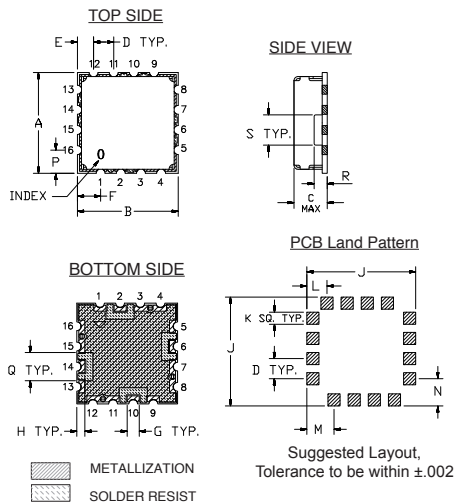
Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 85°C
Absolute Max. Supply Voltage(V+)	8V
Absolute Max. Control Voltage(Vctrl)	8V
Absolute Max. RF Input Level	+18dBm
Permanent damage may occur if any of these limits are exceeded.	

Pin Connections

RF IN	2
RF OUT	10
V CONTROL	6
V+	14
GROUND	1,3,4,5,7,8,9,11,12,13,15,16

Outline Drawing

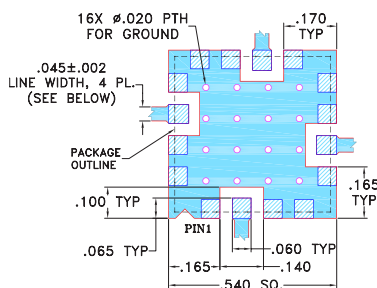


Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J
.500	.500	.195	.100	.080	.115	.060	.040	.540
12.70	12.70	4.95	2.54	2.03	2.92	1.52	1.02	13.72
K	L	M	N	P	Q	R	S	wt.
.060	.100	.135	.135	.115	.140	.070	.150	grams
1.52	2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.0

Demo Board MCL P/N: TB-163

Suggested PCB Layout (PL-040)



- NOTE:
1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS 0.025" ± 0.0025"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
 3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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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Features

- Broadband, 50-2000 MHz
- IP3, +52 dBm typ.
- Fast Rise/Fall Time, 6 μ Sec Typ.
- Minimal phase deviation over attenuation range
- No external bias and RF matching network required
- Shielded case
- Aqueous washable

Applications

- Power level control
- Feed forward amplifier
- Variable gain amplifier
- Video modulator
- CATV



CASE STYLE: DV874

+RoHS Compliant

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

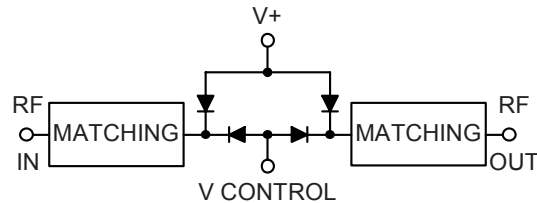
Electrical Specifications (T_{AMB} = 25°C)

FREQ. (MHz)		MIN. INSERTION LOSS, dB (+5V)		MAX. ATTENUATION dB (0V)		INPUT POWER (dBm)	CONTROL Voltage Current (V) (mA)		IP3 (dBm)	RETURN LOSS (dB)	POWER SUPPLY Voltage Current (V) (mA)	
Min.	Max.	Typ.	Max.	Typ.	Min.	Max.		Max.	Typ.	Typ.		Max.
50 - 1000		3.0	4.5	53	35	+18	0 - 5	20	50	20	+3 to +5	5
1000 - 2000		3.5	5.0	40	30	+18	0 - 5	20	55	18	+3 to +5	5

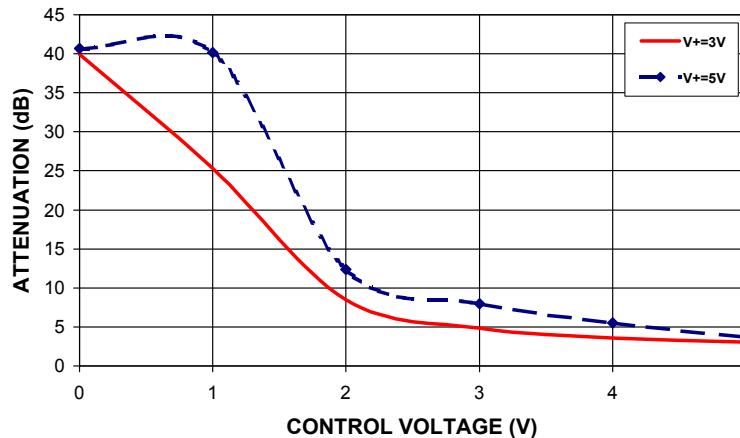
Notes:

