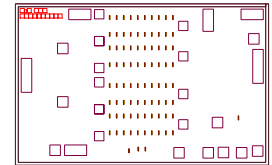


## Features:

- Frequency Range: 4.9 to 5.4 GHz
- OIP3: +45 dBm at 5.1 GHz
- P1dB: +33.5 dBm at 5.1GHz
- Pave: +25.6 dBm @ 2% EVM with 802.16 WiMax 64QAM signal 9V,565mA
- Gain: 10 dB @ 5 GHz
- Single Supply and on-chip active bias for ease of operation & bias stability
- Power On/Off Control with adjustable Vpc on-voltage & quiescent bias current

## CHIP LAYOUT



## Applications:

- WiMax
- Broadband Wireless
- Point-to-point Radios

## Description:

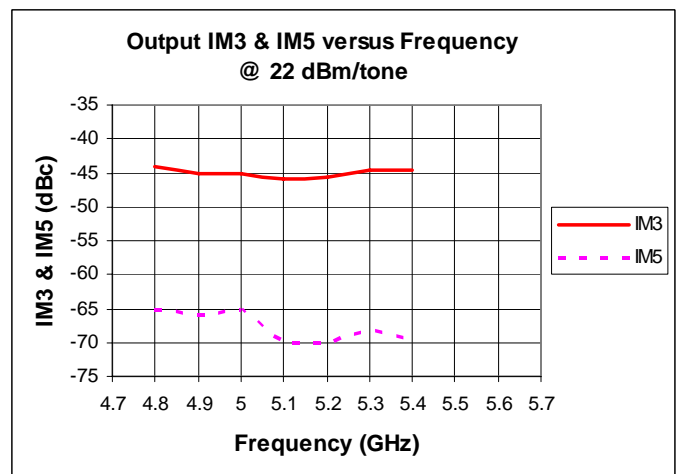
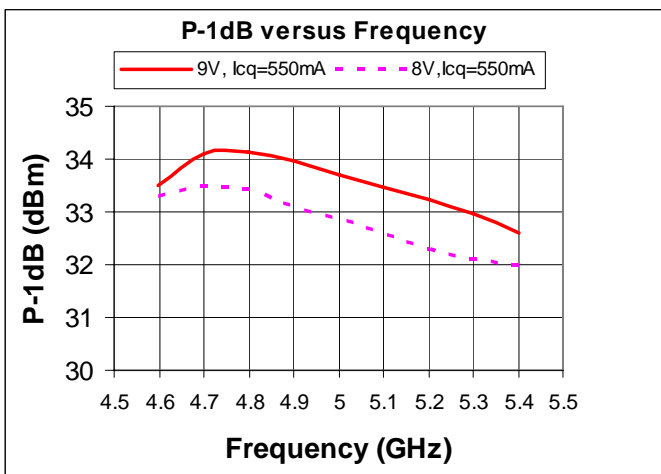
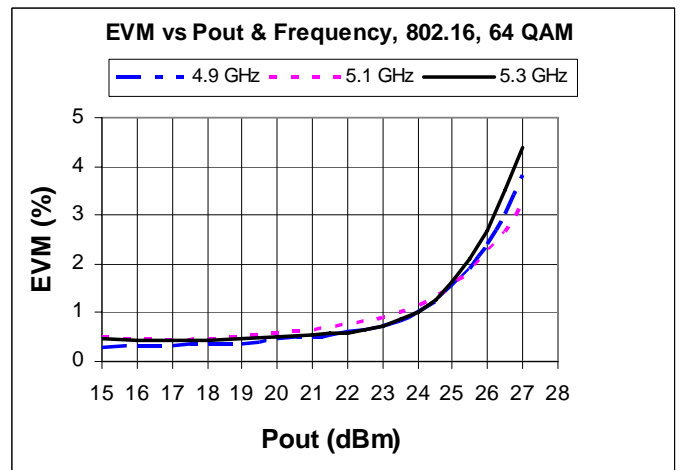
