

Voltage Variable Attenuator

SYVA-16+

50Ω 10 to 16 MHz



CASE STYLE: AH202-1
PRICE: \$11.95 ea. QTY. (10)

Maximum Ratings

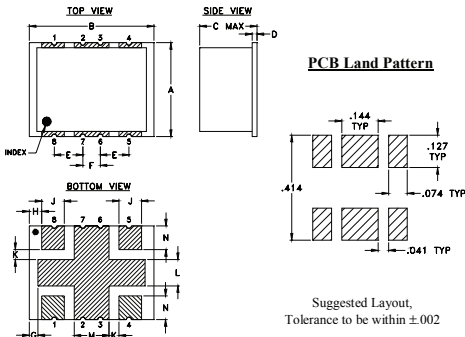
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Control Voltage	6V
Control Current	10 mA
RF Input Level	+15 dBm
Permanent damage may occur if any of these limits are exceeded.	

Pad Connections

RF IN	1
CONTROL 1*	8
CONTROL 2*	5
RF OUT	4
GROUND	2,3,6,7

* Connect together externally

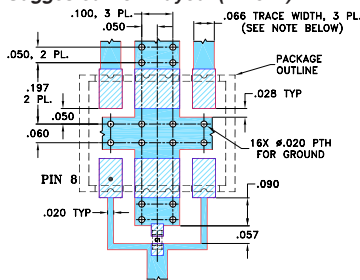
Outline Drawing



Outline Dimensions (inch)

A	B	C	D	E	F	G
.38	.50	.25	.020	.115	.070	.035
9.65	12.70	6.35	0.51	2.92	1.78	0.89
H	J	K	L	M	N	wt
.050	.090	.040	.105	.140	.095	grams
1.27	2.29	1.02	2.67	3.56	2.41	0.80

Demo Board MCL P/N: TB-560+ Suggested PCB Layout (PL-312)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; 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

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.
C. The parts covered by this specification document are subject to Mini-Circuit's standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp

Features

- low insertion loss, 0.9 dB typ.
- high attenuation, 35 dB typ.
- excellent return loss, 28 dB typ.

Applications

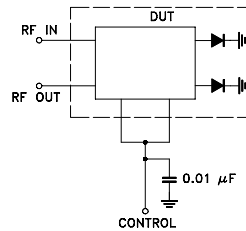
- variable gain amplifier
- feed forward amps
- ALC circuits

Electrical Specifications

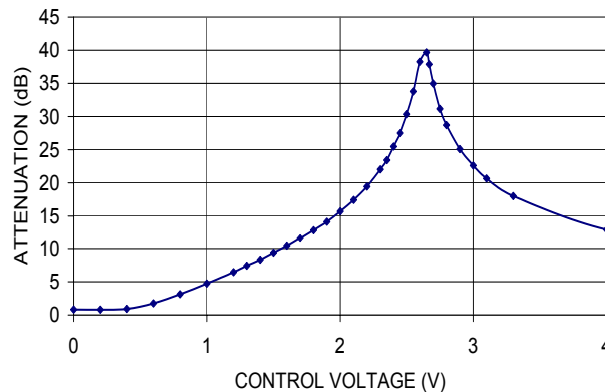
Parameter	Condition	Min.	Typ.	Max.	Units
Frequency Range		10	—	16	MHz
Insertion Loss	at 0V Control Voltage	—	0.9	1.5	dB
Attenuation		30	35	—	dB
IP3 ¹	at 0V Control Voltage	—	36	—	dBm
Input Return Loss		—	28	—	dB
Output Return Loss		—	30	—	dB
Control Voltage ²		0-4			V
Control Current		—	0.7	4	mA
Input Power		—	—	10	dBm

1. Input IP3 tested with two tones separated by 0.1 MHz at 0 dBm each and 0V control voltage.
2. Using recommended control port biasing.