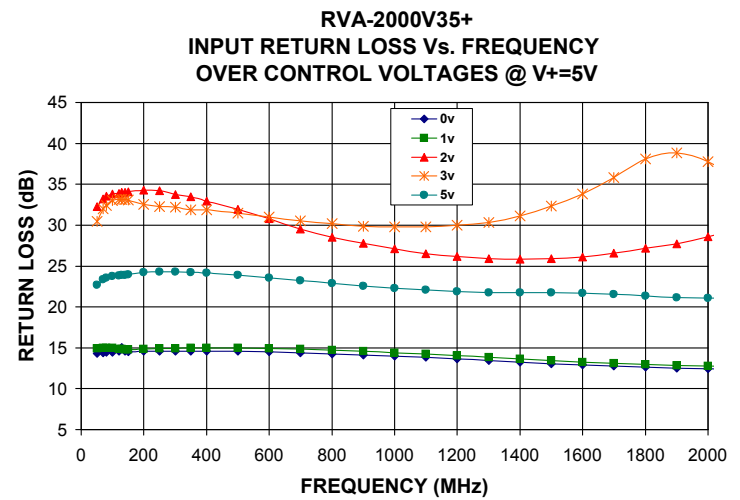
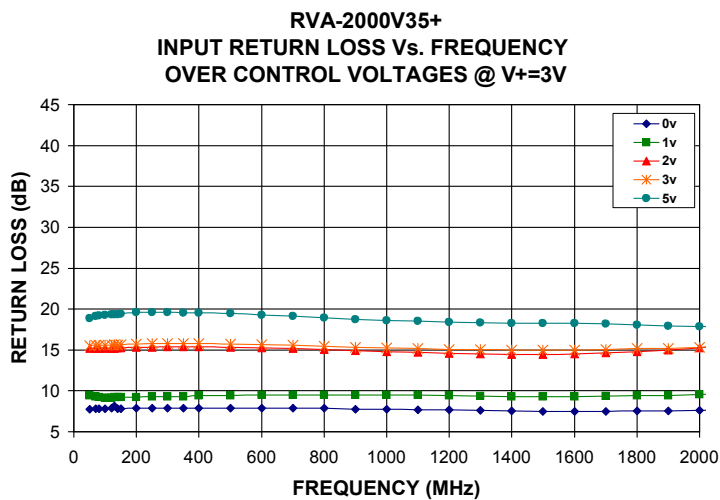
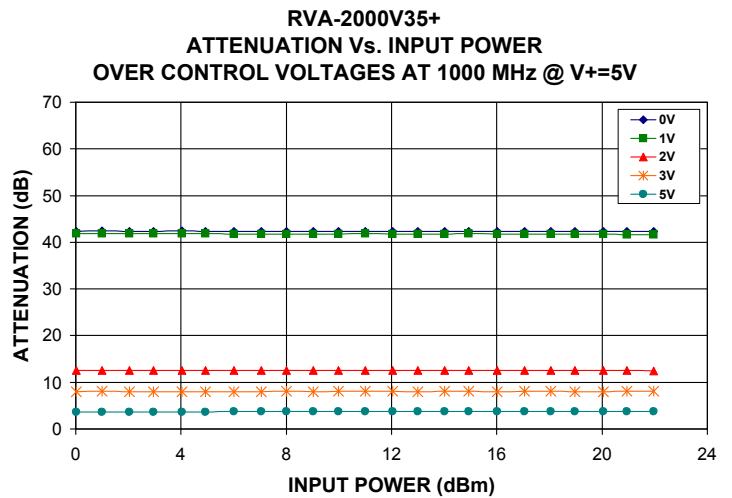
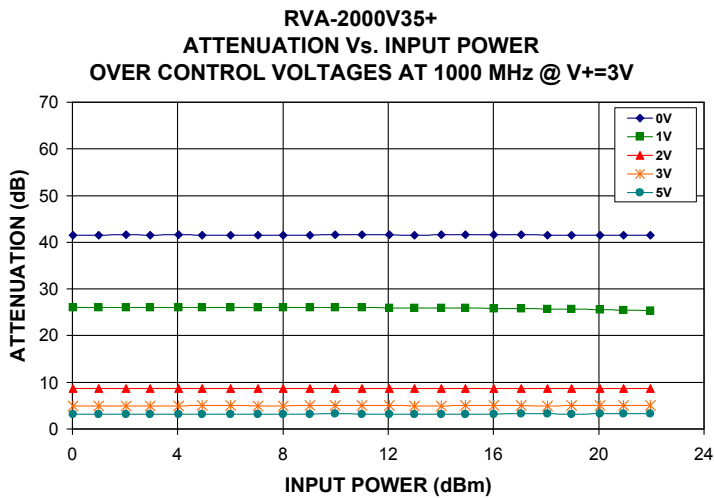
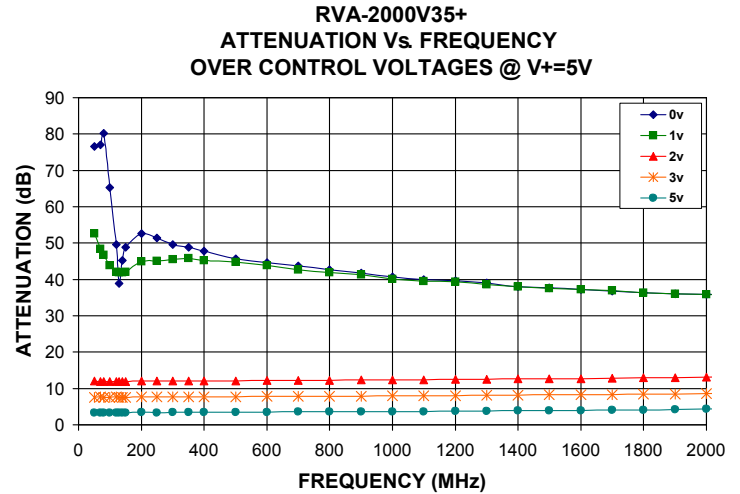
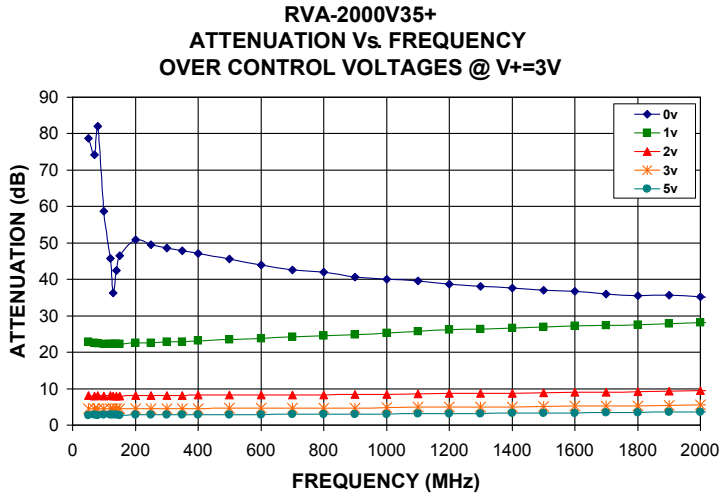
- Rise/Fall time: 6 μ Sec Typ.
- Switching Time & turn on/off time: 10 μ Sec. Typ.
- Improved R.Loss in/out performance can be achieved at certain frequencies by choosing a V+ between +3V to +5V

Equivalent Schematic



RVA-2000V35+ TYPICAL ATTENUATION AT 1000 MHz



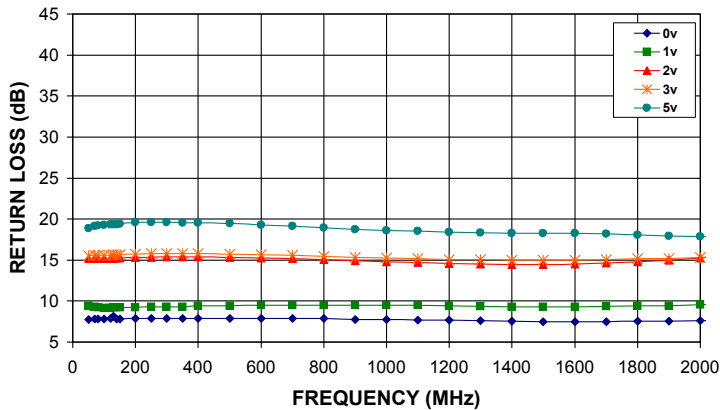


Notes

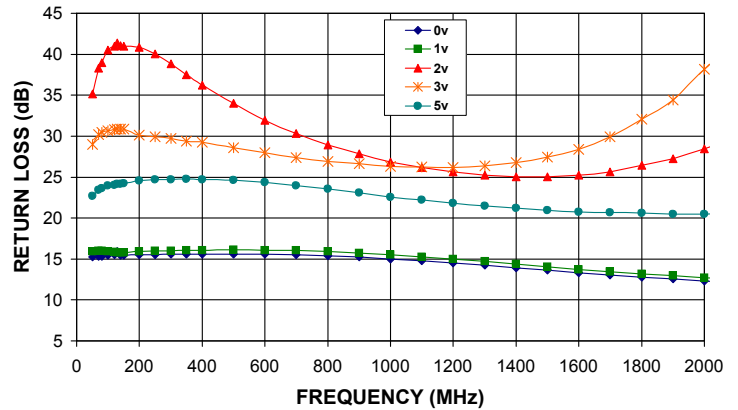
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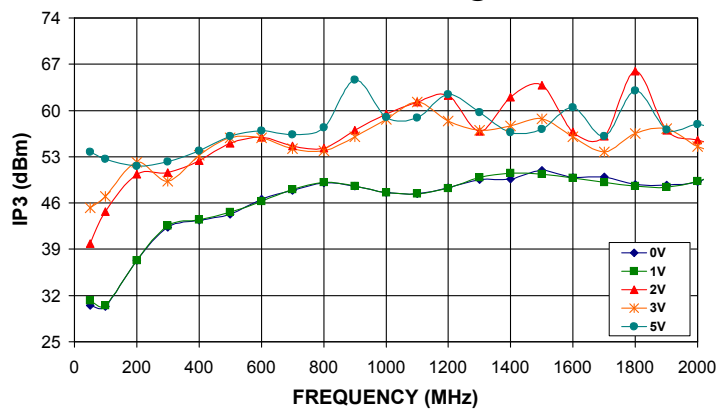
**RVA-2000V35+
INPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V**



