

Surface Mount Voltage Variable Attenuator

NEW!

VACC-09

50Ω, 600 to 1200 MHz

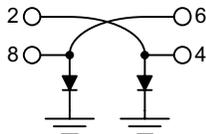
Maximum Ratings

Operating Temperature	-45°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Control Current	10mA
Absolute Max. RF Input Level	+15 dBm

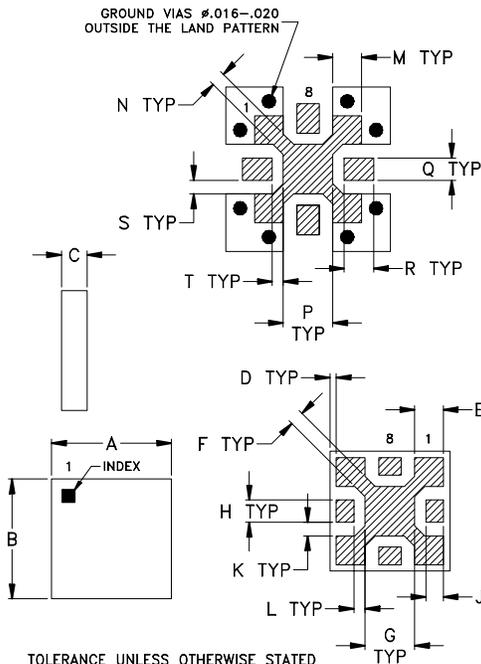
Pin Connections

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

Equivalent schematic of DUT



Outline Drawing



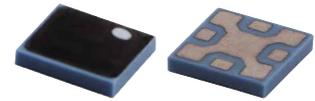
TOLERANCE UNLESS OTHERWISE STATED
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.005

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	
.150	.150	.050	.008	.036	.018	.062	.028	.022	
3.81	3.81	1.27	0.20	0.91	0.46	1.57	0.71	0.56	
K	L	M	N	P	Q	R	S	T	wt.
.017	.014	.036	.018	.062	.028	.037	.017	.014	grams
0.43	0.36	0.91	0.46	1.57	0.71	0.94	0.43	0.36	.06

Features

- frequency range, 600-1200 MHz
- IP3, 48 dBm typ.
- minimum current at min. attenuation
- low insertion loss



BLUE CELL™

CASE STYLE: GF995
PRICE: \$3.95 ea. QTY (25)

Applications

- variable gain amplifier
- feed forward amps
- ALC circuits

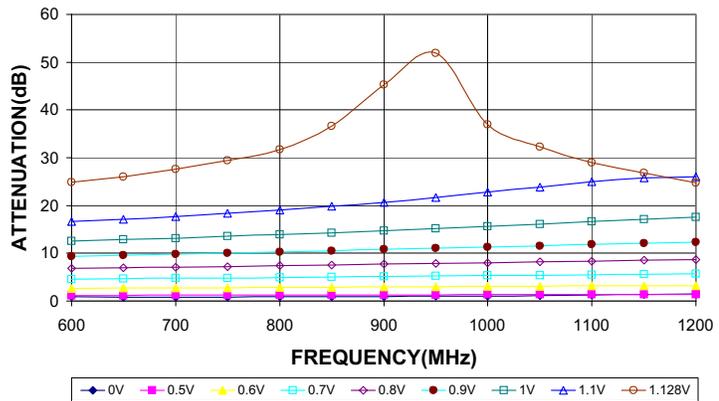
Electrical Specifications

FREQ (MHz)	INSERTION LOSS (dB)		ATTENUATION (dB)		IP3* (dBm)		RETURN LOSS (dB)		CONTROL VOLTAGE** (V)
	0V control voltage Typ.	Max.	Typ.	Min.	Typ.	Min.	Input Typ.	Output Typ.	
600-1200	1.0	2.2	25	20	48	40	20	20	0-6

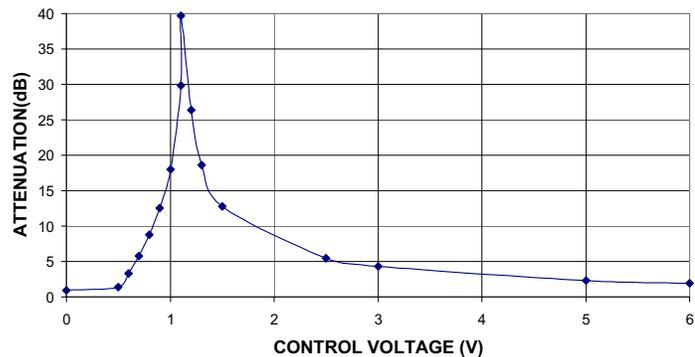
* Input IP3 tested with two tones separated by 1 MHz at 7 dBm each and 0V control voltage.

