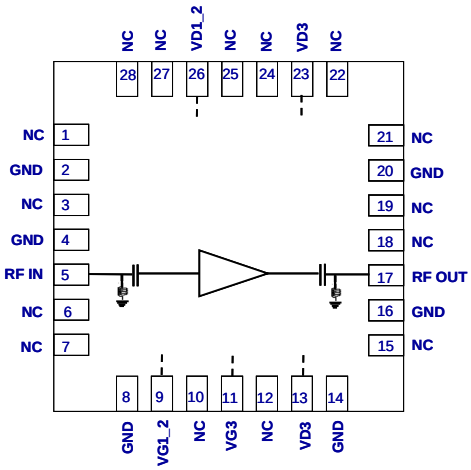
Advanced Information

QFN Packaged 7-16GHz HPA

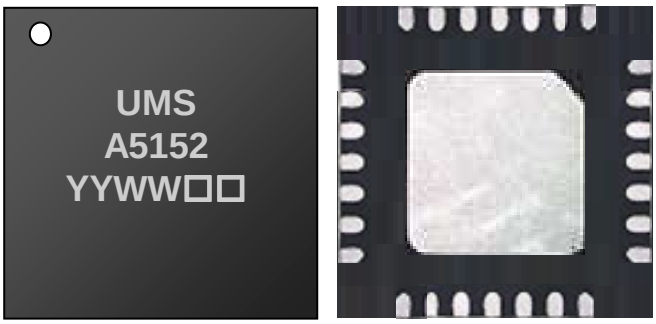
GaAs Monolithic Microwave IC



UMS develops a very high power packaged monolithic 7-16GHz power amplifier featuring up to 29dBm output power at P_{-1dB} gain compression. The high 20dB gain associated with the high linearity of 37dBm make of this circuit a very versatile part for high performance systems. Moreover it is proposed in standard surface mount package and integrates ESD protection. The overall power supply is of 5.0V/700mA.

The circuit is dedicated to telecommunication and also well suited for a wide range of microwave and millimetre wave applications and systems.

It is developed on a robust 0.15µm gate length pHEMT process, and will be available both as a bare die, and in a standard surface mount 28 leads QFN5x5, compliant with the Restriction of Hazardous Substances (RoHS) European Union directive 2002/95/EC.



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Main Characteristics at room temperature

Symbol	Parameter	Min	Typ	Max	Unit
Fop	Operating frequency range	7		16	GHz
G	Small Signal Gain		20		dB
P1dB	Output power @1dB compression		29		dBm
Psat	Saturated output power		30		dBm
OIP3	Output IP3		37		dBm
Rlin	Input Return Loss		-10		dB
Rlout	Output Return Loss		-10		dB
VD	DC drain voltage		5.0		V
Id	Total drain current		700		mA

These values are representative of on-board measurements.
Electrostatic discharge sensitive device observe handling precautions!

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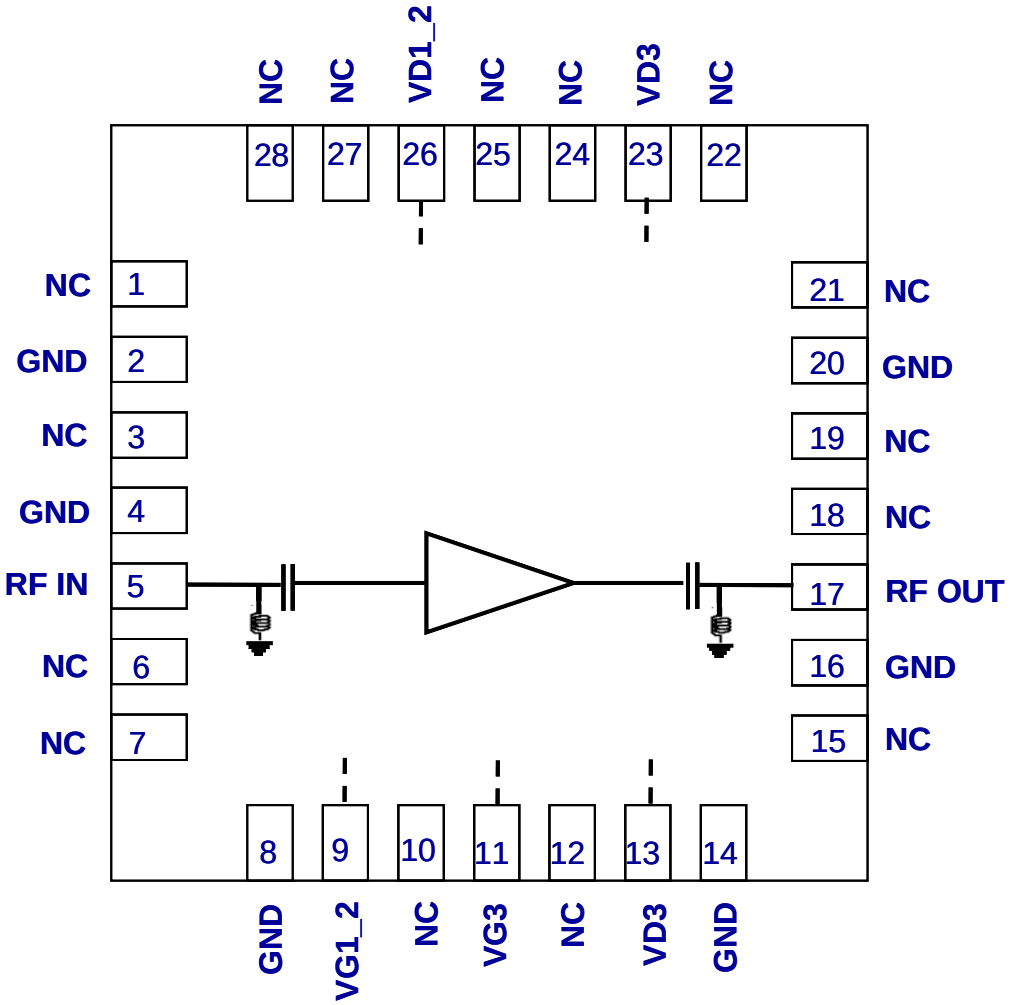
Package outline:



1- Nc	10- Nc	19- Nc	28- Nc
2- GND	11- VG3	20- GND	29- GND Exposed pad
3- Nc	12- Nc	21- Nc	
4- GND	13- VD3	22- Nc	
5- RF IN	14- GND	23- VD3	
6- Nc	15- Nc	24- Nc	
7- Nc	16- GND	25- Nc	
8- GND	17- RF OUT	26- VD1_2	
9- VG1_2	18- Nc	27- Nc	

(1) The package outline drawing included to this document is given for indication.
(2) It is strongly recommended to ground on the PCB board all the pins referenced as GND.

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Recommended package footprint

Refer to the application note AN0017 available at http://www.ums-gaas.com for package foot print recommendations and exact package dimensions.

SMD mounting procedure

For the mounting process standard techniques involving solder paste and a suitable reflow process can be used. For further details, see application note AN0017.

Recommended environmental management

Refer to the application note AN0019 available at http://www.ums-gaas.com for environmental data on UMS package products.

Recommended ESD management

Refer to the application note AN0020 available at http://www.ums-gaas.com for ESD sensitivity and handling recommendations for the UMS package products.

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