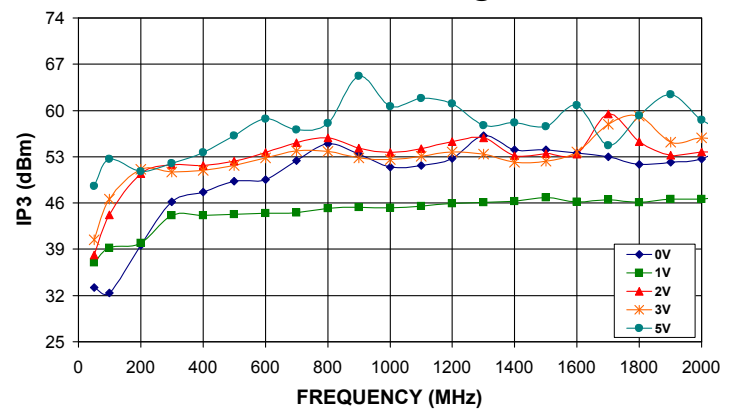
**RVA-2000V35+
OUTPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V**



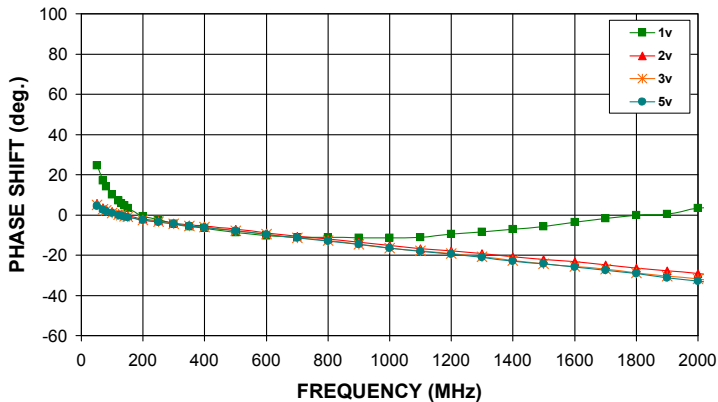
**RVA-2000V35+
IP3 Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V**



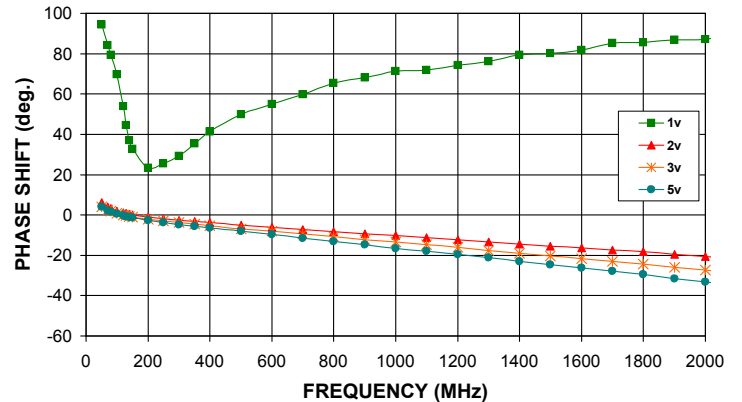
**RVA-2000V35+
IP3 Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V**



**RVA-2000V35+
PHASE SHIFT Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V**



**RVA-2000V35+
PHASE SHIFT Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V**



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Voltage Variable Attenuator

RVA-2000V35+

Typical Performance Data

V CONTROL (V)	ATTENUATION @ 1000 MHz (dB)	
	@V+=3V	@V+=5V
0.0	39.97	40.71
1.0	25.30	40.15
2.0	8.48	12.36
3.0	4.85	7.96
4.0	3.56	5.52
5.0	3.07	3.66

FREQ. (MHz)	ATTENUATION Vs. V CONTROL Vs. V+									
	(dB)									
	@V Control=0V		@V Control=1V		@V Control=2V		@V Control=3V		@V Control=5V	
	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V
50	78.65	76.65	22.95	52.59	8.08	12.00	4.50	7.60	2.78	3.34
70	74.20	77.02	22.55	48.43	8.05	11.98	4.51	7.63	2.80	3.34
80	82.00	80.17	22.44	46.76	8.07	11.97	4.48	7.60	2.78	3.33
100	58.65	65.30	22.34	43.91	8.04	11.96	4.48	7.59	2.80	3.33
120	45.79	49.60	22.28	42.07	8.06	11.96	4.48	7.63	2.79	3.34
140	42.49	45.27	22.29	41.84	8.05	11.96	4.47	7.61	2.80	3.34
200	50.92	52.68	22.53	44.92	8.09	12.01	4.54	7.66	2.84	3.40
300	48.64	49.54	22.83	45.51	8.12	12.06	4.56	7.69	2.89	3.43
400	47.07	47.83	23.12	45.30	8.21	12.10	4.59	7.71	2.92	3.46
500	45.67	45.72	23.43	44.76	8.22	12.13	4.60	7.74	2.92	3.48
600	43.90	44.69	23.76	43.82	8.24	12.16	4.66	7.80	2.93	3.50
700	42.66	43.79	24.18	42.59	8.28	12.21	4.70	7.85	2.98	3.55
800	42.04	42.63	24.52	41.89	8.32	12.24	4.70	7.81	2.99	3.55
900	40.64	41.75	24.85	41.25	8.38	12.29	4.73	7.91	3.03	3.59
1000	39.97	40.71	25.30	40.15	8.48	12.36	4.85	7.96	3.07	3.66
1100	39.51	40.02	25.72	39.55	8.59	12.43	4.90	8.00	3.14	3.69
1200	38.72	39.62	26.13	39.33	8.67	12.46	4.96	8.03	3.20	3.77
1300	38.11	39.03	26.39	38.59	8.73	12.51	5.00	8.10	3.19	3.80
1400	37.57	37.93	26.65	37.98	8.77	12.60	5.04	8.14	3.25	3.86
1500	37.06	37.73	26.95	37.51	8.89	12.67	5.13	8.22	3.30	3.92
1600	36.71	37.18	27.19	37.22	8.96	12.73	5.20	8.26	3.34	3.95
1700	35.99	36.79	27.39	37.00	9.01	12.82	5.20	8.34	3.39	4.01
1800	35.57	36.35	27.59	36.36	9.15	12.93	5.31	8.44	3.48	4.08
1900	35.60	36.09	27.84	36.05	9.29	13.00	5.42	8.49	3.57	4.16
2000	35.24	35.93	28.07	35.88	9.43	13.13	5.53	8.60	3.64	4.30
2100	34.58	35.75	28.15	35.59	9.50	13.22	5.56	8.70	3.69	4.33
2200	34.41	35.22	28.25	35.21	9.65	13.35	5.68	8.79	3.73	4.40
2400	34.14	34.82	28.63	34.79	9.86	13.53	5.82	8.95	3.88	4.57
2500	33.67	34.31	28.59	34.47	9.92	13.63	5.87	9.07	3.88	4.62
2600	33.28	34.05	28.73	34.21	10.10	13.75	5.97	9.17	3.98	4.71
2800	32.95	33.79	28.89	33.78	10.45	14.06	6.29	9.46	4.25	5.01
3000	32.22	32.75	28.81	32.67	10.81	14.27	6.54	9.70	4.47	5.25
3200	32.19	32.76	29.06	32.68	11.24	14.68	6.95	10.04	4.79	5.60
3400	31.60	31.63	29.13	32.14	11.75	15.24	7.41	10.59	5.24	6.11
3600	31.29	31.30	29.87	31.90	12.16	15.57	7.74	10.82	5.50	6.34
3800	31.29	30.82	30.46	31.39	12.87	16.21	8.34	11.46	6.04	6.95
4000	30.91	30.11	31.05	30.45	13.68	16.93	9.08	12.15	6.64	7.55



