

# High IP3 Voltage Variable Attenuator

## MVA-1000+

50Ω 50 to 1000 MHz

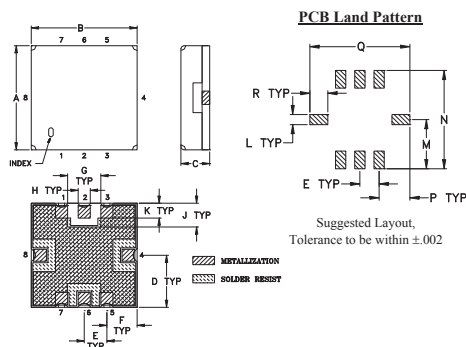
### Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 85°C
Absolute Max. Supply Voltage(V+)	7V
Absolute Max. Control Voltage(Vctrl)	6V
Absolute Max. RF Input Level	+20 dBm
Permanent damage may occur if any of these limits are exceeded.	

### Pin Connections

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

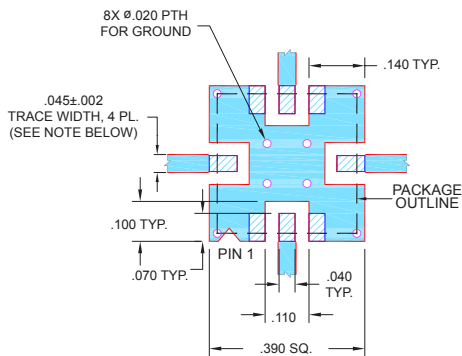
### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J
.350	.350	.150	.175	.075	.100	.110	.040	.080
8.89	8.89	3.81	4.45	1.93	2.54	2.79	1.02	2.03
K	L	M	N	P	Q	R	wt.	
.050	.040	.195	.390	.120	.390	.070	grams	
1.27	1.02	4.95	9.91	3.05	9.91	1.78	0.50	

### Demo Board MCL P/N: TB-286 Suggested PCB Layout (PL-154)



#### NOTES:

- TRACE WIDTH IS SHOWN FOR FR4 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.

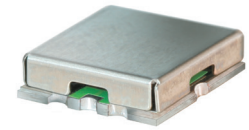
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### Features

- Frequency range, 50-1000 MHz
- High linearity, 3 dB/V typ. at Vctrl from 1V to 5V
- High IP3, +52 dBm typ.
- Small phase deviation over attenuation range
- No external bias and RF matching network required
- Shielded case
- Aqueous washable

### Applications

- CATV
- Power level control
- Feed forward amplifiers
- Public safety radio



CASE STYLE: GP1212

### +RoHS Compliant

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

Reel Size	Devices/Reel
7"	10, 20, 50, 100, 200
13"	500, 1000

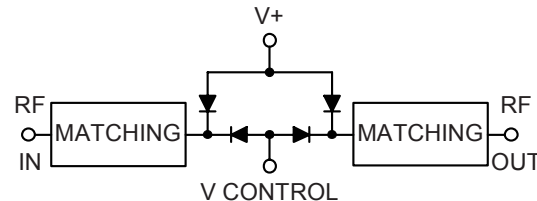
### Electrical Specifications (T<sub>AMB</sub> = 25°C)

FREQ. (MHz)	MIN. INSERTION LOSS, dB (+5V)	MAX. ATTENUATION dB (0V)	INPUT POWER (dBm)	CONTROL Voltage Current (V) (mA)	IP3 (dBm)	RETURN LOSS (dB)	POWER SUPPLY Voltage (V) Current (mA)
Min. Max.	Typ. Max.	Typ. Min.	Max.	Max.	Typ.	Typ.	Max.
50 - 1000	3.6 4.7	13.0 11.5	+20	0 - 5 15	52	20	+5 3

