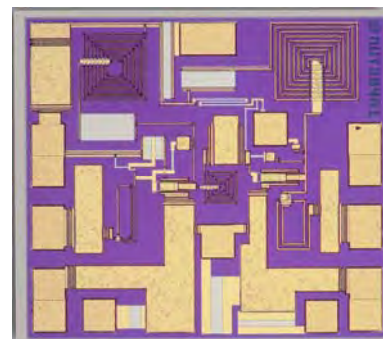


MMA-011015 1 - 10 GHz GaAs MMIC Medium Power Amplifier

Features:

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



Description:

The MMA-011015 is a 1 - 10 GHz 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-011015 can be DC and RF tested and screened on-wafer to insure the performance.

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

SYMBOL	Units	MIN	TYP	MAX
Frequency	GHz	1.0		10.0
Small Signal Gain	dB		15	
Gain Flatness	±dB		2.5	
Input Return Loss	dB		-12	
Output Return Loss	dB		-15	
Output P1 dB	dBm		+16	
2nd and 3rd Harmonic (2 - 5 GHz, at P_{o-1})	dBc		-23	
Reverse Isolation	dB		30	
Noise Figure	dB		4.5	
DC Current, quiescent	mA		75	
Thermal Resistance	$^{\circ}\text{C} / \text{W}$		105	

Absolute Maximum Ratings:

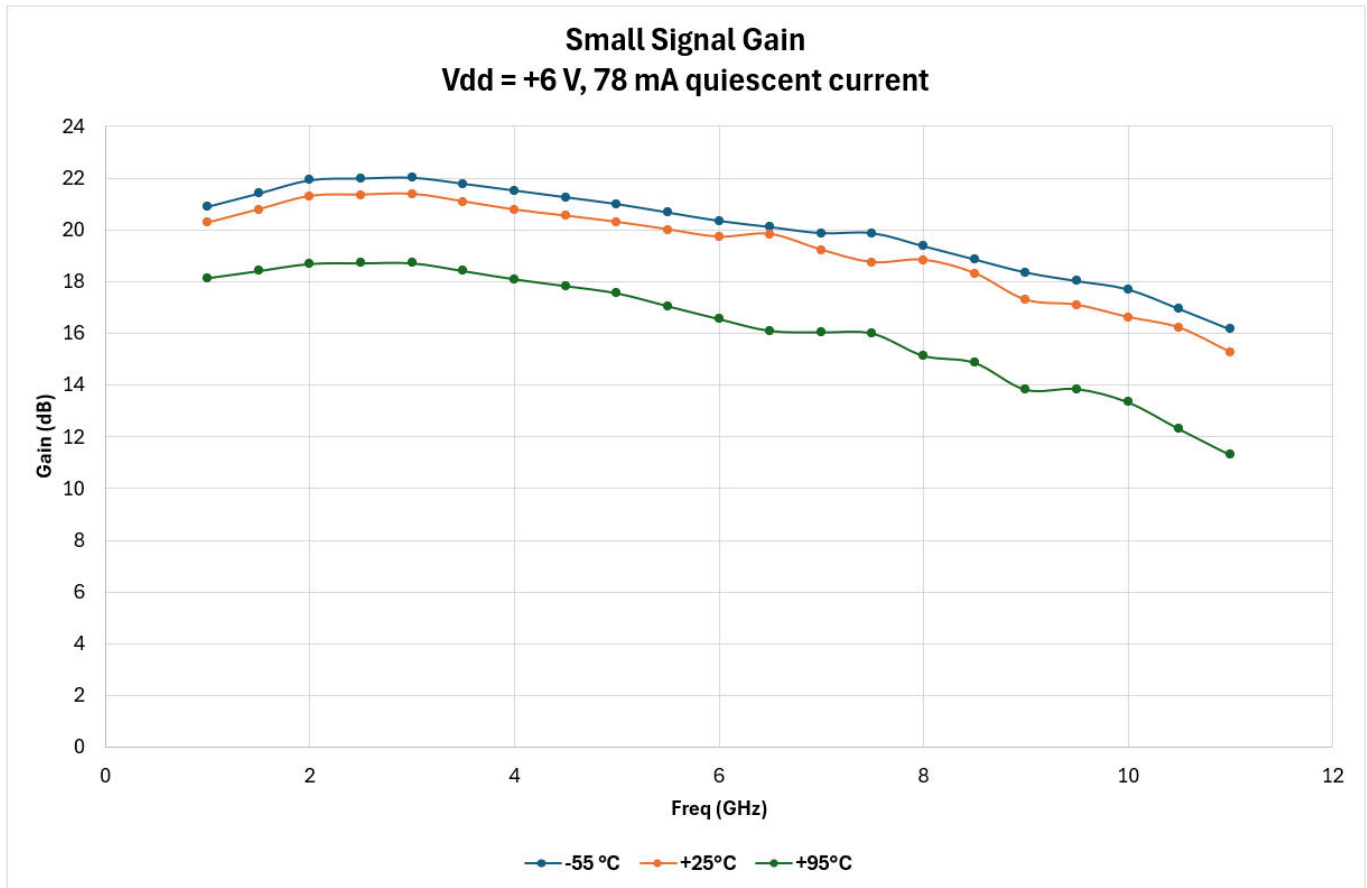
Parameter	Rating
Positive Supply Voltage	+8 V
Current	150 mA
Operating Temperature	-40 °C to +85 °C
Channel Temperature	+175 °C
Storage Temperature	-65 °C to +175 °C
Input Power	15 dBm