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REV. X1

RVA-2000V35+

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Voltage Variable Attenuator

RVA-2000V35+

Typical Performance Data

FREQ. (MHz)	INPUT RETURN LOSS Vs. V CONTROL Vs. V+									
	(dB)									
	@V Control=0V		@V Control=1V		@V Control=2V		@V Control=3V		@V Control=5V	
	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V
50	7.75	14.30	9.39	14.91	15.16	32.25	15.52	30.43	18.89	22.69
70	7.79	14.40	9.26	14.97	15.18	33.21	15.57	32.01	19.14	23.35
80	7.79	14.43	9.24	15.00	15.19	33.54	15.59	32.42	19.22	23.56
100	7.80	14.48	9.16	14.96	15.18	33.80	15.61	32.98	19.30	23.73
120	7.89	14.60	9.16	14.86	15.19	33.91	15.60	33.14	19.33	23.86
140	7.84	14.55	9.19	14.79	15.22	34.03	15.61	33.17	19.37	23.91
200	7.85	14.55	9.25	14.88	15.33	34.29	15.75	32.57	19.58	24.25
300	7.85	14.55	9.31	14.94	15.37	33.77	15.79	32.18	19.59	24.27
400	7.88	14.57	9.40	14.98	15.38	32.93	15.80	31.84	19.55	24.17
500	7.89	14.55	9.45	14.96	15.34	31.96	15.74	31.48	19.46	23.92
600	7.88	14.50	9.49	14.91	15.27	30.77	15.66	30.97	19.27	23.56
700	7.86	14.40	9.50	14.82	15.18	29.51	15.57	30.56	19.14	23.22
800	7.85	14.26	9.50	14.69	15.02	28.53	15.45	30.16	18.91	22.86
900	7.77	14.13	9.49	14.56	14.92	27.77	15.33	29.84	18.75	22.54
1000	7.73	13.97	9.47	14.38	14.79	27.10	15.26	29.77	18.60	22.26
1100	7.70	13.83	9.47	14.24	14.69	26.50	15.16	29.77	18.52	22.08
1200	7.65	13.63	9.40	14.02	14.57	26.15	15.06	30.01	18.42	21.89
1300	7.60	13.43	9.37	13.84	14.50	25.92	15.03	30.36	18.34	21.77
1400	7.55	13.23	9.32	13.61	14.47	25.83	14.98	31.11	18.29	21.72
1500	7.50	13.06	9.31	13.43	14.46	25.91	15.00	32.33	18.27	21.75
1600	7.50	12.90	9.31	13.27	14.51	26.11	15.01	33.81	18.24	21.65
1700	7.51	12.74	9.33	13.12	14.65	26.56	15.07	35.79	18.17	21.56
1800	7.53	12.64	9.39	13.00	14.79	27.17	15.17	38.10	18.09	21.38
1900	7.53	12.50	9.45	12.87	14.96	27.69	15.19	38.84	17.92	21.17
2000	7.60	12.42	9.56	12.80	15.24	28.60	15.35	37.74	17.89	21.06
2100	7.69	12.37	9.68	12.72	15.63	29.55	15.58	35.64	17.87	21.05
2200	7.78	12.31	9.86	12.69	16.01	30.04	15.78	33.48	17.90	21.02
2400	8.09	12.33	10.32	12.71	17.13	31.64	16.56	31.78	18.44	22.01
2500	8.27	12.37	10.59	12.78	17.94	31.64	17.19	30.55	19.11	23.04
2600	8.48	12.44	10.90	12.85	18.86	30.63	17.99	28.95	20.09	24.62
2800	8.98	12.70	11.61	13.14	21.33	27.27	20.26	25.35	23.19	30.41
3000	9.43	13.02	12.29	13.51	23.49	25.07	22.08	23.23	25.95	34.84
3200	9.89	13.54	13.00	14.03	24.85	22.66	23.86	20.47	27.00	26.63
3400	10.31	14.21	13.61	14.81	23.76	20.68	23.09	18.36	23.38	21.84
3600	10.66	14.82	14.04	15.46	21.34	19.45	20.85	16.89	20.37	19.08
3800	10.92	15.28	14.30	15.96	19.75	18.14	19.43	15.53	18.42	17.17
4000	11.12	15.48	14.50	16.16	18.94	17.35	18.92	14.68	18.05	16.45

REV. X1

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	(dB)									
	@V Control=0V		@V Control=1V		@V Control=2V		@V Control=3V		@V Control=5V	
	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V
50	8.06	15.22	9.72	15.90	15.39	35.13	15.54	28.96	18.85	22.69
70	8.11	15.34	9.60	15.98	15.44	38.28	15.63	30.19	19.17	23.44
80	8.13	15.35	9.60	15.99	15.44	38.94	15.64	30.45	19.24	23.65
100	8.17	15.42	9.54	15.94	15.48	40.54	15.68	30.69	19.35	23.94
120	8.21	15.55	9.52	15.84	15.50	40.98	15.69	30.80	19.40	24.06
140	8.20	15.48	9.53	15.76	15.50	41.07	15.71	30.84	19.44	24.16
200	8.19	15.51	9.64	15.91	15.64	40.83	15.87	30.12	19.70	24.58
300	8.23	15.56	9.72	16.02	15.71	38.86	15.95	29.72	19.79	24.71
400	8.27	15.60	9.81	16.08	15.78	36.24	16.02	29.25	19.87	24.71
500	8.27	15.60	9.90	16.09	15.78	34.04	16.04	28.59	19.85	24.62
600	8.27	15.58	9.97	16.08	15.74	31.94	16.01	28.00	19.79	24.35
700	8.28	15.52	10.03	16.03	15.68	30.34	15.95	27.41	19.70	23.98
800	8.27	15.41	10.08	15.91	15.56	28.91	15.88	26.89	19.54	23.55
900	8.22	15.24	10.07	15.72	15.38	27.84	15.72	26.62	19.30	23.06
1000	8.16	14.99	10.03	15.51	15.18	26.81	15.54	26.31	19.04	22.57
1100	8.10	14.79	9.98	15.28	15.04	26.20	15.40	26.21	18.85	22.22
1200	8.01	14.49	9.89	14.98	14.82	25.62	15.19	26.17	18.57	21.80
1300	7.95	14.23	9.85	14.69	14.67	25.21	15.06	26.39	18.38	21.46
1400	7.86	13.91	9.77	14.36	14.54	25.01	14.93	26.76	18.14	21.21
1500	7.79	13.62	9.70	14.05	14.43	25.03	14.81	27.46	18.00	20.96
1600	7.72	13.32	9.65	13.74	14.42	25.22	14.76	28.37	17.84	20.76
1700	7.67	13.03	9.62	13.46	14.50	25.66	14.78	29.95	17.77	20.68
1800	7.66	12.77	9.62	13.18	14.62	26.43	14.87	32.09	17.70	20.59
1900	7.64	12.54	9.63	12.94	14.80	27.23	14.92	34.44	17.58	20.48
2000	7.67	12.33	9.73	12.71	15.13	28.43	15.11	38.19	17.61	20.50
2100	7.76	12.21	9.87	12.58	15.59	29.74	15.44	40.79	17.75	20.66
2200	7.85	12.08	10.05	12.48	16.21	30.89	15.89	36.97	18.09	21.04
2400	8.20	11.96	10.56	12.36	17.74	30.43	17.11	30.13	19.06	22.25
2500	8.42	11.94	10.91	12.36	18.90	28.80	18.07	27.72	19.99	23.46
2600	8.65	11.96	11.27	12.36	20.32	27.02	19.22	25.56	21.29	25.29
2800	9.26	12.17	12.17	12.60	24.51	23.54	23.03	22.04	26.31	31.22
3000	9.84	12.47	13.12	12.93	29.29	21.32	27.87	19.83	35.58	31.66
3200	10.42	13.01	14.08	13.53	28.75	19.78	30.91	18.02	31.48	24.91
3400	10.96	13.67	14.87	14.25	25.20	18.61	26.95	16.72	24.76	21.42
3600	11.25	14.15	15.23	14.85	22.85	18.12	24.14	16.01	22.58	19.92
3800	11.38	14.39	15.26	15.12	21.69	17.70	23.41	15.48	21.43	19.17
4000	11.39	14.33	15.24	15.06	21.76	17.64	24.57	15.33	21.86	19.38

