

# Broad Band Voltage Variable Attenuator

## RVA-3000+

50Ω 20 to 3000 MHz

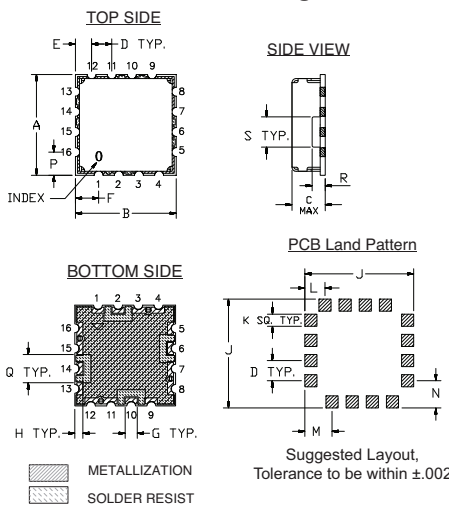
### Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 85°C
Absolute Max. Supply Voltage(V+)	12V
Absolute Max. Control Voltage(Vctrl)	20V
Absolute Max. RF Input Level	+26 dBm
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

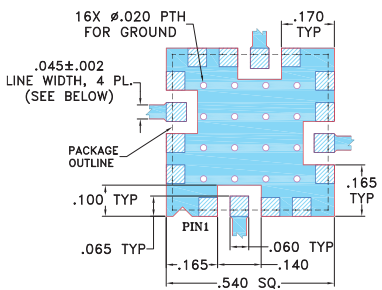
### Outline Drawing



### 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:
- 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.
  - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- Legend: Blue denotes PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER); Hatched denotes COPPER LAND PATTERN FREE OF SOLDER MASK

### Features

- Broadband, 20-3000 MHz, could be used up to 4000MHz
- IP3, +55 dBm typ.
- Good VSWR at IN/OUT ports over attenuation range
- Fast Rise/Fall Time, 5µSec/4µSec 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 amplifiers



CASE STYLE: DV874  
PRICE: \$ 11.95 ea. QTY (10-49)

### +RoHS Compliant

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

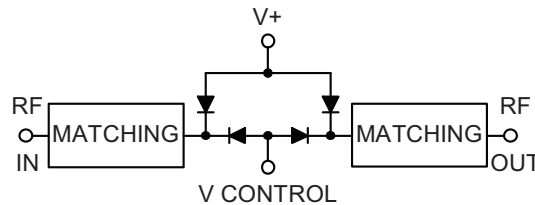
### Electrical Specifications (T<sub>AMB</sub> = 25°C)

FREQ. (MHz)	MIN. INSERTION LOSS, dB (+17V)		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.		Min.	Max.			Typ.	Max.
20 - 500	2.8	3.5	56	39	+26	0 - 17	30	48	23	+5	10
500 - 1500	3.0	4.0	40	28	+26	0 - 17	30	56	26	+5	10
1500 - 3000	3.6	5.0	29	22	+26	0 - 17	30	57	21	+5	10

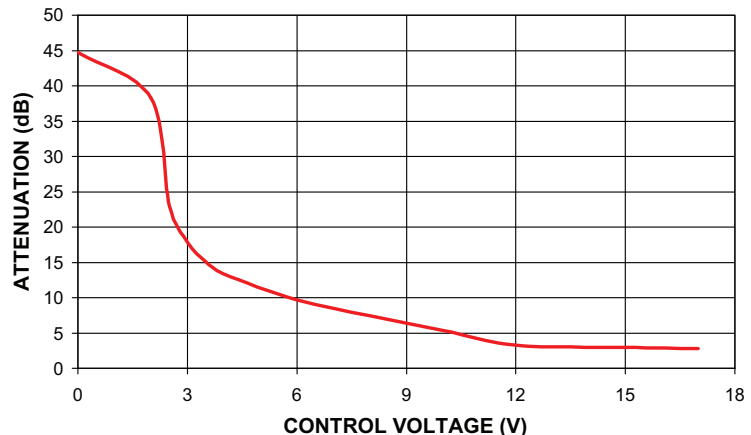
### Notes:

- Rise/Fall time: 5µSec/4µSec Typ.
- Switching Time, turn on/off: 6µSec. Typ.

