

10W 500-3000MHz RF Power Amplifier

PA-0530-40-15

Rev. B

Features

- High CW Power, 10Watts
- Linear WCDMA Power, 2 Watts
- Typical Power Gain of 15dB
- Usable over 500 to 3000MHz
- High Efficiency, Typically 45%
- Portable and Compact
- Built-in Cooling System



Description

Designed for general-purpose applications in the 500 to 3000 MHz range. This amplifier utilizes GaN HEMT device that offers high efficiency, high gain and wide bandwidth capabilities making the amplifier ideal for linear and compressed circuits.

The amplifier is capable of handling up to 10:1 output VSWR @ P_{sat}

Applications

- Driver Amplifier
- AM Modulation
- FM Modulation
- Multi Carrier
- Outdoor
- Lab Testing
- Satellite
- 3G, GSM

Accessories

- Built-in cooling system including heat sink and 0.5W fan
- 60W AC-DC wall plug adapter
- 60cm SMA-SMA RG316DS shielded 50Ω coaxial cable

Typical RF Performance

Parameter	Symbol	Value	Unit
Small-signal Gain	G_0	14.8	dB
Input Return Loss	IRL	7	dB
Output Return Loss	ORL	11	dB
Power at 1dB point	P_{1dB}	39	dBm
Saturated Power	P_{sat}	40	dBm

Absolute Maximum Ratings

Rating	Symbol	Value	Unit
Supply Voltage	V_{sup}	28	V
Supply Current	I_{sup}	1000	mA
RF Input Power	$P_{in,max}$	30	dBm
Operating Case Temperature	T_C	60	°C

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Characteristics

RF Characteristics (at 28VDC, 25°C, CW 50Ω System)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Frequency	BW	500	-	3200	MHz
Small-signal Gain	G ₀	13.3	14.8	16.3	dB
Input Return Loss	IRL	4	7	10	dB
Output Return Loss	ORL	7	11	16	dB
1dB-Compression Power	P _{1dB}	-	39	-	dBm
Saturated Power	P _{sat}	-	40	-	dBm
Operating Voltage	V _{sup}	-	28	-	V
Operating Current	I _{sup}	-	-	1000	mA
Quiescent Current (RF OFF)	I ₀	-	620	-	mA
2 nd Harmonic @ 27dBm P _{inr} , 500MHz	P _{H2}	-	-23.5	-	dBc
2 nd Harmonic @ 27dBm P _{inr} , 1000MHz		-	-17.3	-	
2 nd Harmonic @ 27dBm P _{inr} , 1500MHz		-	-19.6	-	
2 nd Harmonic @ 27dBm P _{inr} , 2000MHz		-	-30.3	-	
3 rd Harmonic @ 27dBm P _{inr} , 500MHz	P _{H3}	-	-14.4	-	dBc
3 rd Harmonic @ 27dBm P _{inr} , 1000MHz		-	-19.2	-	
3 rd Harmonic @ 27dBm P _{inr} , 1500MHz		-	-24.6	-	
3 rd Harmonic @ 27dBm P _{inr} , 2000MHz		-	-23.1	-	

Protection

Output Mismatch Stress	VSWR _{out}	-	-	10:1	-
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Environmental Characteristics

Operating Case Temperature	T _C	-	45	-	°C
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Mechanical Characteristics

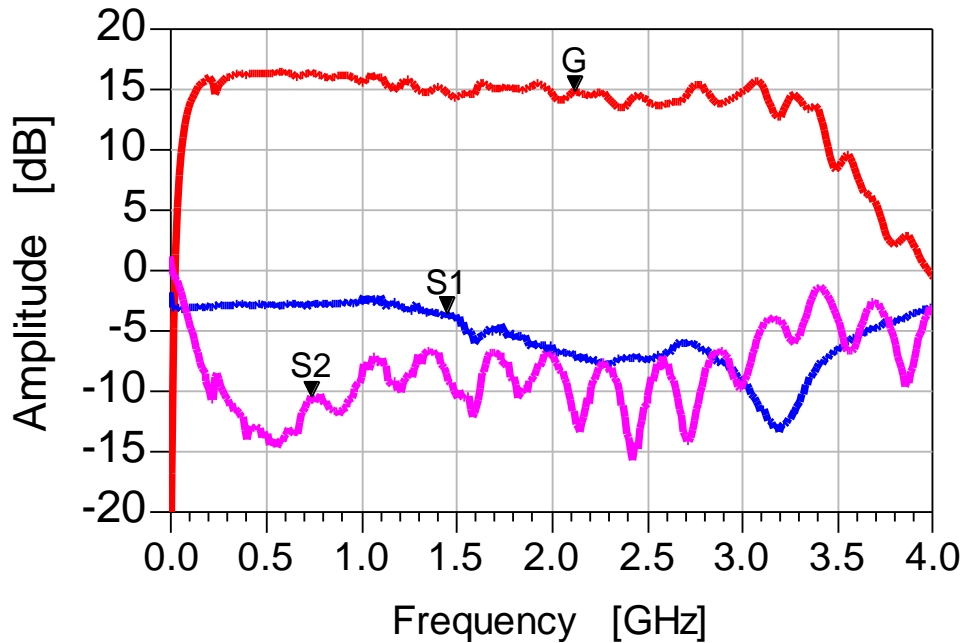
Parameter	Description	Limit	Unit
Dimensions (LxWxH)	175x90x57	Maximum	mm
RF Connectors IN/OUT	SMA/SMA	-	-
DC Power Connector	Barrel Jack (2.1mm-5.5mm)	-	-
Weight	900	Typical	gm

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Typical Gain & Return Loss Performance (28VDC)



CW Broadband Output Power (28VDC)