REV. X1

RVA-2000V35+

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Voltage Variable Attenuator

RVA-2000V35+

Typical Performance Data

FREQ. (MHz)	INPUT IP3 Vs. V CONTROL Vs. V+ (dBm)									
	@V Control=0V		@V Control=1V		@V Control=2V		@V Control=3V		@V Control=5V	
	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V
10	23.45	25.02	24.33	27.11	30.85	30.13	33.21	30.66	44.18	38.93
20	26.70	26.96	26.41	29.73	33.14	31.61	39.16	34.33	49.97	41.94
50	30.50	33.23	31.21	36.99	39.88	38.16	45.28	40.42	53.73	48.55
100	30.36	32.37	30.46	39.20	44.72	44.21	46.98	46.61	52.69	52.62
200	37.33	39.60	37.29	39.97	50.40	50.44	52.16	51.08	51.62	50.76
300	42.35	46.18	42.54	44.12	50.62	51.75	49.32	50.71	52.28	52.02
400	43.40	47.64	43.50	44.13	52.44	51.71	53.25	50.94	53.86	53.66
500	44.31	49.30	44.62	44.26	55.06	52.34	55.88	51.67	56.09	56.22
600	46.56	49.51	46.29	44.44	55.98	53.65	55.85	52.79	56.96	58.73
700	47.93	52.44	48.03	44.52	54.59	55.13	54.22	53.91	56.34	57.11
800	49.03	54.97	49.14	45.16	54.29	55.86	53.89	53.83	57.41	58.08
900	48.54	53.39	48.54	45.37	57.02	54.27	56.00	52.84	64.64	65.21
1000	47.54	51.39	47.59	45.29	59.47	53.65	58.62	52.60	59.01	60.60
1100	47.39	51.65	47.42	45.49	61.29	54.19	61.28	53.06	58.87	61.88
1200	48.27	52.77	48.24	45.94	62.28	55.29	58.37	53.74	62.44	61.03
1300	49.51	56.19	49.90	46.12	56.81	55.90	56.97	53.39	59.72	57.78
1400	49.66	54.04	50.54	46.29	62.03	53.14	57.65	52.18	56.67	58.17
1500	50.94	54.07	50.37	46.81	63.81	53.44	58.76	52.33	57.20	57.62
1600	49.87	53.53	49.82	46.16	56.76	53.39	56.03	53.72	60.45	60.79
1700	49.94	53.00	49.17	46.52	56.13	59.47	53.74	57.89	56.08	54.74
1800	48.82	51.84	48.57	46.11	65.92	55.28	56.54	59.11	63.03	59.23
1900	48.72	52.18	48.37	46.61	56.98	53.21	57.22	55.19	57.08	62.41
2000	49.21	52.69	49.29	46.55	55.56	53.72	54.55	55.86	57.94	58.60
2100	51.40	55.00	50.72	47.08	54.66	53.56	53.66	55.52	56.76	56.61
2200	52.13	54.98	51.92	47.60	55.50	54.59	54.18	56.78	58.90	56.37

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Voltage Variable Attenuator

RVA-2000V35+

Typical Performance Data

FREQ. (MHz)	PHASE SHIFT Vs. V CONTROL Vs. V+									
	(deg)									
	@V Control=0V		@V Control=1V		@V Control=2V		@V Control=3V		@V Control=5V	
	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V	@V+=3V	@V+=5V
50	-167.44	119.60	24.63	94.35	5.90	6.09	4.87	4.18	4.30	3.92
70	-160.72	-115.08	16.95	84.18	3.74	3.96	2.89	2.52	2.43	2.22
80	-147.53	157.55	14.15	79.41	2.90	3.15	2.19	1.82	1.77	1.63
100	-125.12	-139.56	10.15	69.74	1.67	2.02	0.99	0.71	0.81	0.56
120	-135.25	-133.42	7.09	53.97	0.75	1.16	0.12	0.08	-0.16	-0.25
140	98.69	98.38	4.69	36.98	-0.08	0.43	-0.54	-0.72	-0.94	-0.94
200	84.62	83.25	-0.68	23.22	-2.06	-1.14	-2.46	-2.09	-2.59	-2.70
300	91.30	84.76	-4.32	29.20	-4.10	-2.52	-4.42	-3.78	-4.49	-4.66
400	89.93	91.35	-6.71	41.18	-5.46	-3.78	-6.14	-5.36	-6.25	-6.43
500	89.23	91.29	-8.75	49.93	-7.23	-4.98	-7.88	-6.89	-7.91	-8.03
600	90.39	90.80	-10.35	54.94	-9.00	-6.02	-9.63	-8.13	-9.81	-9.71
700	91.34	91.52	-11.07	59.92	-10.48	-7.09	-11.34	-9.47	-11.34	-11.43
800	91.43	91.52	-11.17	65.45	-11.95	-8.19	-12.81	-10.56	-13.08	-13.15
900	89.55	93.58	-11.51	68.07	-13.54	-9.26	-14.71	-12.17	-14.62	-14.80
1000	90.23	94.27	-11.52	71.23	-15.27	-10.28	-16.42	-13.30	-16.53	-16.53
1100	92.27	94.44	-11.12	71.73	-16.66	-11.22	-17.90	-14.63	-18.10	-17.95
1200	92.64	95.63	-9.64	74.21	-17.80	-12.25	-19.17	-16.05	-19.48	-19.66
1300	93.34	94.29	-8.54	76.20	-19.19	-13.31	-20.93	-17.59	-21.10	-21.22
1400	92.43	96.83	-7.17	79.26	-20.87	-14.38	-22.75	-19.00	-22.86	-23.05
1500	92.55	97.02	-5.78	80.22	-22.25	-15.45	-24.29	-20.45	-24.36	-24.70
1600	95.19	98.84	-3.67	81.90	-23.26	-16.35	-25.55	-21.71	-25.93	-26.19
1700	97.85	99.02	-1.66	85.14	-24.77	-17.30	-27.05	-22.95	-27.59	-27.72
1800	95.83	99.18	-0.21	85.45	-26.33	-18.30	-28.81	-24.28	-29.21	-29.50
1900	96.78	99.92	0.53	86.95	-27.90	-19.55	-30.54	-25.85	-31.23	-31.53
2000	98.02	102.72	3.23	87.17	-29.05	-20.51	-31.93	-27.30	-32.82	-33.14
2100	98.93	101.54	4.28	89.84	-30.92	-21.68	-34.04	-28.85	-34.80	-35.18
2200	98.28	104.11	4.71	90.37	-32.93	-22.86	-36.33	-30.44	-36.86	-37.18
2400	99.76	105.57	7.74	91.82	-36.07	-25.56	-39.73	-33.96	-40.71	-41.04
2500	101.80	110.67	9.82	94.58	-37.65	-26.47	-41.62	-35.34	-42.59	-42.93
2600	100.79	108.56	9.69	95.05	-40.14	-28.33	-44.54	-37.62	-45.38	-45.67
2800	104.69	113.44	14.55	101.70	-42.86	-30.87	-47.99	-40.91	-49.45	-49.57
3000	103.63	114.55	14.63	102.87	-46.17	-32.43	-52.09	-42.91	-53.46	-53.24
3200	104.12	116.27	17.25	104.90	-50.19	-36.02	-56.89	-47.64	-58.47	-58.32
3400	108.29	120.18	18.49	109.04	-53.56	-38.18	-61.07	-50.67	-62.77	-62.65
3600	109.15	123.28	16.32	112.97	-57.44	-42.12	-66.13	-55.51	-68.08	-67.96
3800	112.60	127.11	19.09	114.14	-61.43	-45.24	-71.10	-59.72	-73.31	-73.01
4000	117.86	130.56	24.14	119.65	-64.45	-47.37	-75.61	-63.61	-78.39	-77.94

