

Broad Band Voltage Variable Attenuator

RVA-2500-75+

75Ω 5 to 2500 MHz

Maximum Ratings

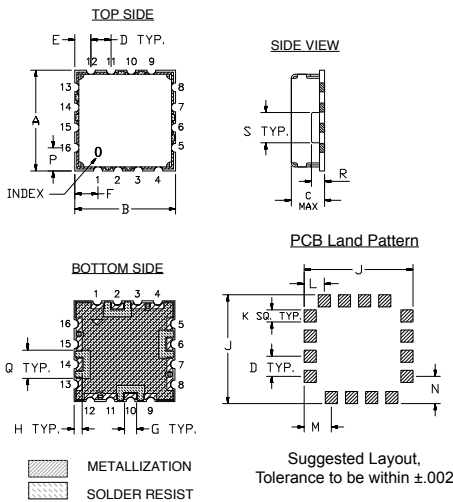
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 85°C
Absolute Max. Supply Voltage(V+)	15V
Absolute Max. Control Voltage(Vctrl)	20V
Absolute Max. RF Input Level	+21dBm

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

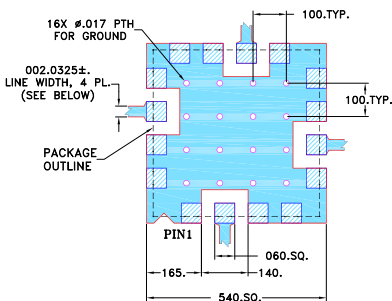
Outline Drawing



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-522+ Suggested PCB Layout (PL-303)



- NOTE:
- TRACE WIDTH IS SHOWN FOR ROGERS WITH DIELECTRIC THICKNESS 0.030" ± 0.0025"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 - 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

Features

- Broadband, 5-2500 MHz
- IP2 +90 dBm typ.
- IP3 +45 dBm typ.
- 40 dB Attenuation @ 1500 MHz
- 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
- CATV



CASE STYLE: DV874

+RoHS Compliant

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

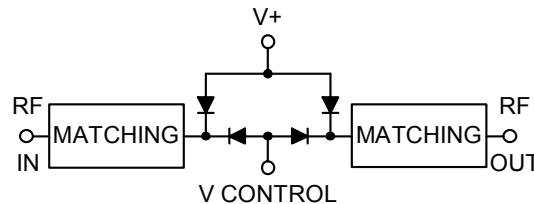
Electrical Specifications (T_{AMB} = 25°C)

FREQ. (MHz)	MIN. INSERTION LOSS, dB (+15V)		MAX. ATTEN. dB (0V)		INPUT POWER (dBm)	CONTROL Voltage Current (V) (mA)		IP3 ² (dBm)	IP2 ³ (dBm)	RETURN LOSS ⁴ (dB)	POWER SUPPLY Voltage Current (V) (mA)	
	Min.	Max.	Typ.	Min.		Max.	Max.				Max.	Typ.
5 - 500	2.8	3.6	60	40	+21	0 - 15	20	43	80	20	+3 to +5	5
500 - 1500	3.2	5.0	40	30	+21	0 - 15	20	45	90	15	+3 to +5	5
1500 - 2500	4.3	6.2	34	25	+21	0 - 15	20	50	92	13	+3 to +5	5

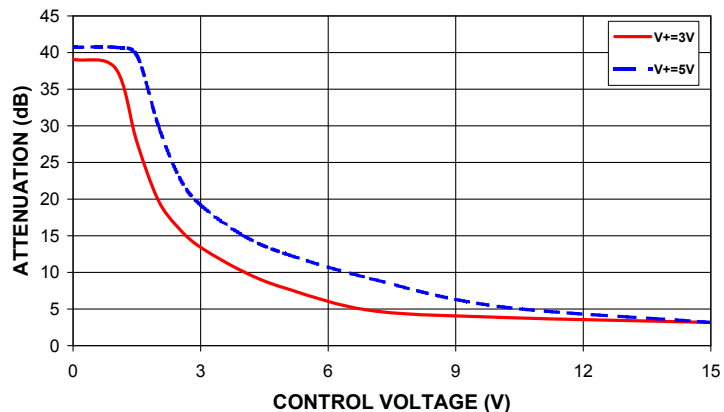
Notes:

1. Rise/Fall time: 35 / 30 μSec Typ. Switching Time & turn on/off time: 35 μSec Typ.
2. IP3 may degrade below 100MHz.
3. Typical IP2 at V+=+3V, Vc=7V.
4. Improved R.Loss in/out performance can be achieved at certain frequencies by choosing a V+ between +3V to +5V.