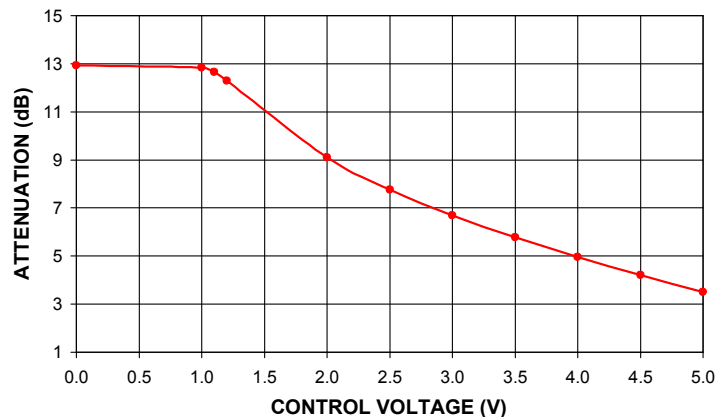
#### Notes:

Rise/Fall time: 20 μSec/60 μSec Typ.  
Switching Time, turn on/off: 50 μSec Typ.

### Equivalent Schematic



### MVA-1000+ TYPICAL ATTENUATION AT 500MHz



#### Notes

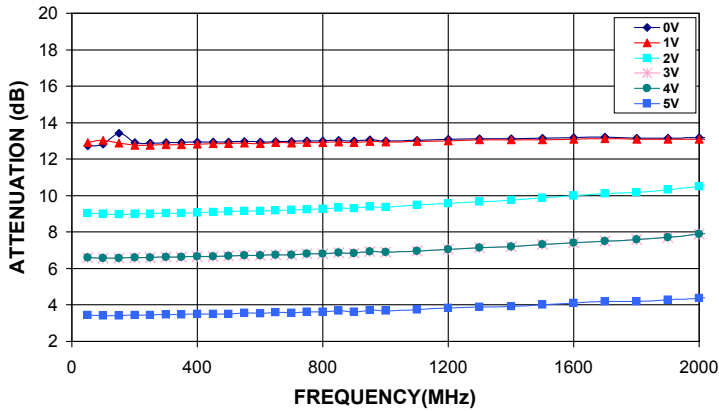
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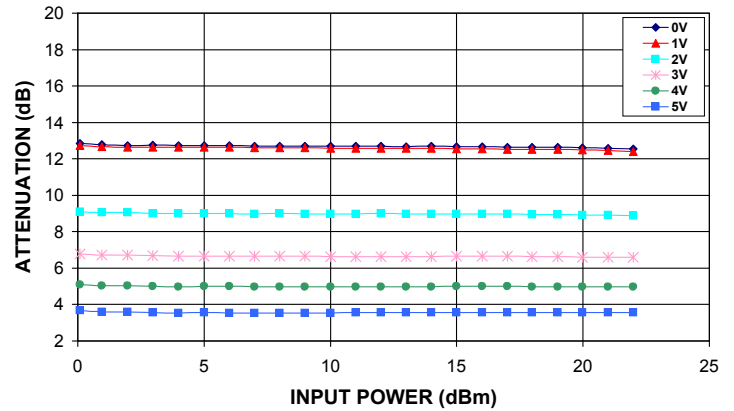
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REV. A  
M151108  
EDR-8292F1  
MVA-1000+  
RAV  
161211  
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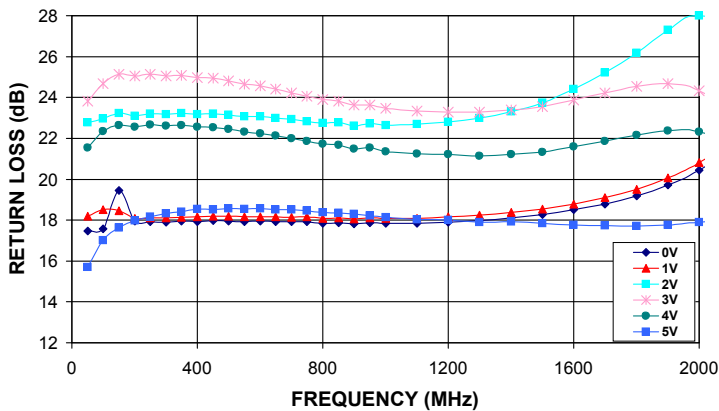
**MVA-1000+  
ATTENUATION Vs. FREQUENCY  
OVER CONTROL VOLTAGES**



