

# Surface Mount Voltage Variable Attenuator

## SVA-2000+

50Ω, 50 to 2000 MHz

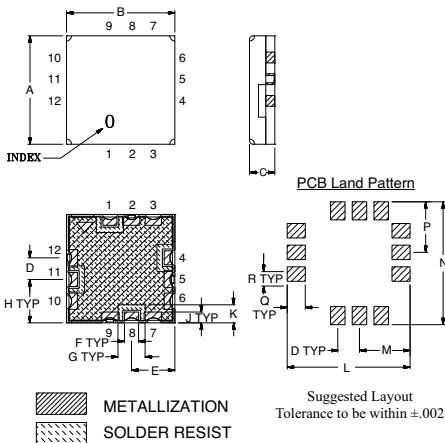
### Maximum Ratings

Operating Temperature	-45°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage(V+)	7V
Absolute Max. Control Voltage(Vctrl)	15V
Absolute Max. RF Input Level	+17dBm

### Pin Connections

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

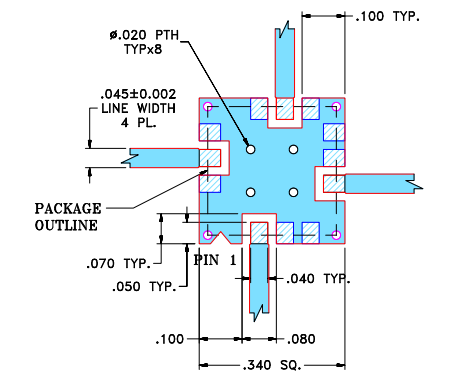
### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	
.300	.300	.100	.060	.120	.039	.075	.120	
7.62	7.62	2.54	1.52	3.05	0.99	1.91	3.05	
J	K	L	M	N	P	Q	R	wt.
.030	.050	.340	.140	.340	.140	.050	.040	grams
0.76	1.27	8.64	3.56	8.64	3.56	1.27	1.02	.25

Demo Board MCL P/N: TB-457+  
Suggested PCB Layout (PL-277)



- TRACE WIDTH IS SHOWN FOR RF4 WITH DIELECTRIC THICKNESS .025 ± .002"; 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 SOLDERMASK

### Features

- Frequency range, 50-2000 MHz
- Low Insertion Loss, 1.6dB Typ.
- Maximum attenuation at minimum current
- No external bias and RF matching network required
- Small size, 0.3" x 0.3".
- Shielded case
- Aqueous washable

### Applications

- CATV
- Power level control
- Feed forward amplifiers



CASE STYLE: FZ990  
PRICE: \$13.95 ea. QTY (10-49)

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

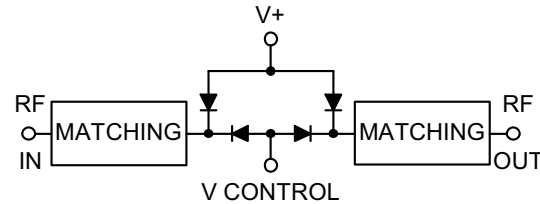
The +suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

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

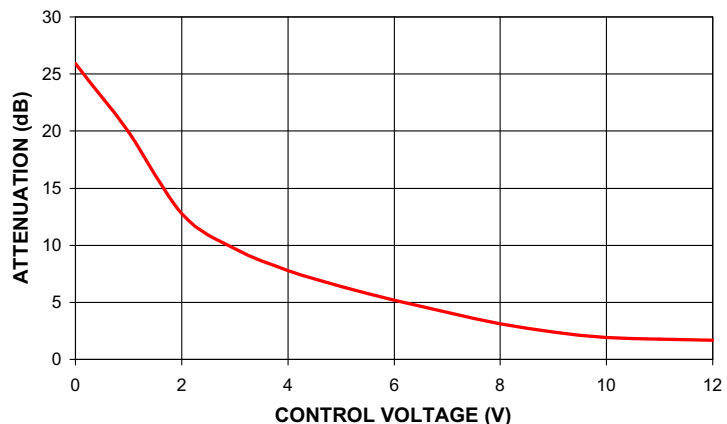
FREQ. (MHz)	MIN. INSERTION LOSS, dB (+12V)		MAX. ATTENUATION dB (0V)		INPUT POWER (dBm)	CONTROL Voltage Current (V) (mA)		IP3 (dBm)	RETURN LOSS (dB)	POWER SUPPLY Voltage Current (V) (mA)	
	Min.	Max.	Typ.	Max.		Typ.	Min.			Max.	Typ.
50 - 500			1.5	2.0		0 - 12	5	38	23	+5	2
500 - 1000			1.6	2.2		0 - 12	5	44	21	+5	2
1000 - 2000			1.9	2.6		0 - 12	5	47	20	+5	2

Notes:  
Rise/Fall time: 15µSec/19µSec Typ.  
Switching Time, turn on/off: 20µSec. Typ.