Equivalent Schematic



RVA-2500-75+ TYPICAL ATTENUATION AT 1000 MHz



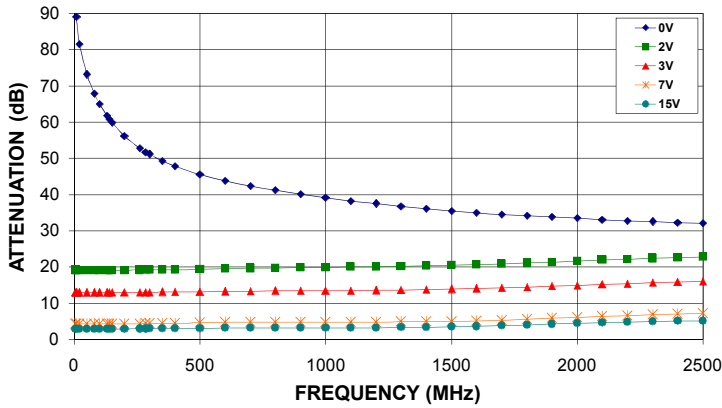
Notes

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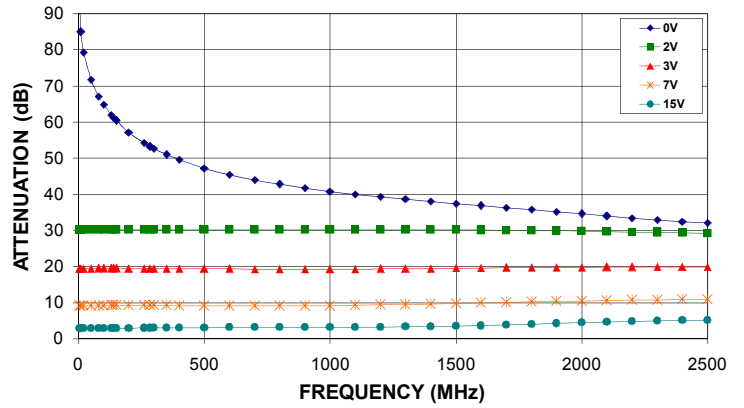


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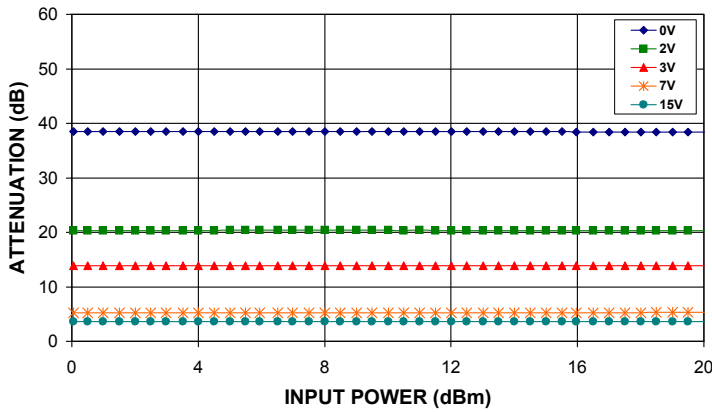
RVA-2500-75+
ATTENUATION Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V



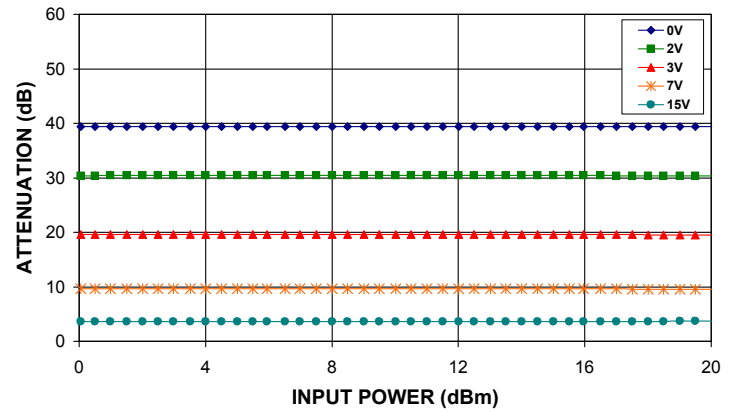
RVA-2500-75+
ATTENUATION Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V



