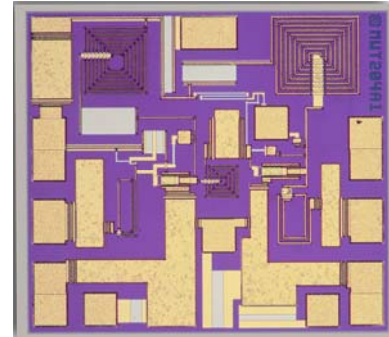


## Features:

- Single Bias +6V with 80mA Operation Current
- Fully Matched Input/Output
- On-Chip Input/Output DC Blocking
- On-Chip DC Bias RF Choke and Bypass
- Gain: 15dB
- P1dB: 16dBm
- Small Size: 1.0 x 0.9 x 0.1 mm
- Reliable PHEMT Technology



## Description:

The MMA-021015 is a 2 - 10GHz broadband medium power amplifier realized in advanced GaAs PHEMT technology. With on-chip input/output blocking capacitors and DC supply RF choke circuitry, it requires only three bonds for DC bias and RF-connections. It is unconditionally stable and directly cascadable with other stages. The MMA-021015 can be DC and RF tested and screened on-wafer to insure the performance.

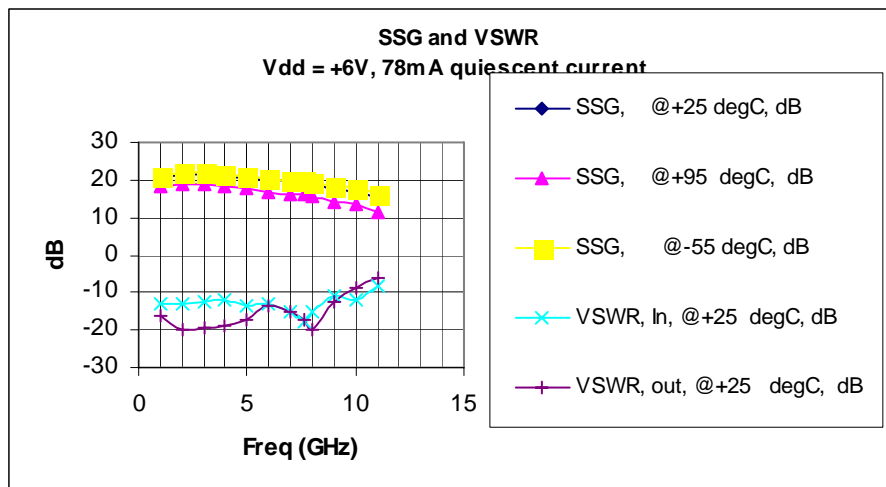
## Electrical Specifications: ( $V_{ds}=6.0V$ , $T_A=25\text{ }^\circ\text{C}$ )

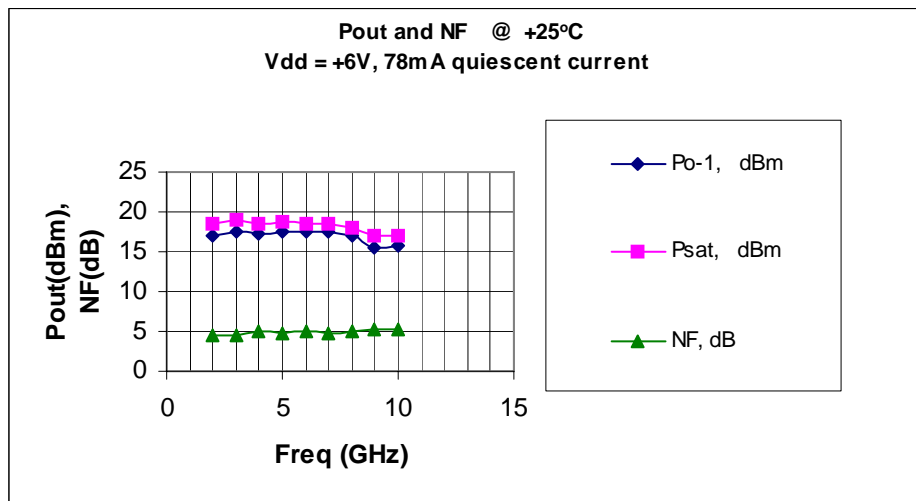
SYMBOL	Units	MIN	TYP	MAX
Frequency	GHz	2.0		10.0
Small Signal Gain	dB		18	
Gain Flatness	+/-dB		2.5	
Input Return Loss	dB		-12	
Output Return Loss	dB		-15	
Output P1dB	dBm		+17	
2 <sup>nd</sup> and 3 <sup>rd</sup> Harmonic (2-5GHz, at Po-1)	dBc		-23	
Reverse Isolation	dB		30	
Noise Figure	dB		4.8	
DC Current, quiescent	mA		-89	
Current at Psat	mA		92	
Thermal Resistance	$^\circ\text{C/W}$		105	

## Absolute Maximum Ratings:

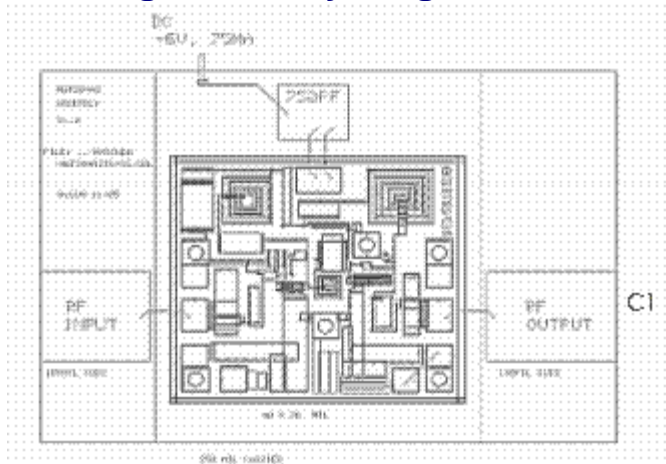
Parameter	Rating
Positive Supply Voltage	+8 V
Current	150 mA
Channel Temperature	+175°C
Storage Temperature	-65 °C to +175°C
Input Power	+15 dBm

## Measured Data:





**Bonding/Assembly Diagram:**



**Notes:**

1. The MMA-021015 chip size is 1.0mm x 0.9mm.
2. Use 0.7-mil dia Au wire. The input/output bond pad sizes are: 3.54 mil x 4.7mil. The VDD DC bond pad size is: 3.54 mil x 6 mil. Two bond wires at VDD are recommended but one bond wire is acceptable.
3. The lower-right corner on-chip bond wire is removed.
4. Only one external component, a 750pF cap, is used. (C1)
5. Current product is in MMIC chip form.
6. If customer is interested in a packaged part, a QFN 3X3 type packaged part is possible. Please contact MwT sales for more information.