Surface Mount

Voltage Variable Attenuator

1600 to 2200 MHz

VACC-22+
VACC-22

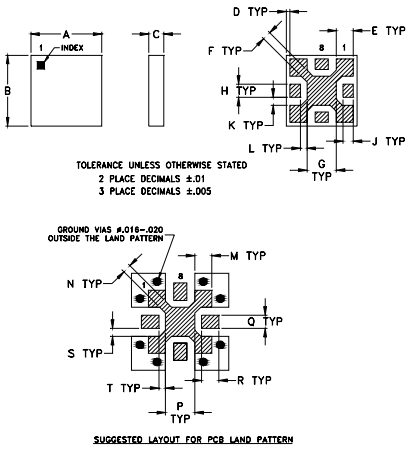
Maximum Ratings

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

Outline Drawing

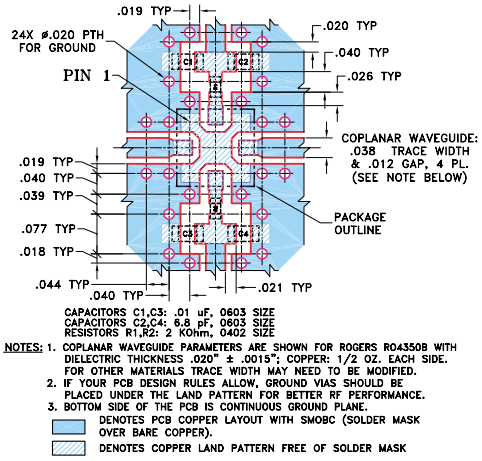


Outline Dimensions (inch / mm)

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	.037	.017	grams
0.43	0.36	0.91	0.46	1.57	0.71	0.94	0.94	0.43	0.06

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



NOTES:
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B 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.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).

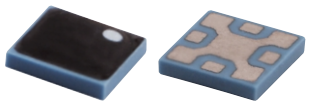
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- frequency range, 1600-2200 MHz
- IP3, 42 dBm typ.
- minimum current at min. attenuation
- low insertion loss
- protected by US Patent 7,030,713

Applications

- variable gain amplifier
- feed forward amps
- ALC circuits



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

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

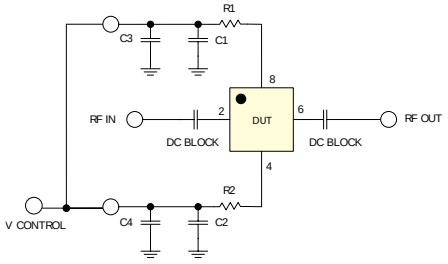
The + suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Electrical Specifications

FREQ. (MHz)	INSERTION LOSS (dB) at 0V control voltage		ATTENUATION (dB)		IP3* (dBm)		RETURN LOSS (dB)		CONTROL VOLTAGE**
							Input	Output	
Min. Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Typ.	
1600-2200	1.2	1.5	25	23	42	38	20	20	0-5

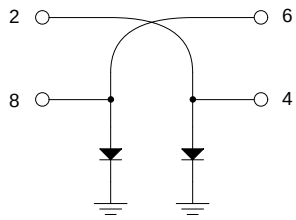
* Input IP3 tested with two tones separated by 1 MHz at 7 dBm each and 0V control voltage.
**Using recommended control port biasing.

recommended control port biasing configuration

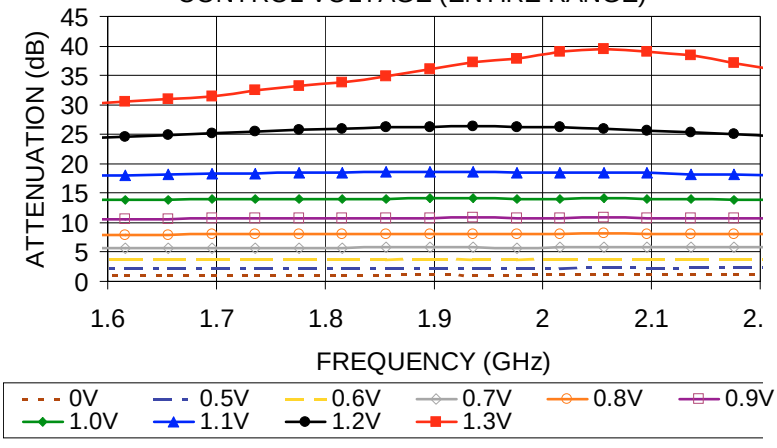


R1, R2: 2K OHM CHIP RESISTOR (0402, AS CLOSE AS POSSIBLE TO THE DEVICE)
C1, C2: 0.01 UF CHIP CAPACITOR (0603)
C3, C4: 6.8 PF CHIP CAPACITOR (0603)

equivalent schematic of DUT

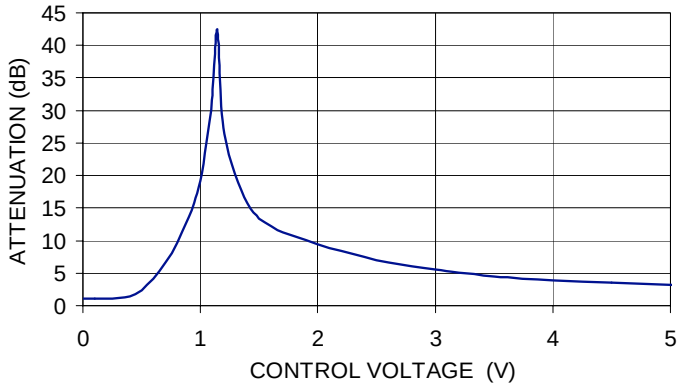


VACC-22
ATTENUATION Vs. FREQUENCY Vs.
CONTROL VOLTAGE (ENTIRE RANGE)