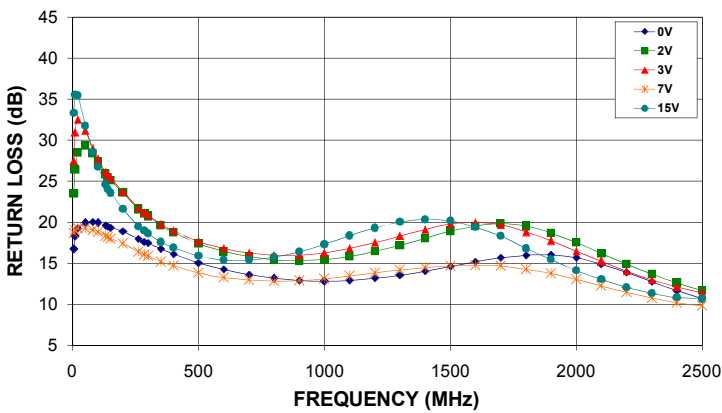
RVA-2500-75+
ATTENUATION Vs. INPUT POWER
OVER CONTROL VOLTAGES AT 1000 MHz @ V+=3V



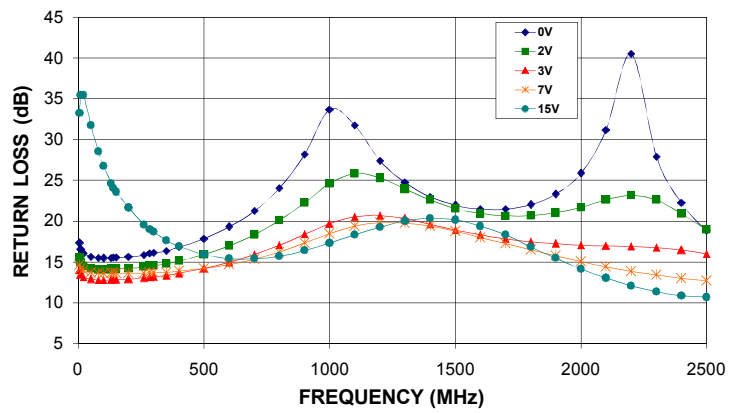
RVA-2500-75+
ATTENUATION Vs. INPUT POWER
OVER CONTROL VOLTAGES AT 1000 MHz @ V+=5V