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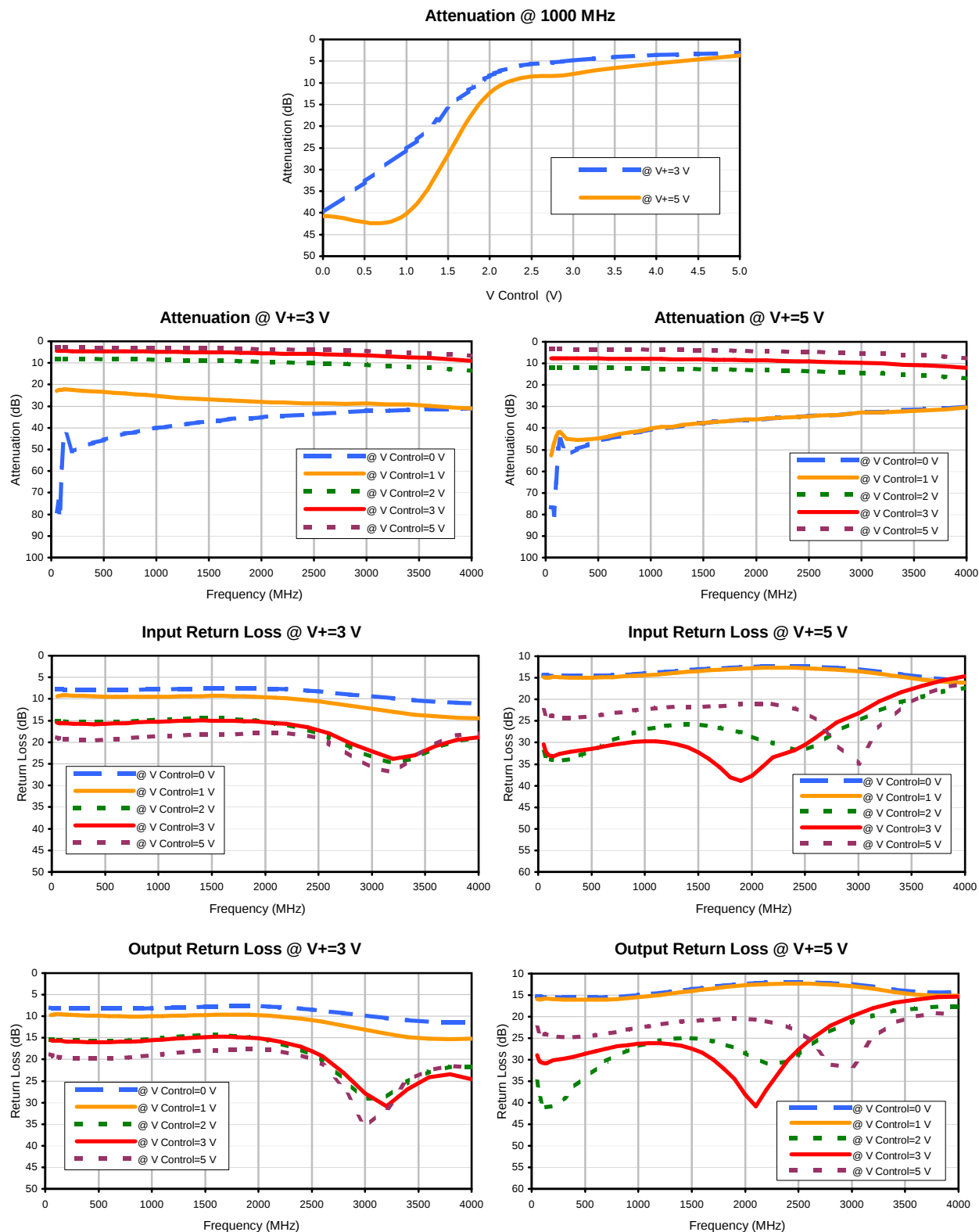
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Voltage Variable Attenuator

Typical Performance Curves

RVA-2000V35+



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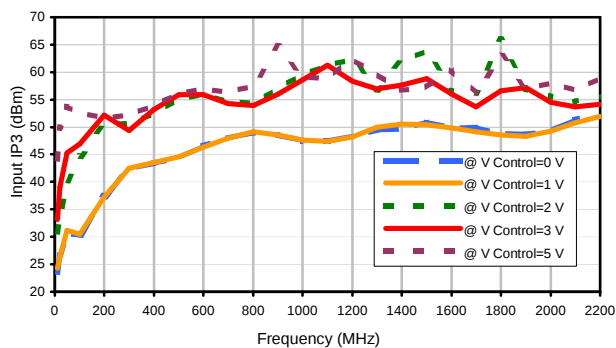