ESD Caution

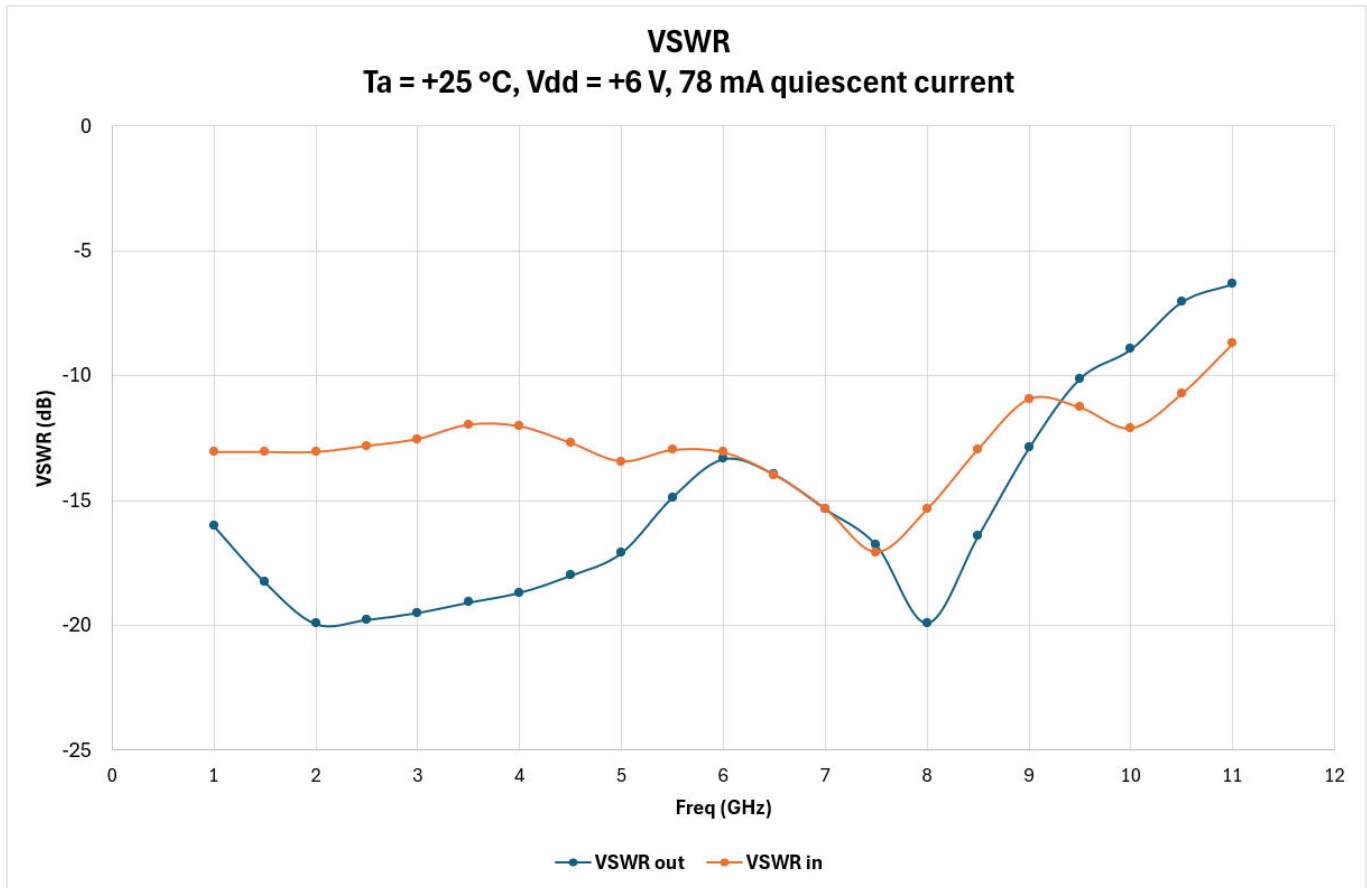


High-performance RF integrated circuits are highly sensitive to electrostatic discharge (ESD) and may contain unprotected inputs and outputs. Handling and assembly should be conducted in an ESD-controlled environment. It is recommended that ESD precautions and protocols are adopted to minimise the risk of electrostatic discharge and protect product integrity.