RVA-2500-75+
INPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V



RVA-2500-75+
INPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V

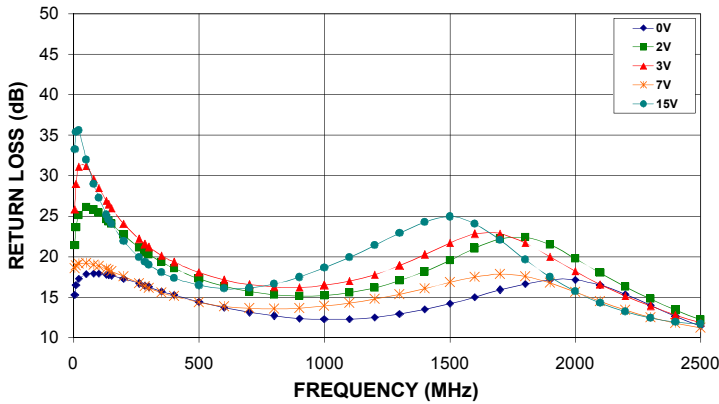


Notes

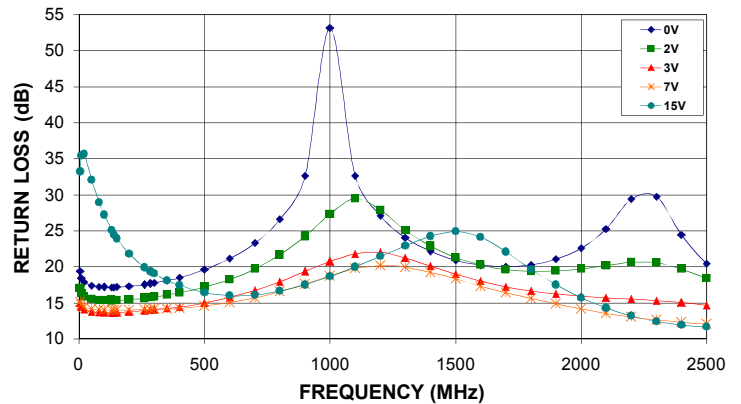
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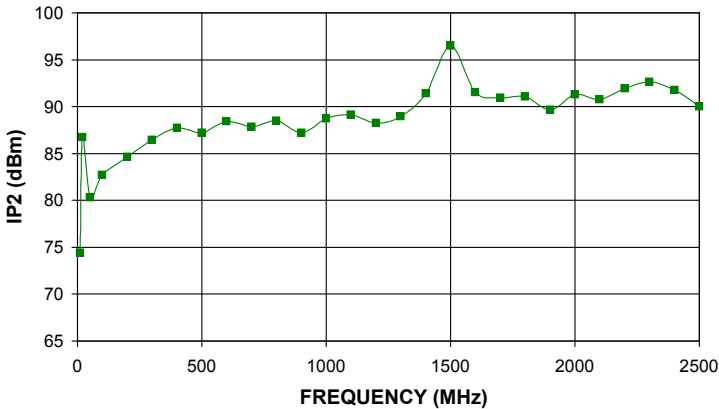
RVA-2500-75+
OUTPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V



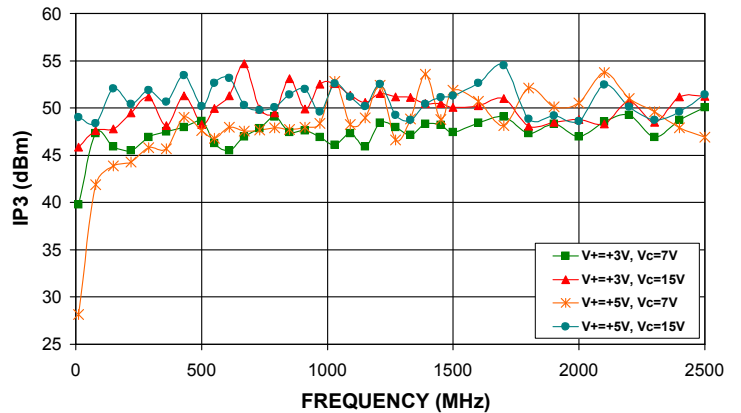
RVA-2500-75+
OUTPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V



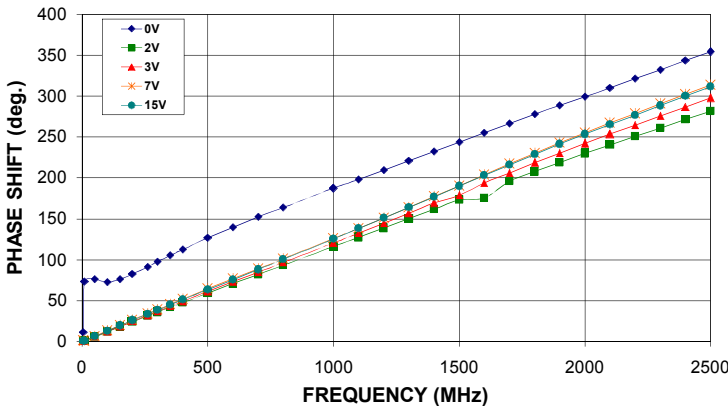
RVA-2500-75+
IP2 Vs. FREQUENCY @ V+=3V, Vc=7V



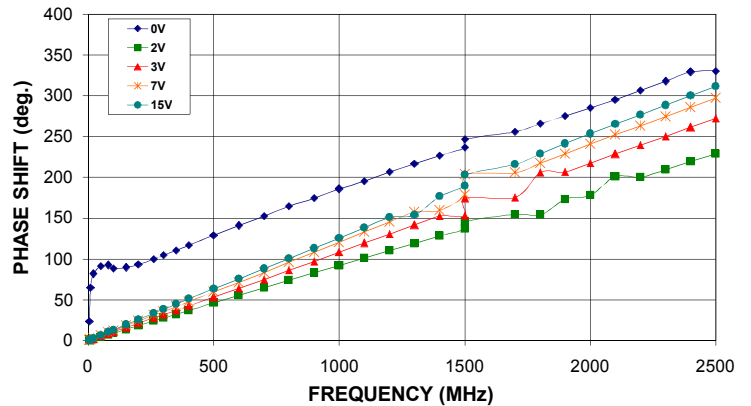
RVA-2500-75+
IP3 Vs. FREQUENCY



RVA-2500-75+
PHASE SHIFT Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V



RVA-2500-75+
PHASE SHIFT Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V



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