Broad Band

Voltage Variable Attenuator

RVA-2500-75+

75Ω 10 to 2500 MHz

CASE STYLE: DV874
PRICE: $9.95 ea. QTY (10-49)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

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

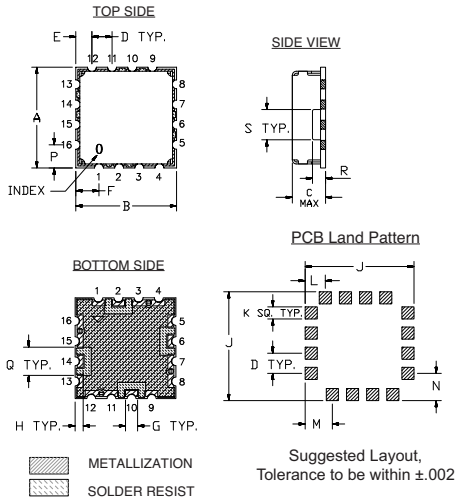
Features

- Broadband, 10-2500 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

Outline Drawing

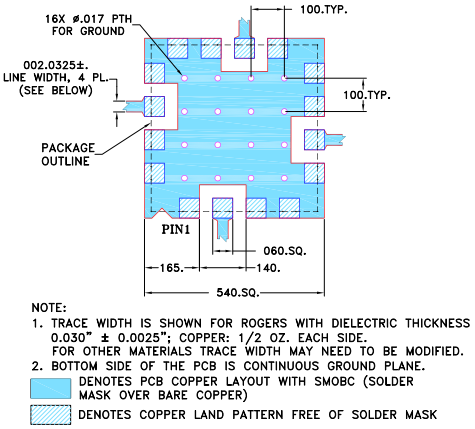


Outline Dimensions (inch / mm)

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:
1. 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.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

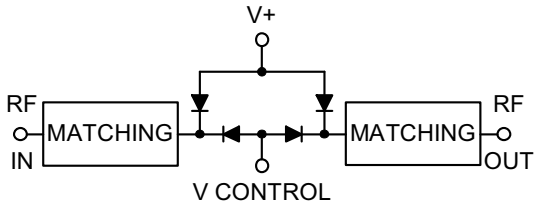
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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

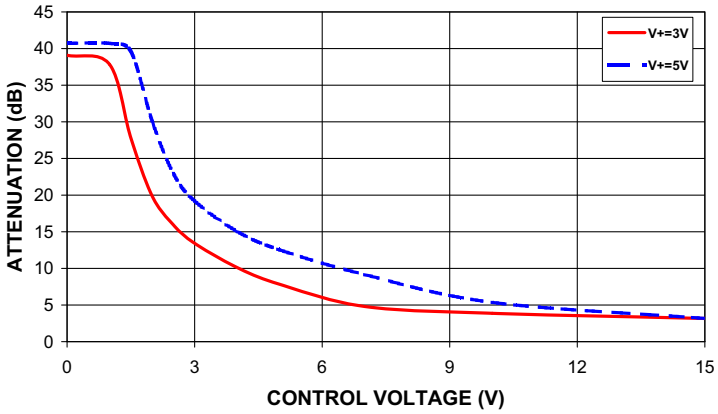
FREQ. (MHz)	MIN. INSERTION LOSS, dB (+15V)		MAX. ATTEN. dB (0V)		INPUT POWER (dBm)	CONTROL Voltage (V)	CONTROL Current (mA)	IP3 (dBm)	IP2* (dBm)	RETURN LOSS (dB)	POWER SUPPLY Voltage (V)	POWER SUPPLY Current (mA)
Min. Max.	Typ.	Max.	Typ.	Min.	Max.		Max.	Typ.	Typ.	Typ.		Max.
10 - 500	2.8	3.6	60	40	+21	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:
Rise/Fall time: 35 / 30 μSec Typ.
Switching Time & turn on/off time: 35 μSec Typ.
Improved R.Loss in/out performance can be achieved at certain frequencies by choosing a V+ between +3V to +5V
* Typical IP2 at V+=+3V, Vc=7V