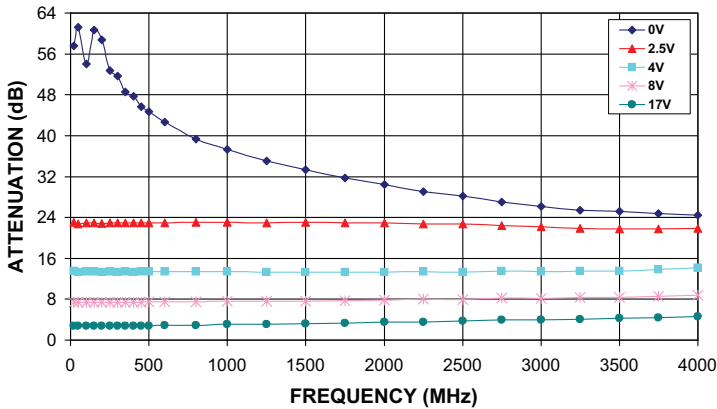
### Equivalent Schematic



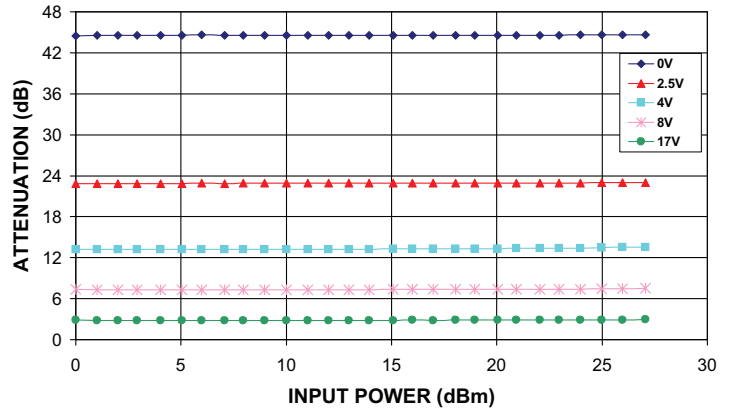
### RVA-3000+ TYPICAL ATTENUATION AT 500 MHz



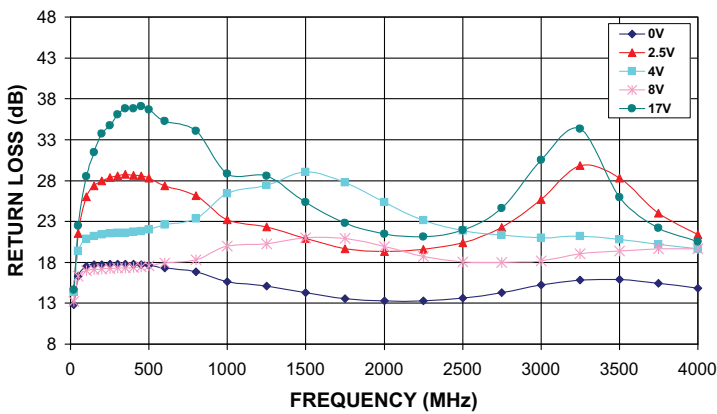
**RVA-3000+  
ATTENUATION Vs. FREQUENCY  
OVER CONTROL VOLTAGES**



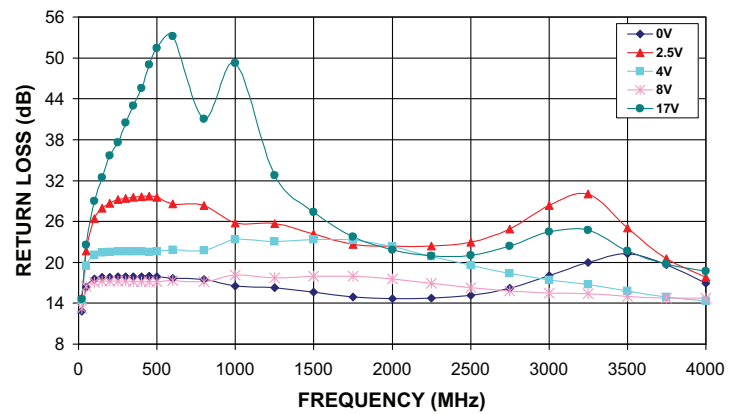
**RVA-3000+  
ATTENUATION Vs. INPUT POWER  
OVER CONTROL VOLTAGES AT 500MHz**



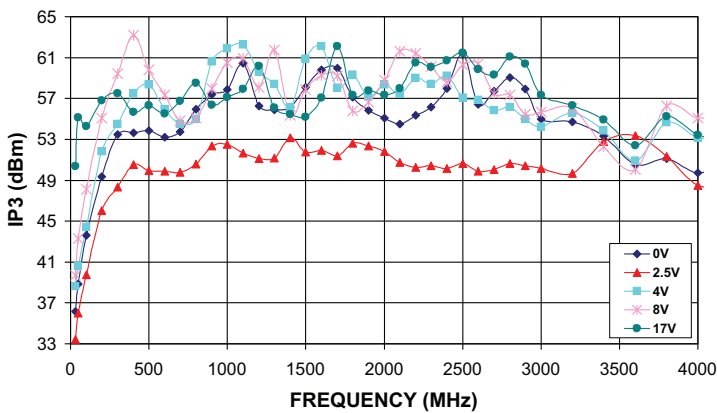
**RVA-3000+  
INPUT RETURN LOSS Vs. FREQUENCY  
OVER CONTROL VOLTAGES**



**RVA-3000+  
OUTPUT RETURN LOSS Vs. FREQUENCY  
OVER CONTROL VOLTAGES**



**RVA-3000+  
IP3 Vs. FREQUENCY  
OVER CONTROL VOLTAGES**



**RVA-3000+  
PHASE SHIFT Vs. FREQUENCY  
OVER CONTROL VOLTAGES**