Voltage Variable Attenuator

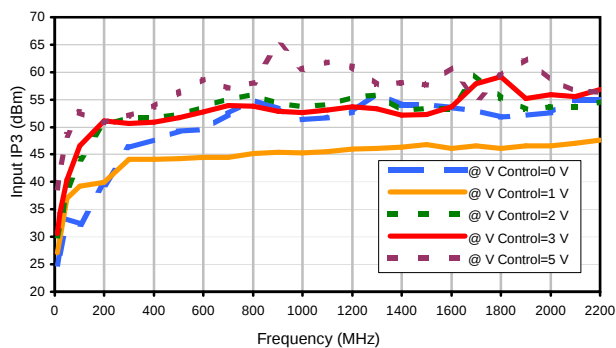
Typical Performance Curves

RVA-2000V35+

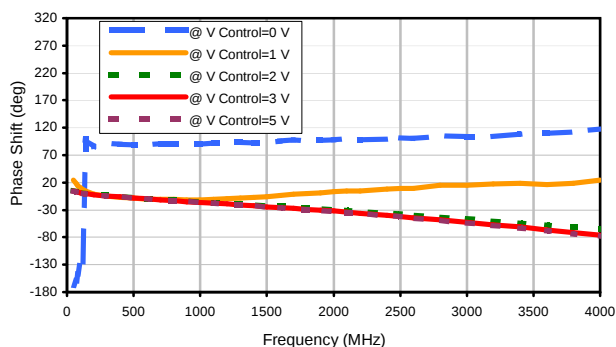
Input IP3 @ V+=3 V



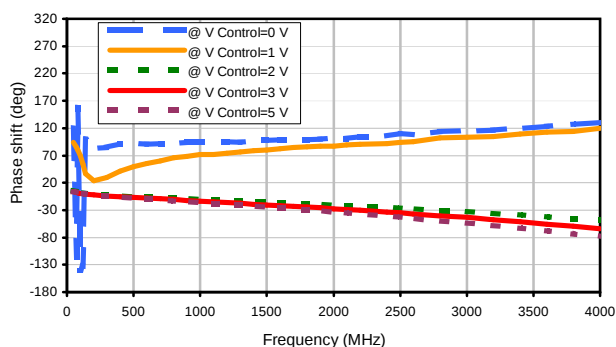
Input IP3 @ V+=5 V



Phase Shift @ V+=3 V



Phase Shift @ V+=5 V



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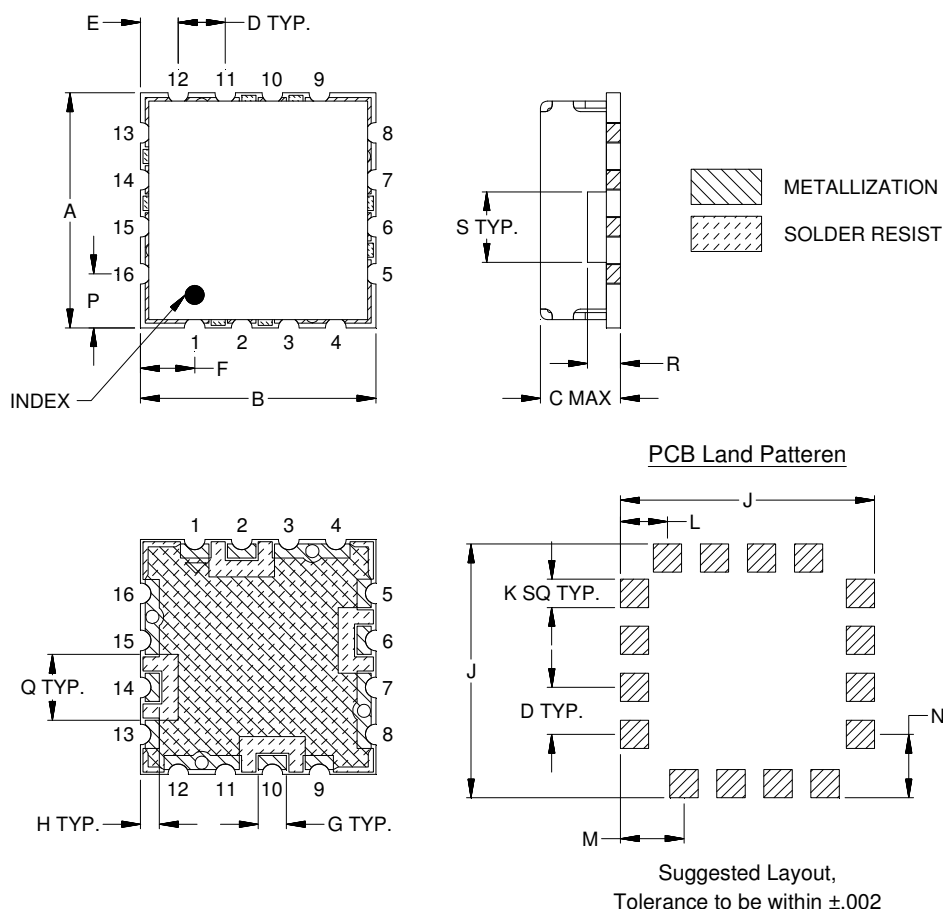


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Outline Dimensions

DV874



CASE#	A	B	C	D	E	F	G	H	J	K	L	M
DV874	.500 (12.70)	.500 (12.70)	.195 (4.95)	.100 (2.54)	.080 (2.03)	.115 (2.92)	.060 (1.52)	.040 (1.02)	.540 (13.72)	.060 (1.52)	.100 (2.54)	.135 (3.43)

CASE#	N	P	Q	R	S	WT.GRAM
DV874	.135 (3.43)	.115 (2.92)	.140 (3.56)	.070 (1.78)	.150 (3.81)	1.0

Dimensions are in inches (mm). Tolerances: 2Pl. $\pm .03$; 3Pl. $\pm .015$

Notes:

- Case material: Nickel-Silver alloy.
- Base: Printed wiring laminate.
- Termination finish:
 - For RoHS Case Styles: 3-5 μ inch (.08-.13 microns) Gold over 120-240 μ inch (3.05-6.10 microns) Nickel plate.
 - For RoHS-5 Case Styles: Tin-Lead plate.

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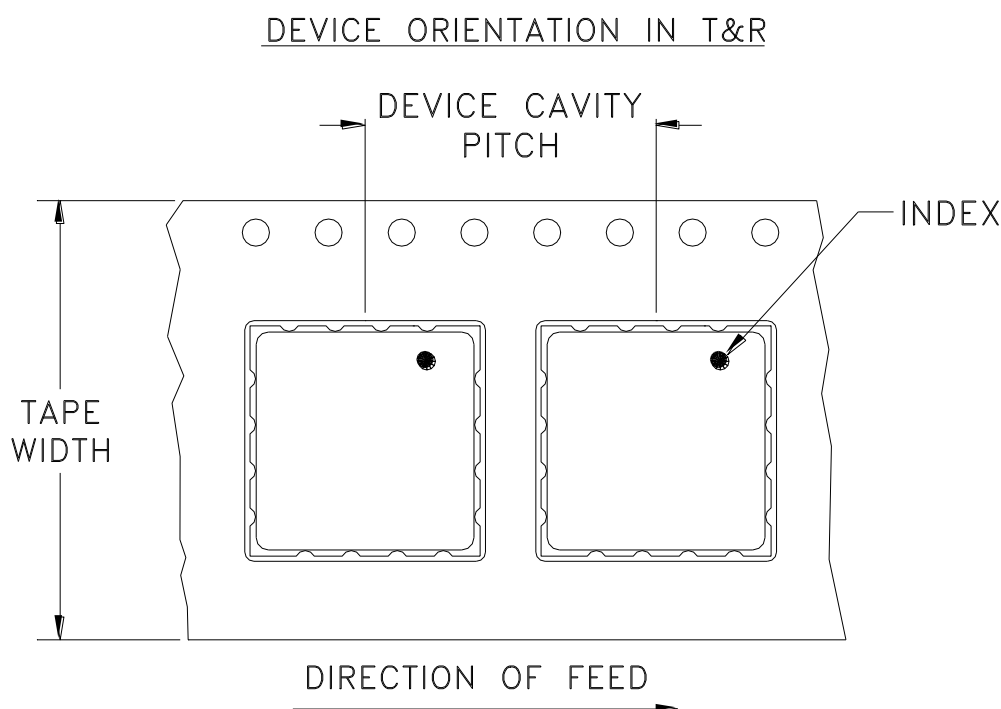
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RF/IF MICROWAVE COMPONENTS

Tape & Reel Packaging TR-F37



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
24	16	7	Small quantity standards (see note)	10
				20
				50
				100
		13	Standard	200
				500

Note: Please consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf



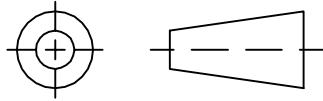
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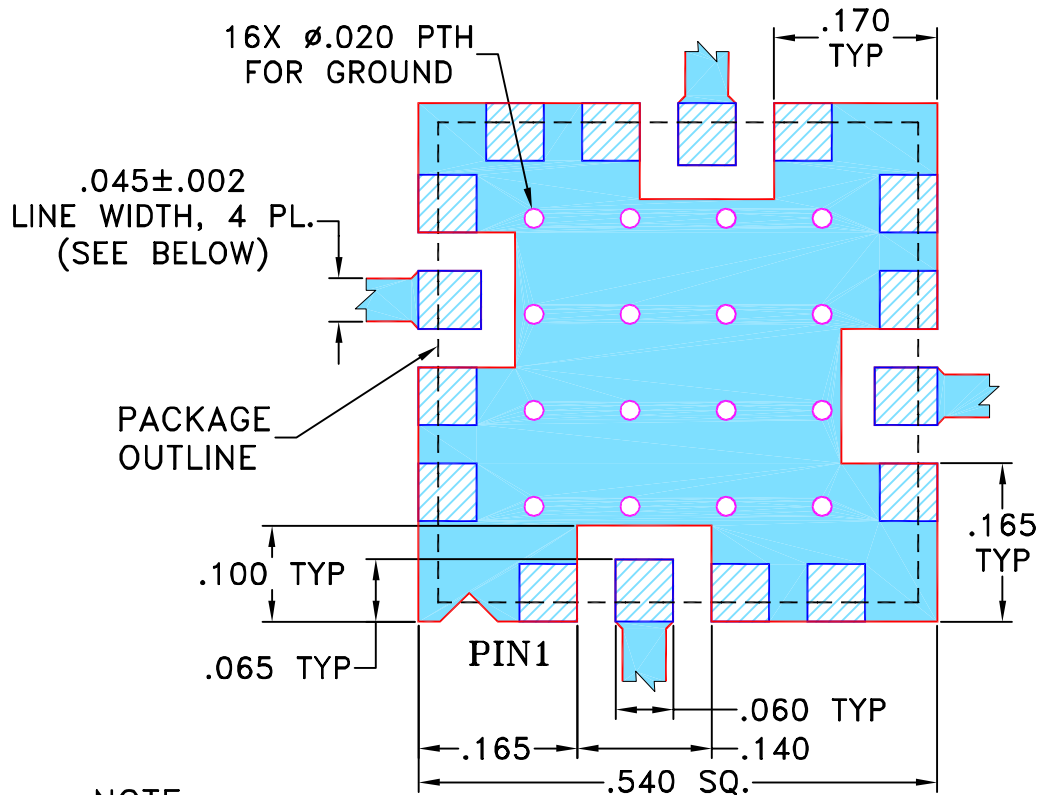
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
A	M94233	CHANGE LINE WIDTH	09/04	RZ	HH
B	M101567	ADD CS: DV874	10/05	DK	HH
B	R82061	ADD CS: DV874	10/05	DK	HH
C	M102713	ADDED "...WITH SMOBC"	01/12/06	GF	IL