** Using recommended control port biasing.

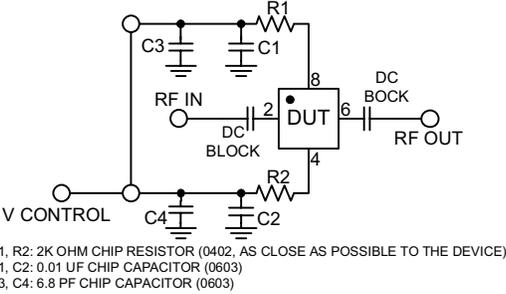
VACC-09 ATTENUATION Vs. FREQUENCY Vs. CONTROL VOLTAGE



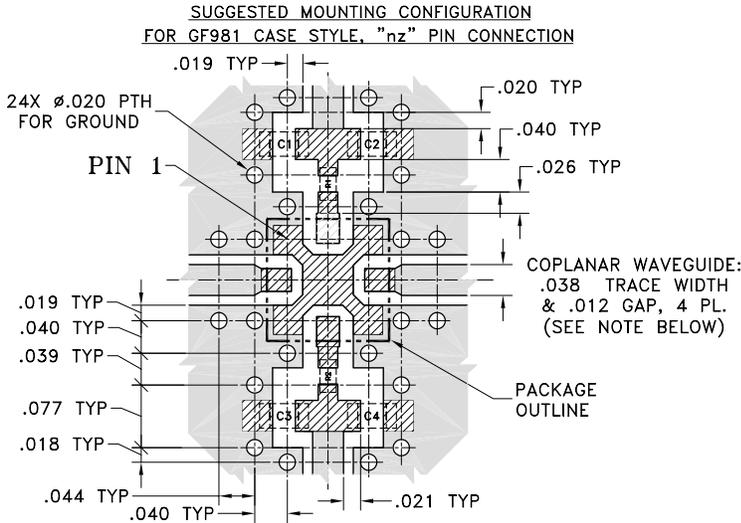
VACC-09 TYPICAL ATTENUATION AT 900MHz



Recommended control port biasing configuration



**Demo Board MCL P/N: TB-250
 Suggested PCB Layout (PL-148)**



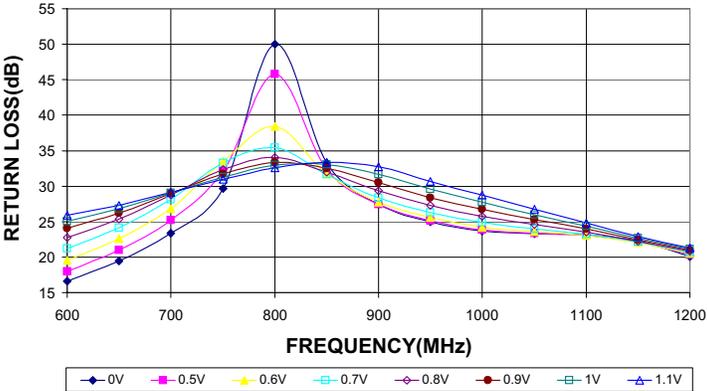
CAPACITORS C1,C3: .01 uF, 0603 SIZE
 CAPACITORS C2,C4: 6.8 pF, 0603 SIZE
 RESISTORS R1,R2: 2 KOhm, 0402 SIZE

- NOTES:** 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 2. IF YOUR PCB DESIGN RULES ALLOW, GROUND VIAS SHOULD BE PLACED UNDER THE LAND PATTERN FOR BETTER RF PERFORMANCE.

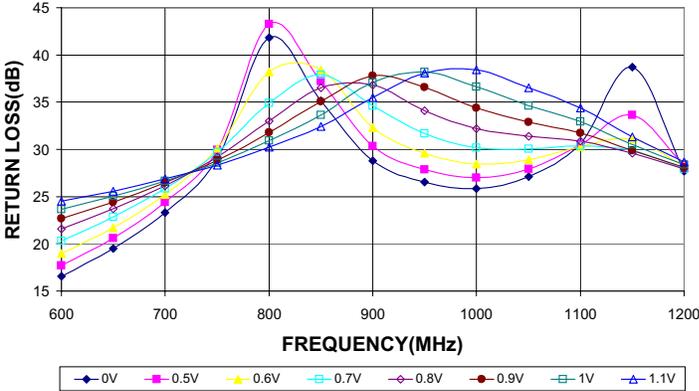
■ DENOTES PCB COPPER LAYOUT
 ▨ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Performance Curves

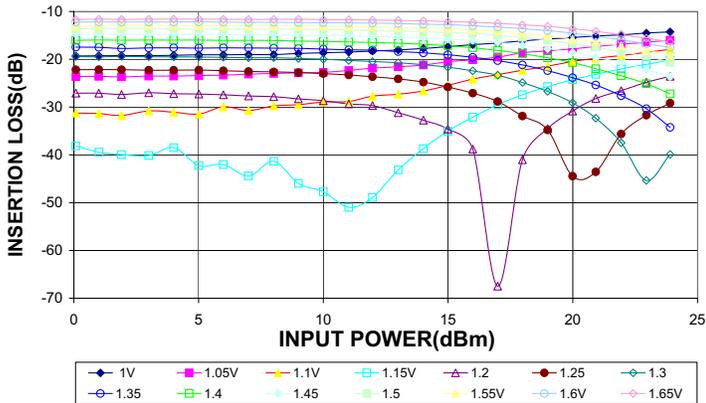
**VACC-09
 INPUT RETURN LOSS Vs. FREQUENCY
 Vs. CONTROL VOLTAGE**