Equivalent Schematic

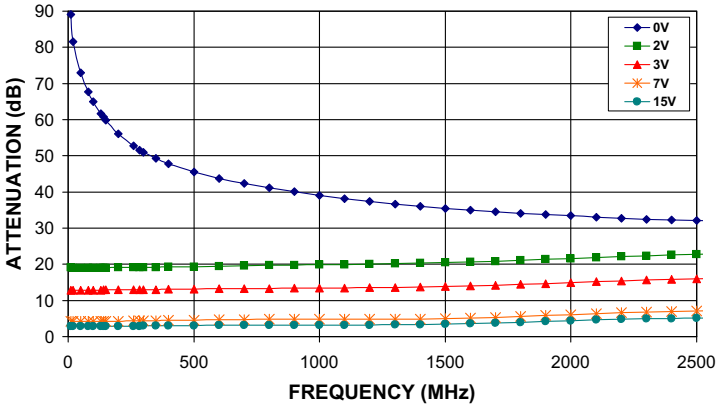


RVA-2500-75+
TYPICAL ATTENUATION AT 1000 MHz

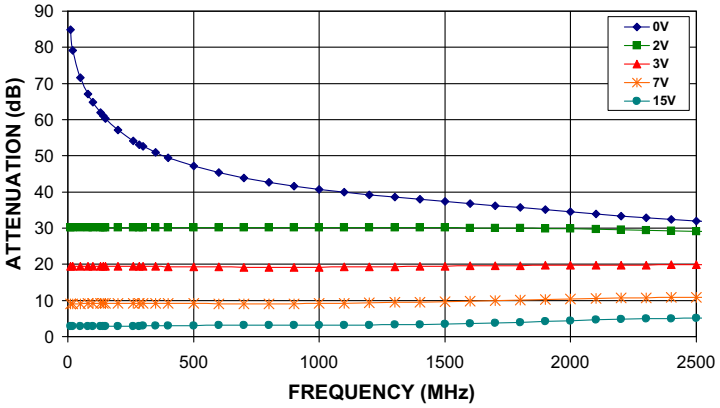


REV. OR
M123975
EDR-8414U
RVA-2500-75+
URJ/RAV
090824

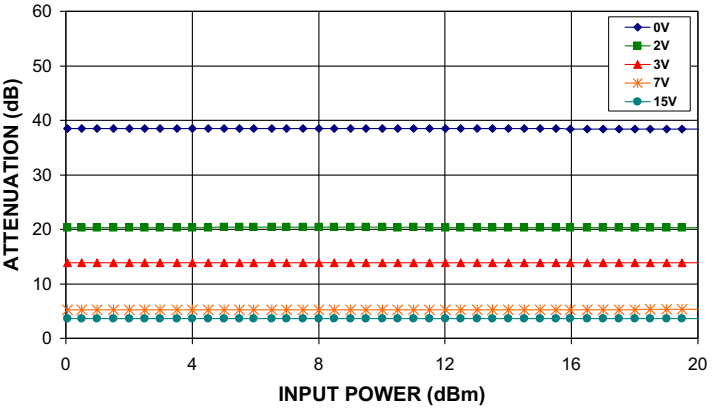
RVA-2500-75+
ATTENUATION Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V