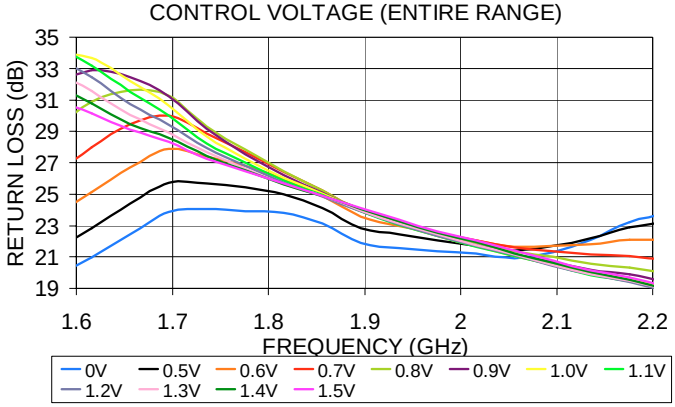


Performance Curves

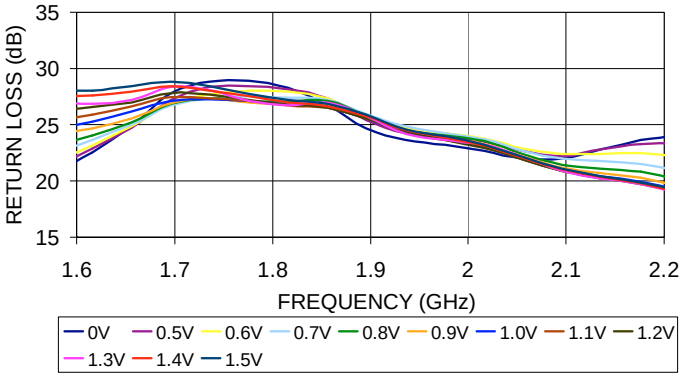
VACC-22
TYPICAL ATTENUATION AT 1900 MHz



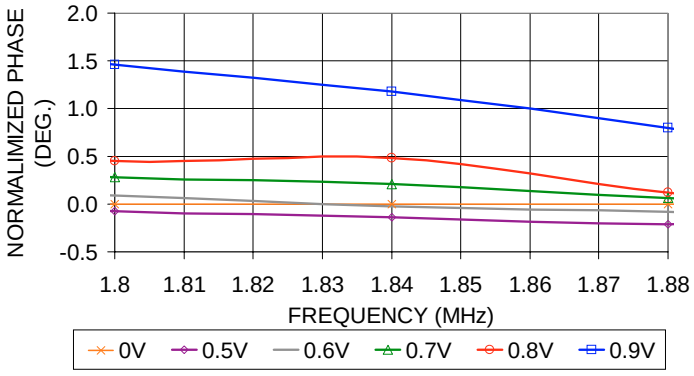
VACC-22
OUTPUT RETURN LOSS vs. FREQUENCY vs.
CONTROL VOLTAGE (ENTIRE RANGE)



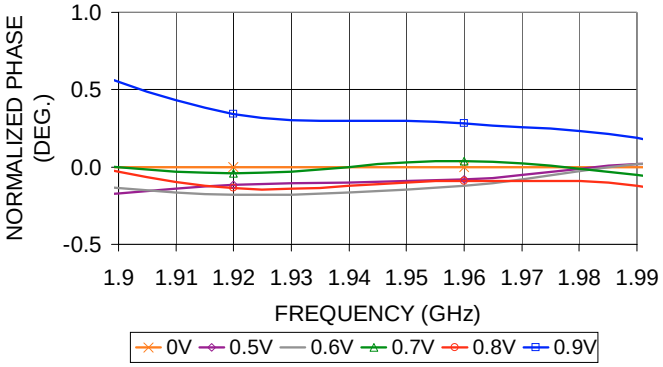
VACC-22
INPUT RETURN LOSS Vs. FREQUENCY Vs.
CONTROL VOLTAGE (ENTIRE RANGE)



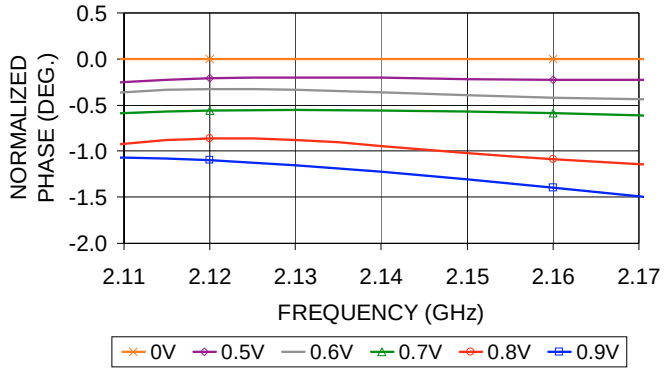
VACC-22
PHASE SHIFT Vs. FREQUENCY Vs. CONTROL
VOLTAGE (DCS)



VACC-22
PHASE SHIFT Vs. FREQUENCY Vs. CONTROL
VOLTAGE (PCS)



VACC-22
PHASE SHIFT Vs. FREQUENCY Vs. CONTROL
VOLTAGE (UMTS)



Performance Curves