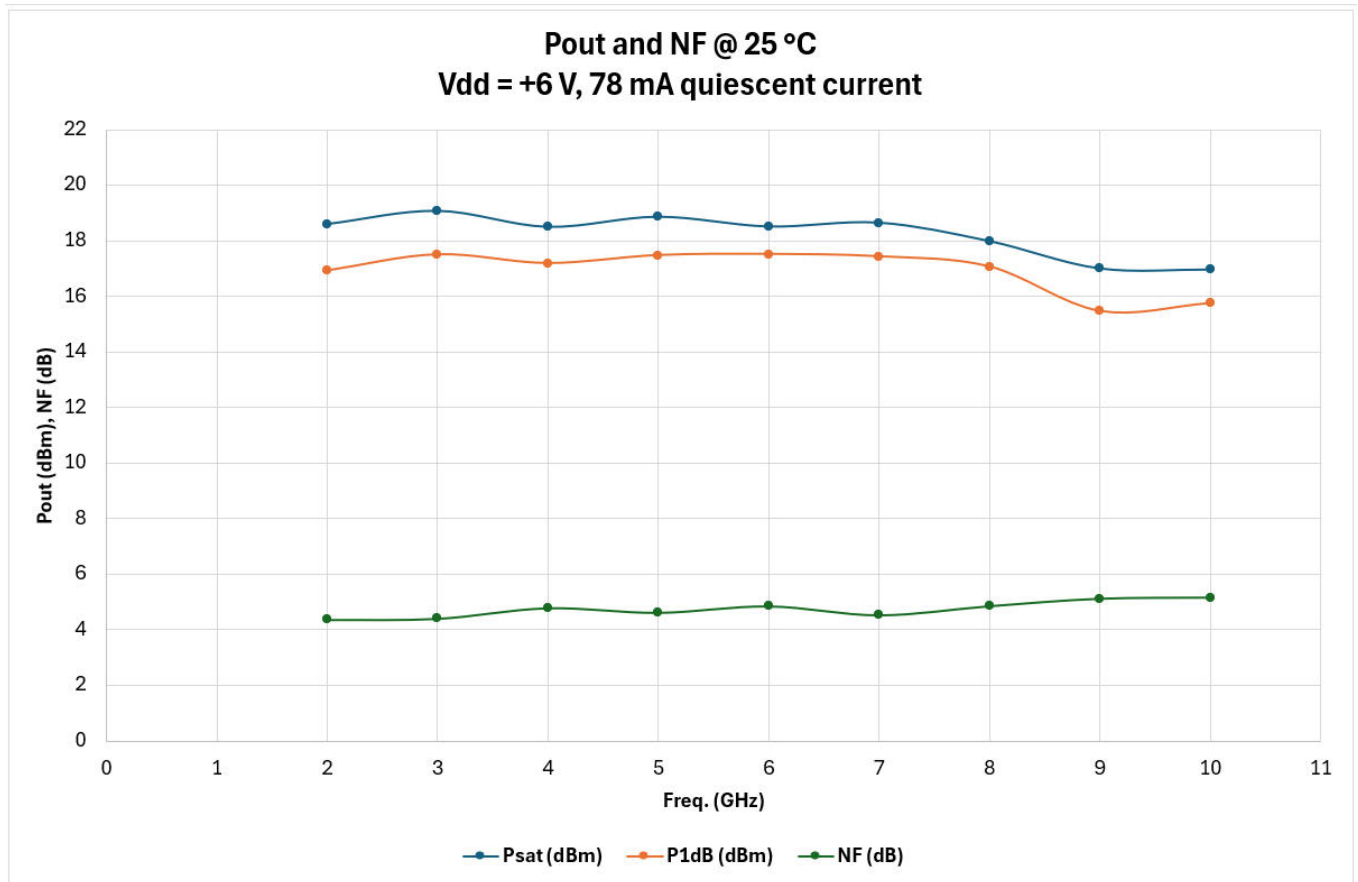
Measured Data



Measured Data (cont)



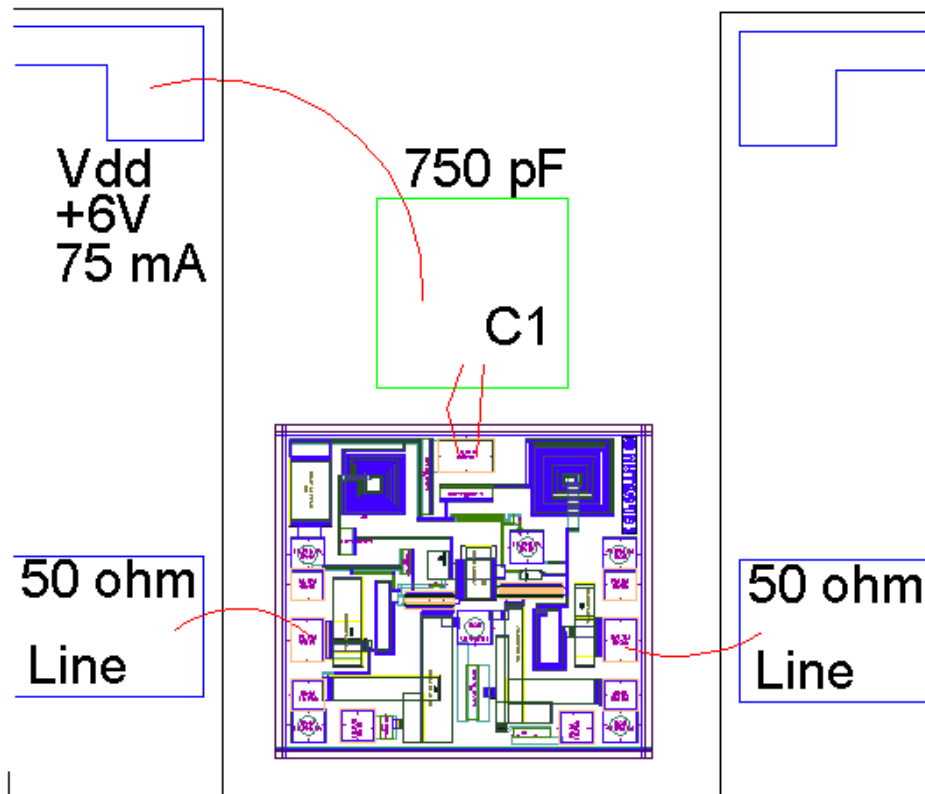
Measured Data (cont)



MMA-011015

1 - 10 GHz GaAs MMIC Medium Power Amp

Bonding/Assembly Diagram:



Notes:

1. The MMA-011015 chip size is 1.0 mm x 0.9 mm.
2. Use 0.7-mil dia Au wire. The input/output bond pad sizes are: 3.54 mil x 4.7 mil. 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 750 pF cap, is used. (C1)
5. Product is in MMIC chip form.

RoHS Compliance



CML Micro certifies, to the best of our knowledge, that its products comply with RoHS directive (2011/65/EU), as amended by Directive (EU) 2015/863.

REACH Compliance



CML Micro certifies, to the best of our knowledge, that its products do not contain any of the banned substances specified in the SVHC list at <https://echa.europa.eu/candidate-list-table>. CML Micro are committed to ensuring the safety of products and the compliance with regulations. Publications will be updated in the event that REACH control is compromised.

Contact Information

For further information please contact your local CML sales representative.

Contact details can be found at www.cmlmicro.com.

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