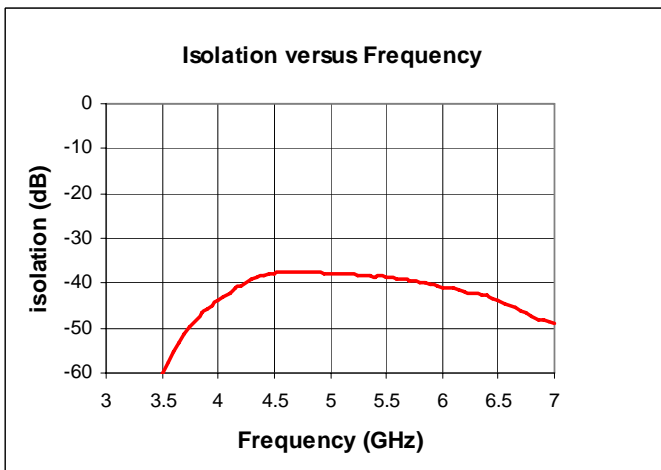
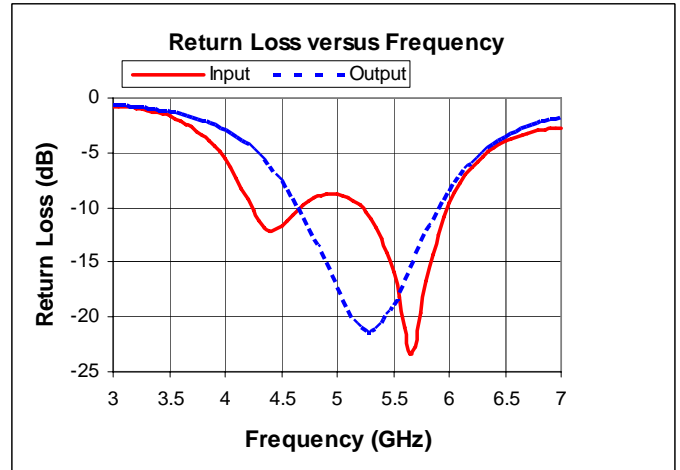
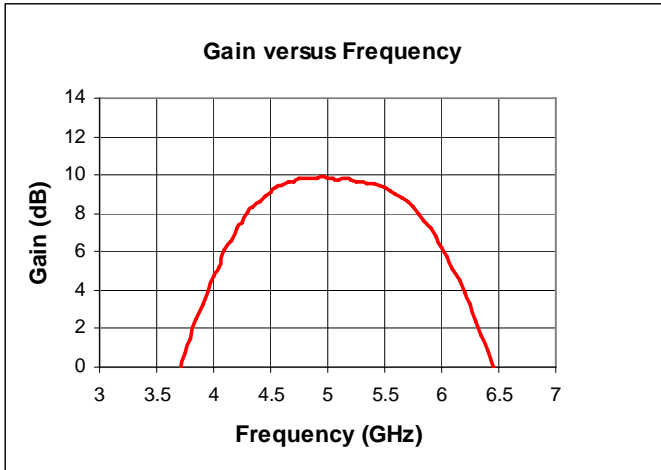
The MHA-495433 is a high-performance reliable MMIC power amplifier utilizing high-reliability, high-breakdown voltage InGaP HBT technology. Power MMIC is ideally suited for driver or output stages in wireless applications such as 802.16 WiMAX, 802.11 WLAN & ISM, point-to-point radios & Telecom Infrastructure. MHA-495433 HBT MMIC Power Amplifier Chip has 50-ohm fully-matched output, pre-matched input, on-chip DC blocking capacitor, active bias and power detector built into the chip.