SUGGESTED MOUNTING CONFIGURATION FOR DV894 & DV897 CASE STYLES, "np" PIN CONNECTION



NOTE:

1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS 0.025" $\pm$ 0.0025"; COPPER: 1/2 OZ. EACH SIDE.
FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

 DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED

INITIALS

DATE

DIMENSIONS ARE IN INCHES

TOLERANCES ON:

2 PL DECIMALS $\pm$ 3 PL DECIMALS $\pm$.005ANGLES $\pm$ FRACTIONS $\pm$

DRAWN

DK (RAVON)

28 OCT 05

CHECKED

RZ (RAVON)

28 OCT 05

APPROVED

HH (RAVON)

28 OCT 05

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ASHEETA1.DWG REV:A DATE:01/12/95



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Brooklyn NY 11235

PL, np, DV894/897, RVA, TB-163

SIZE

A

CODE IDENT

15542

DRAWING NO:

98-PL-040

REV:

C

FILE: 98PL040

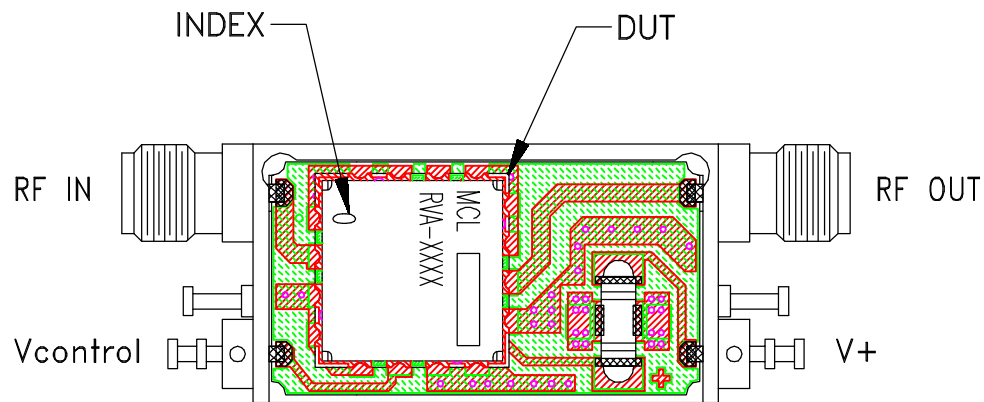
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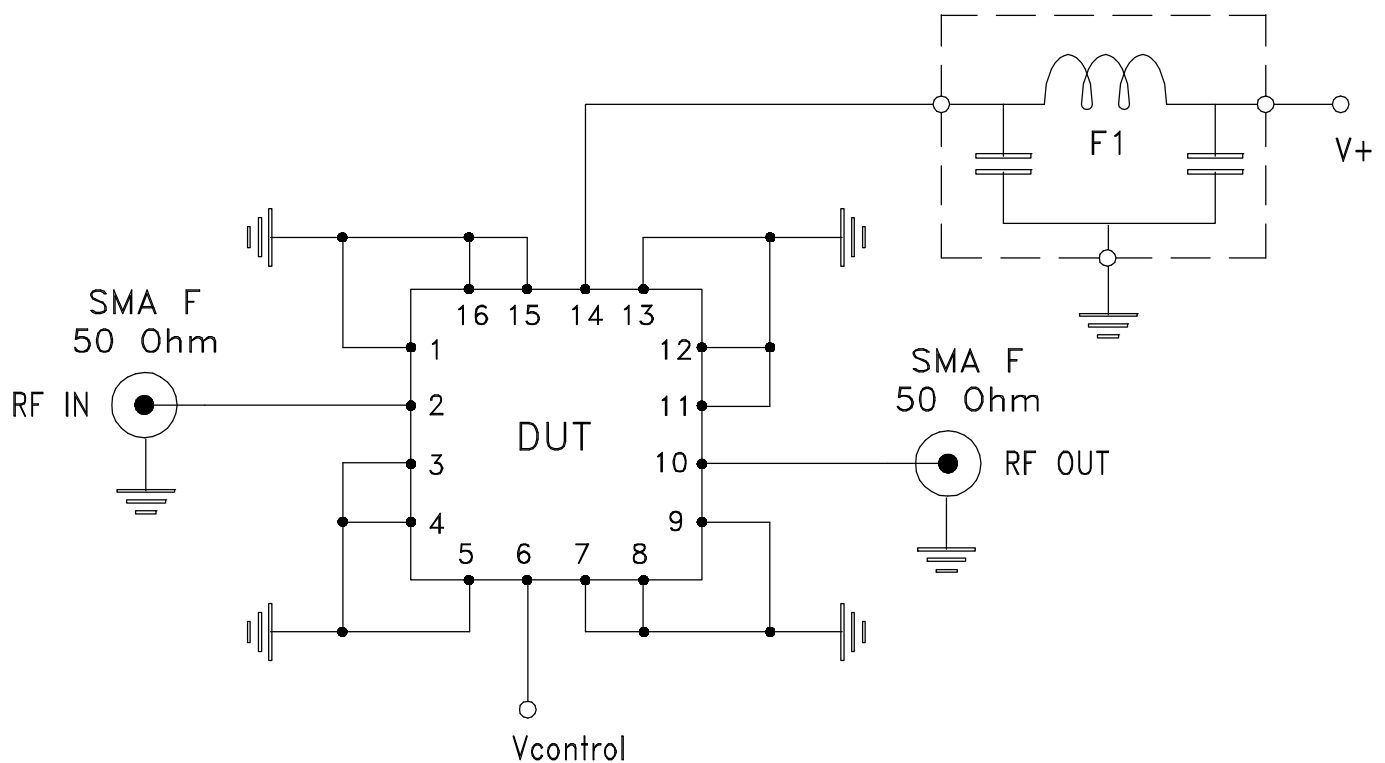
SHEET:

1 OF 1

Evaluation Board and Circuit



TB-163



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: ROGERS R04350B or equivalent, Dielectric Constant=4.5, Thickness=.020 inch.

 **Mini-Circuits®**



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 85° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutectic Process: 225°C peak Pb-Free Process, 245°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Vibration (High Frequency)	20g peak, 20-2000 Hz, 4 times in each of three axes (total 12)	MIL-STD-883, Method 2007.3, Condition A
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215