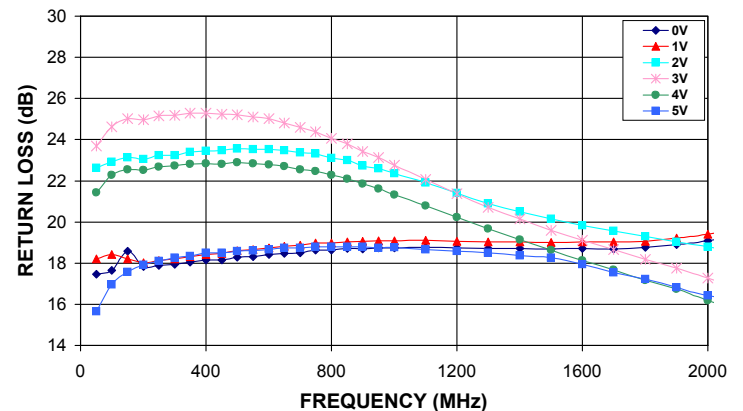
**MVA-1000+  
ATTENUATION Vs. INPUT POWER  
OVER CONTROL VOLTAGES AT 500MHz**



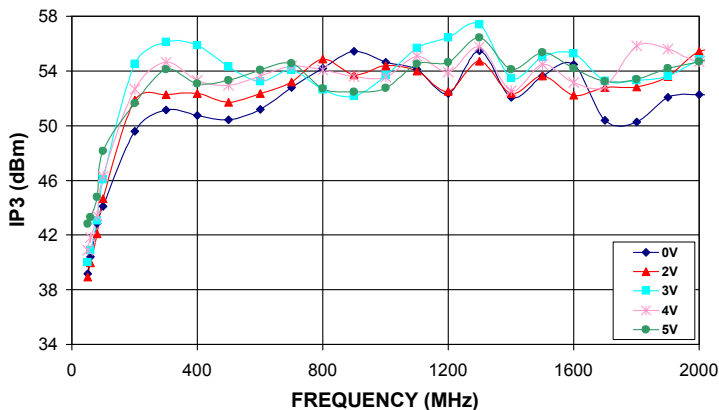
**MVA-1000+  
INPUT RETURN LOSS Vs. FREQUENCY  
OVER CONTROL VOLTAGES**



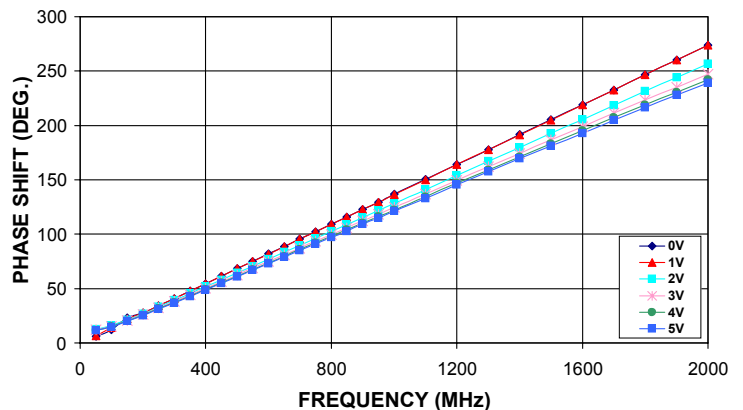
**MVA-1000+  
OUTPUT RETURN LOSS Vs. FREQUENCY  
OVER CONTROL VOLTAGES**



**MVA-1000+  
IP3 Vs. FREQUENCY  
OVER CONTROL VOLTAGES**



**MVA-1000+  
PHASE SHIFT Vs. FREQUENCY  
Vs. CONTROL VOLTAGE**



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