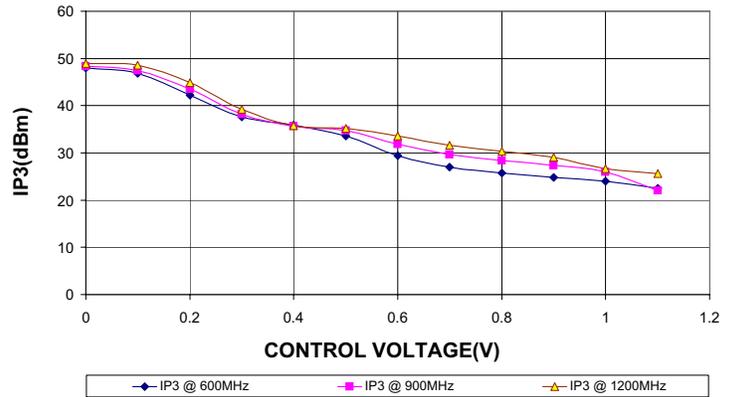
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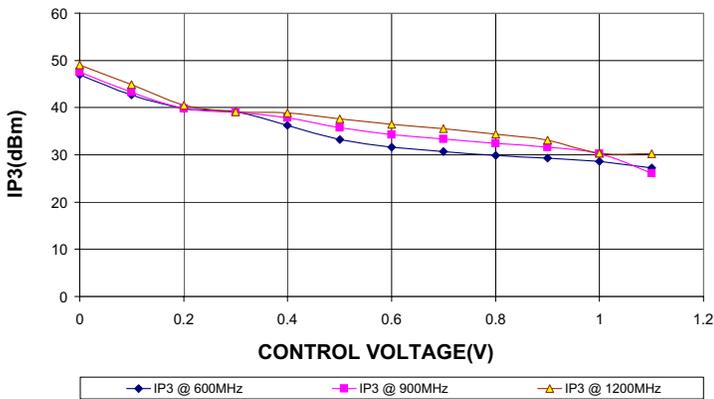
VACC-09
INSERTION LOSS Vs. INPUT POWER @ 900MHz



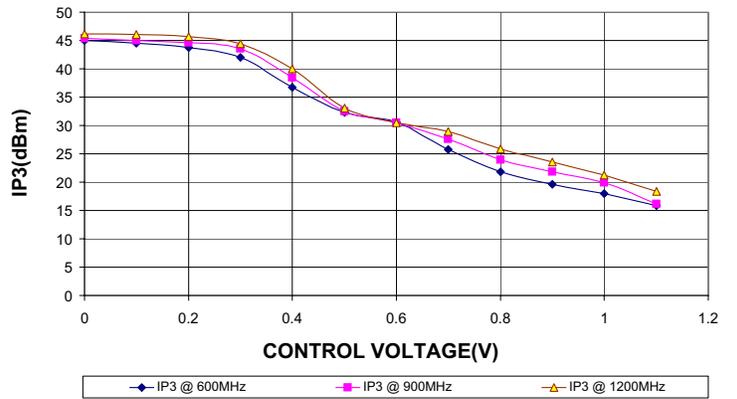
VACC-09
IP3 Vs. CONTROL VOLTAGE Vs. FREQUENCY @ 25°C



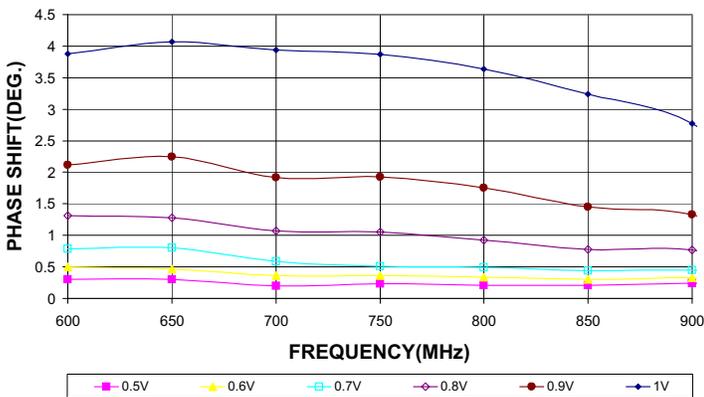
VACC-09
IP3 Vs. CONTROL VOLTAGE Vs. FREQUENCY @ 85°C



VACC-09
IP3 Vs. CONTROL VOLTAGE Vs. FREQUENCY @ -45°C



VACC-09
PHASE SHIFT Vs. FREQUENCY Vs. CONTROL VOLTAGE
600-900MHz (WITH RELATION TO 0V CONTROL VOLTAGE)



VACC-09
PHASE SHIFT Vs. FREQUENCY Vs. CONTROL VOLTAGE
900-1200MHz (WITH RELATION TO 0V CONTROL VOLTAGE)