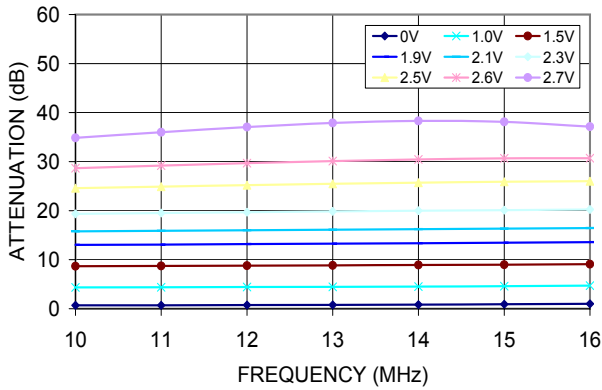
Simplified schematic of DUT



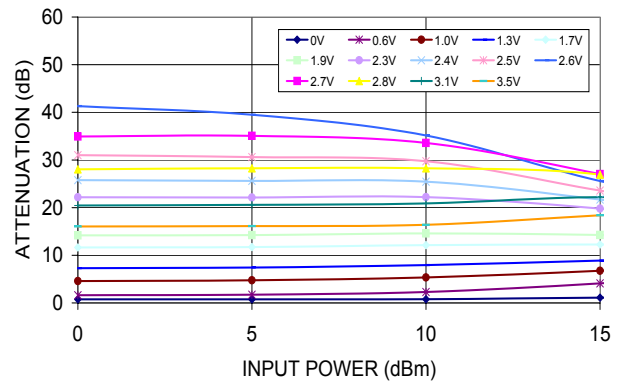
SYVA-16+
TYPICAL ATTENUATION AT 13 MHz



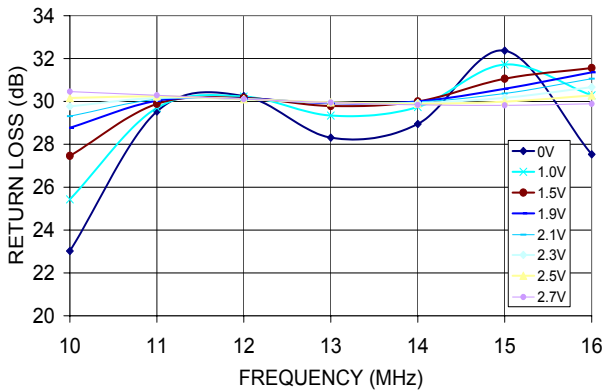
SYVA-16+
ATTENUATION Vs. FREQUENCY
OVER CONTROL VOLTAGES



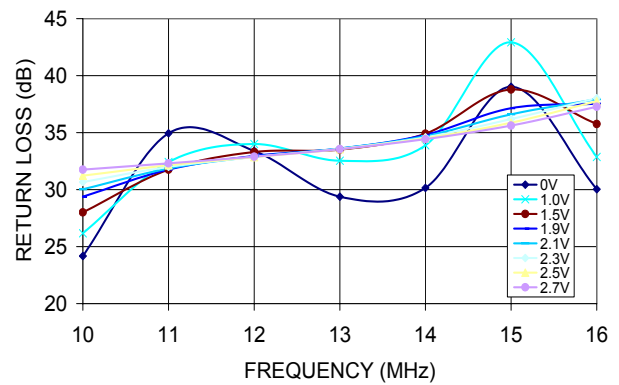
SYVA-16+
ATTENUATION Vs. INPUT POWER
OVER CONTROL VOLTAGES AT 13MHz



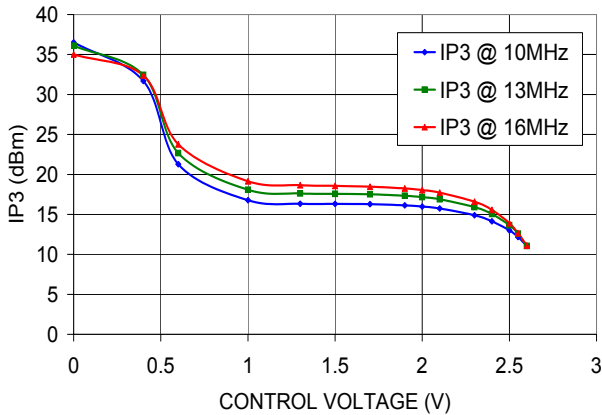
SYVA-16+
INPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES



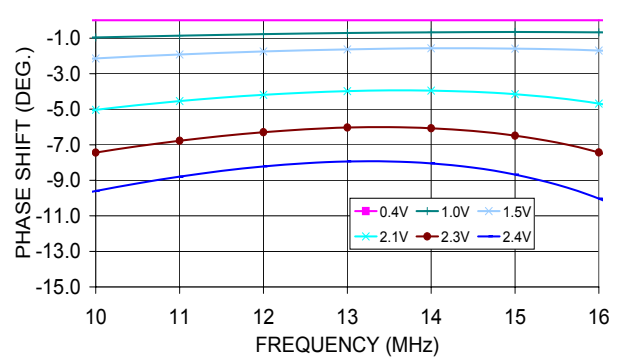
SYVA-16+
OUTPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES



SYVA-16+
IP3 Vs. CONTROL VOLTAGE Vs. FREQUENCY



SYVA-16+
PHASE SHIFT Vs. FREQUENCY
OVER CONTROL VOLTAGES 10~16MHz
(WITH RELATION TO 0V CONTROL VOLTAGE)



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