## Electrical Specifications: @ Vcc=+9.0V, Icq=550mA, Vpc=4.1 V, Tbase=25 °C, Z0=50 ohm <sup>(1)</sup>

Parameter	Units		
Frequency Range	GHz	4.9 - 5.4	
Gain (Typ)	dB	10	@ 5 GHz
Gain Flatness(Typ )	+/-dB	0.5	
Input Return Loss(Typ)	dB	10	
Output Return Loss(Typ)	dB	15	
Output P-1dB(Typ)	dBm	34.0	4.9 GHz, Icc=726mA
		33.5	5.1 GHz, Icc=685mA
		33.0	5.3 GHz, Icc=681mA
Pout @ 2% EVM	dBm	25.6	4.9 GHz, Icc=568mA
		25.7	5.1 GHz, Icc=570mA
		25.4	5.3 GHz, Icc=565mA
Output IP3(Typ) @ 22 dBm/tone, 1 MHz separation	dBm	45	
Power Control Voltage Vpc	V	4.1	ON
		< 2	OFF
Power Control Current Ipc	mA	12	
Operating Bias Conditions: Vcc	V	+ 9	
Icq	mA	550	
Detector Output Voltage Vdet Range	V	TBD	

(1) All Data is measured on 50 ohm Microstrip Carrier with external partial input match

**Typical RF Performance:**  $V_{cc}=+9V$ ,  $I_{cq}=550mA$ ,  $T_{base}=25\text{ }^{\circ}C$ ,  $Z_0 = 50\text{ Ohm}$ , on Microstrip Carrier





# **MHA-495433**

**4.9- 5.4 GHz 2W InGaP HBT MMIC Power Amplifier  
With Active Bias  
Advanced Data Sheet  
June 2008 V0**

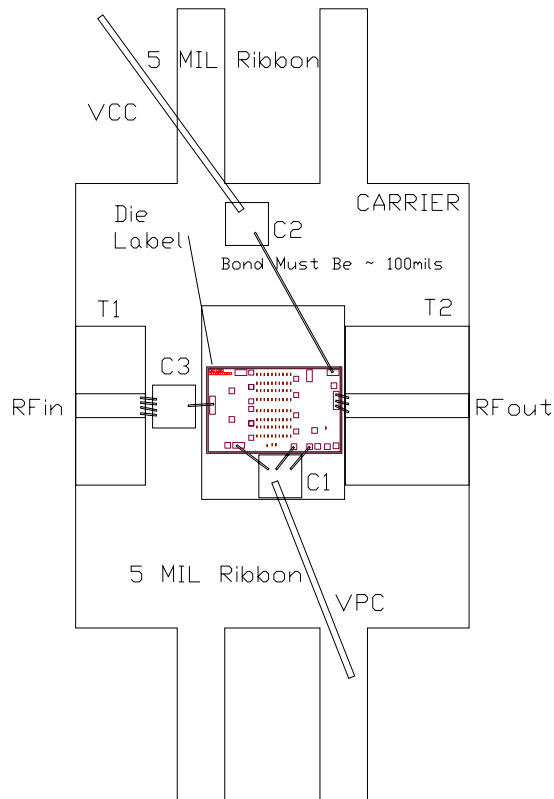
## **Absolute Maximum Ratings:**

<b>SYMBOL</b>	<b>PARAMETERS</b>	<b>UNITS</b>	<b>ABSOLUTE MAXIMUM</b>
Vcc	Collector Voltage	V	10
Icq	Quiescent Collector Current	mA	700
Pdiss	DC Power Dissipation	W	TBD
Pin max	RF Input Power	dBm	TBD
Toper	Operating Case/Lead Temperature Range	°C	- 40 to + 85
Tch	Channel Temperature	°C	170
Tstg	Storage Temperature	°C	-60 to +150

\*Operation of this device above any one of these parameters may cause permanent damage.

**Mechanical Information:**

**50 ohm Microstrip Carrier MMIC Assembly with external match & bypass capacitors**



**Bill of Materials:**

- C1, C2: 750 pF Ceramic Chip Capacitor
- C3: 0.6 pF Ceramic Chip Capacitor
- T1, T2: 50 ohm Microstrip Line on 15 mil thick Alumina Substrate