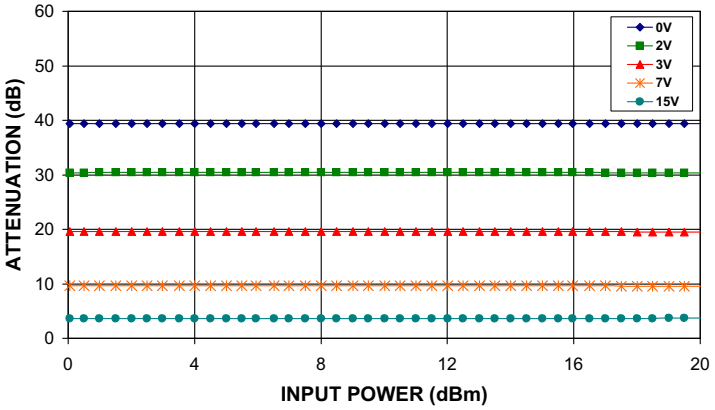
RVA-2500-75+
ATTENUATION Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V



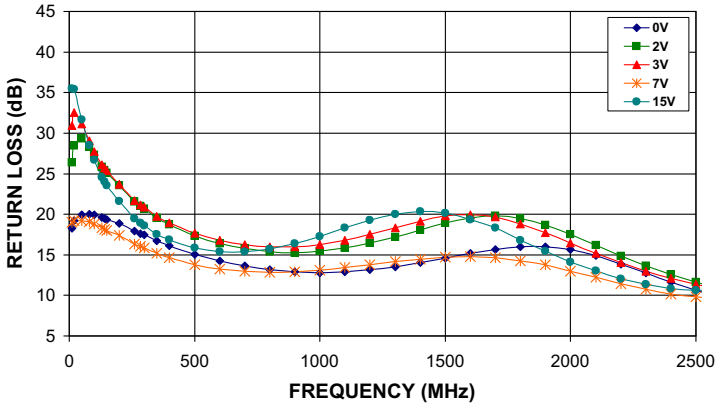
RVA-2500-75+
ATTENUATION Vs. INPUT POWER
OVER CONTROL VOLTAGES AT 1000 MHz @ V+=3V



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



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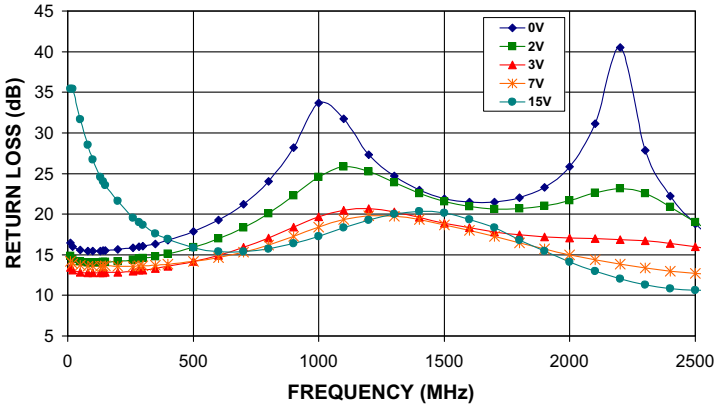
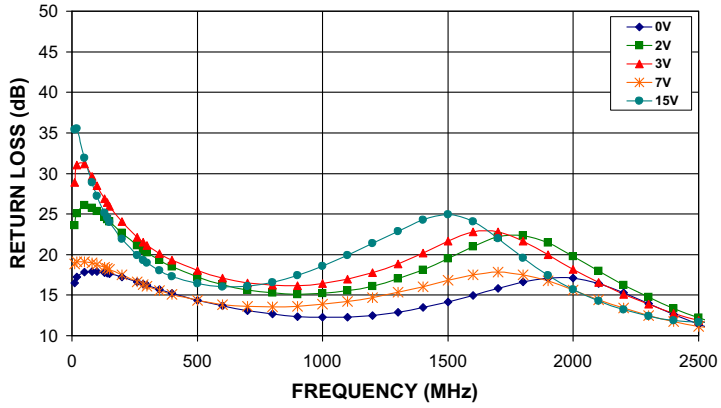