### Equivalent Schematic



### SVA-2000+ TYPICAL ATTENUATION AT 1000 MHz



**Mini-Circuits**  
ISO 9001 ISO 14001 CERTIFIED

ALL NEW  
minicircuits.com

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site

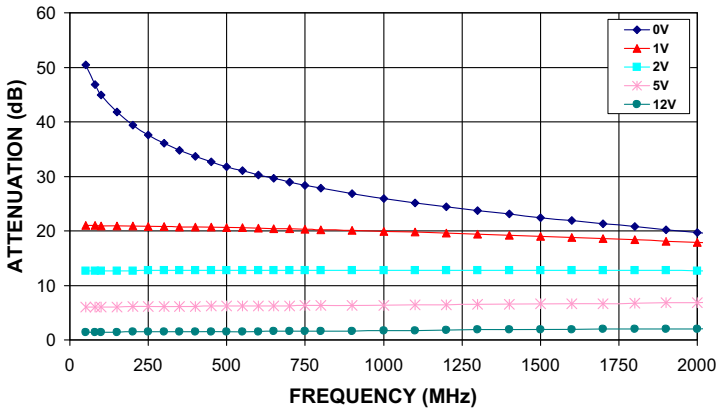


The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: [www.minicircuits.com](http://www.minicircuits.com)

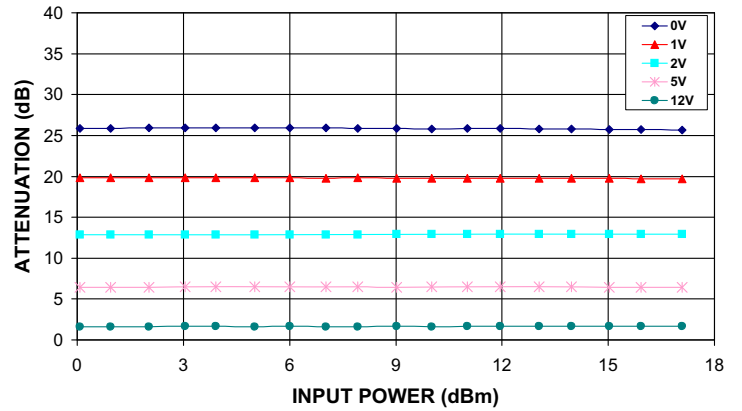
RF/IF MICROWAVE COMPONENTS

REV. OR  
M110472  
EDR-6631/3F1  
SVA-2000+  
RAV  
070618  
page 1 of 2

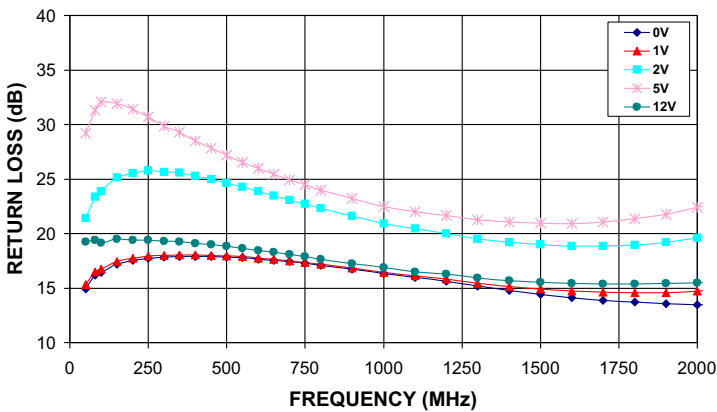
**SVA-2000+**  
ATTENUATION Vs. FREQUENCY  
OVER CONTROL VOLTAGES



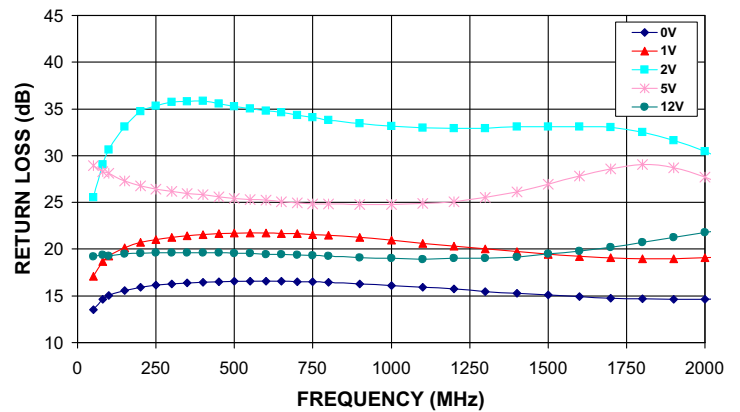
**SVA-2000+**  
ATTENUATION Vs. INPUT POWER  
OVER CONTROL VOLTAGES AT 1000MHz



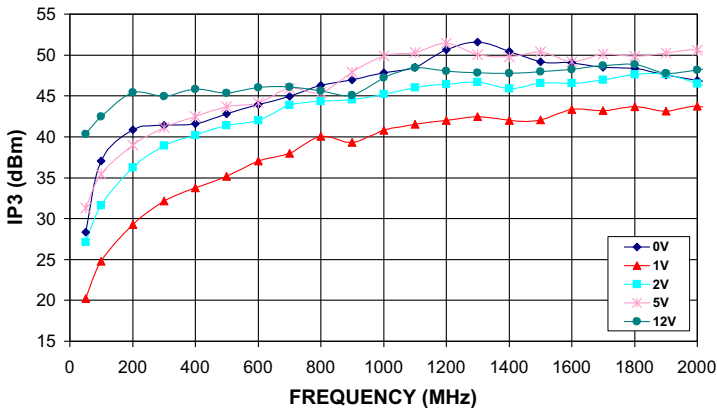
**SVA-2000+**  
INPUT RETURN LOSS Vs. FREQUENCY  
OVER CONTROL VOLTAGES



**SVA-2000+**  
OUTPUT RETURN LOSS Vs. FREQUENCY  
OVER CONTROL VOLTAGES



**SVA-2000+**  
IP3 Vs. FREQUENCY  
OVER CONTROL VOLTAGES



**SVA-2000+**  
PHASE SHIFT Vs. FREQUENCY  
OVER CONTROL VOLTAGES