RVA-2500-75+
OUTPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V



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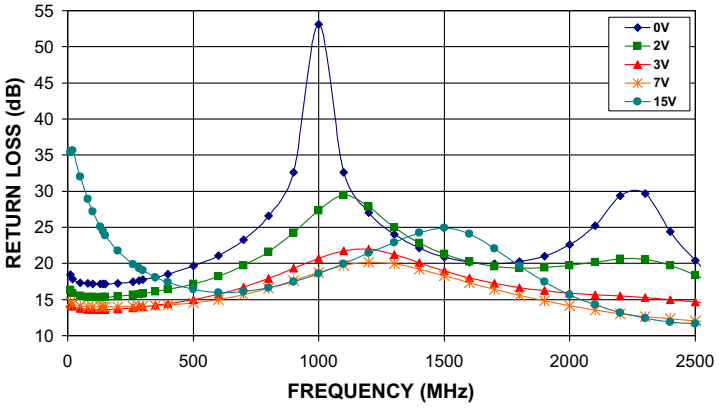
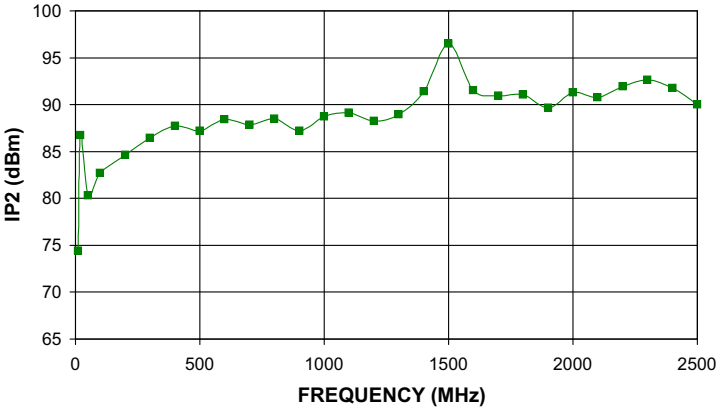
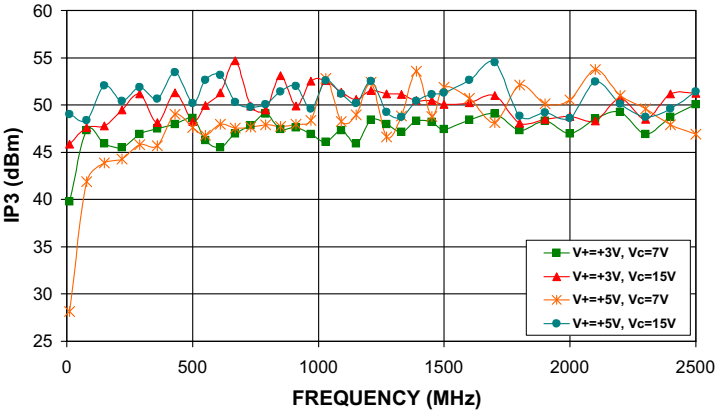


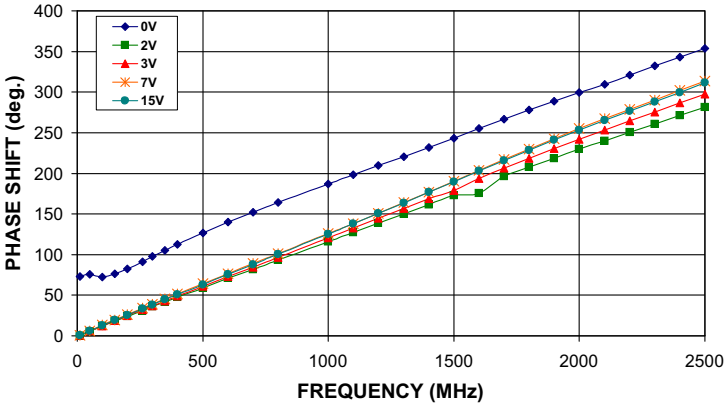
RVA-2500-75+
IP2 Vs. FREQUENCY @ V+=3V, Vc=7V



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