

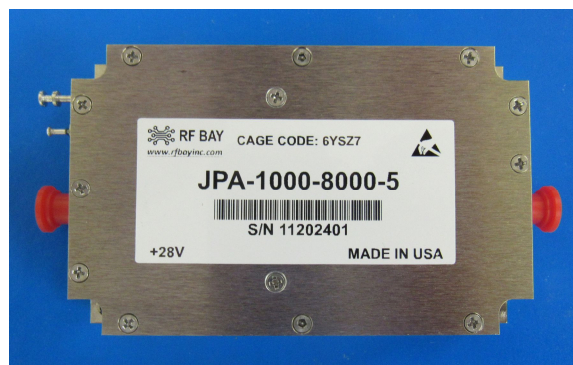
## JPA Series

## 1-8GHz 5W RF Power Amplifier

### Features

- Frequency Range: 1-8GHz
- Small Signal Gain: 40dB
- $P_{SAT}$ : +37dBm (5W)
- DC Power: +28V @ 1100mA
- DC Power Reverse Protected
- RF Connector: SMA Female
- GaN RF Power Amplifier
- Class AB Power Amplifier

### Picture



### Electrical Specifications @+25°C, $Z_{in}=Z_{out}=50 \Omega$ , $V_{supply} = +28VDC$

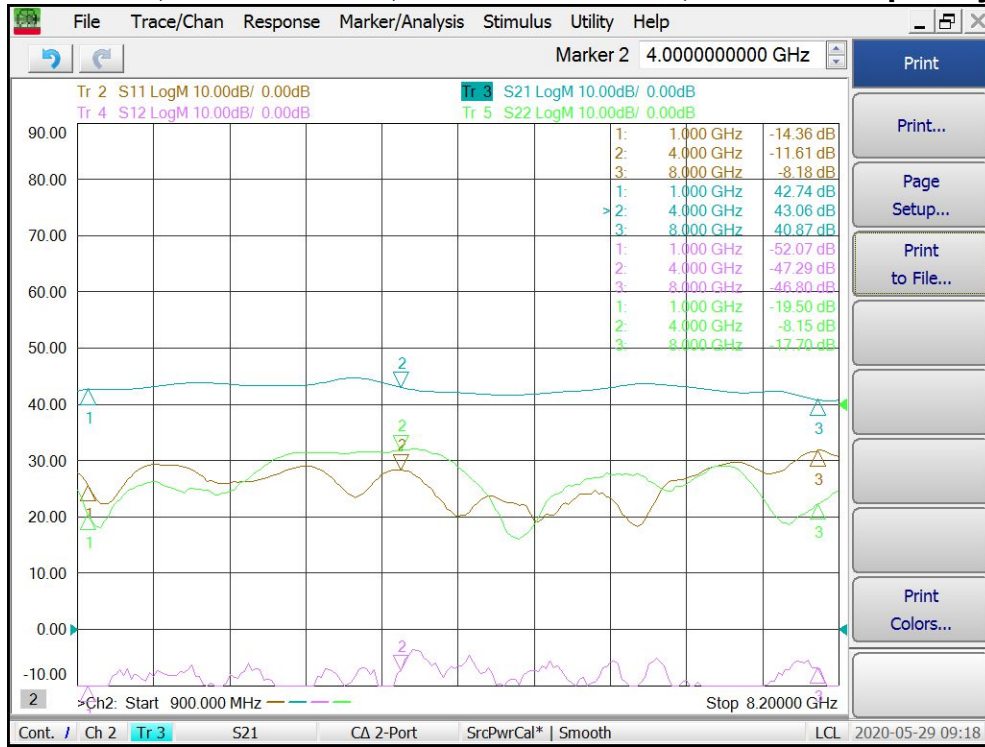
Parameter	Unit	Minimum	Typical	Maximum
Frequency Range	GHz	1		8
Small Signal Gain ( $S_{21}$ ) ( $P_{IN} = -45dBm$ )	f = 1GHz	dB	40	42
	f = 4GHz	dB	40	42
	f = 8GHz	dB	39	41
Gain Flatness	dB		$\pm 1.0$	$\pm 2.0$
Output Power $P_{3dB}$	f = 1GHz	dBm		+39.0
	f = 4GHz	dBm		+38.5
	f = 8GHz	dBm		+36.5
Output Power $P_{SAT}$	f = 1-8GHz <sup>Note</sup>	dBm	+37	
Output IP3	f = 4GHz	dBm	+44	
Efficiency $P_{IN} = 0dBm, f = 4GHz$	%		25	
Noise Figure	dB		4.0	5.0
Reverse Isolation ( $S_{12}$ )	dB	-40	-45	
VSWR-Input ( $S_{11}$ )	f = 4GHz	ratio:1	1.8:1	2.2:1
DC Supply Voltage	V	24	28	32
DC Supply Current	No RF Input	mA		650
	$P_{OUT} = +37dBm$	mA		1100
				800
				1500

Note: Output Power  $P_{SAT}$  can be achieved to 10W range between 1 to 4GHz.

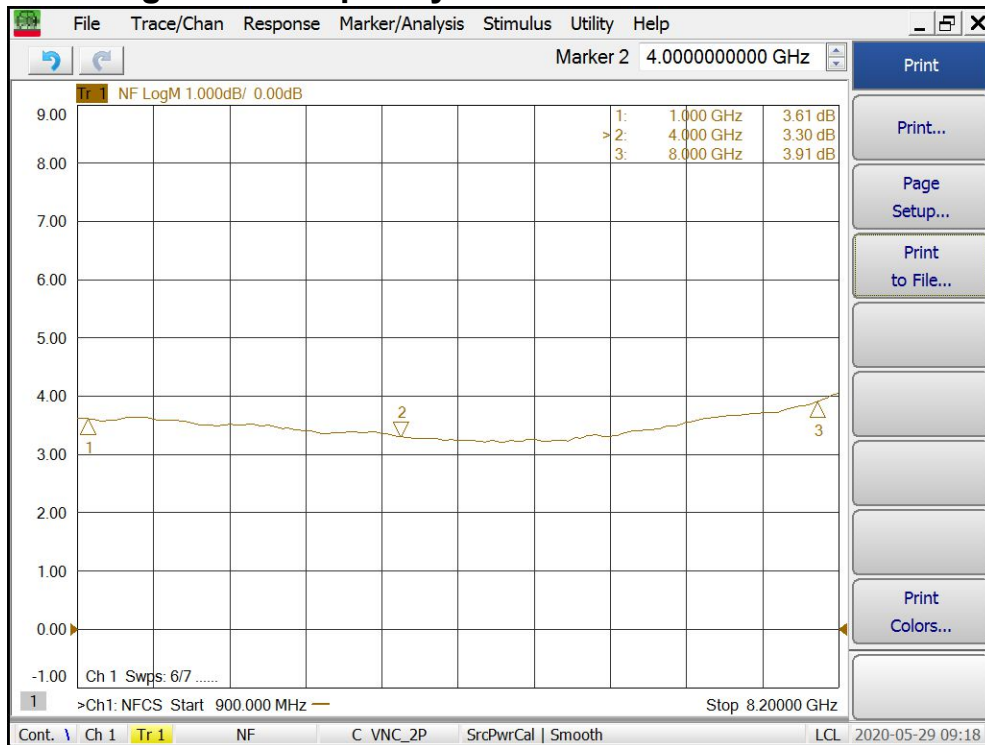
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**Gain S21, Isolation S12, Return Loss S11, S22 vs Frequency**



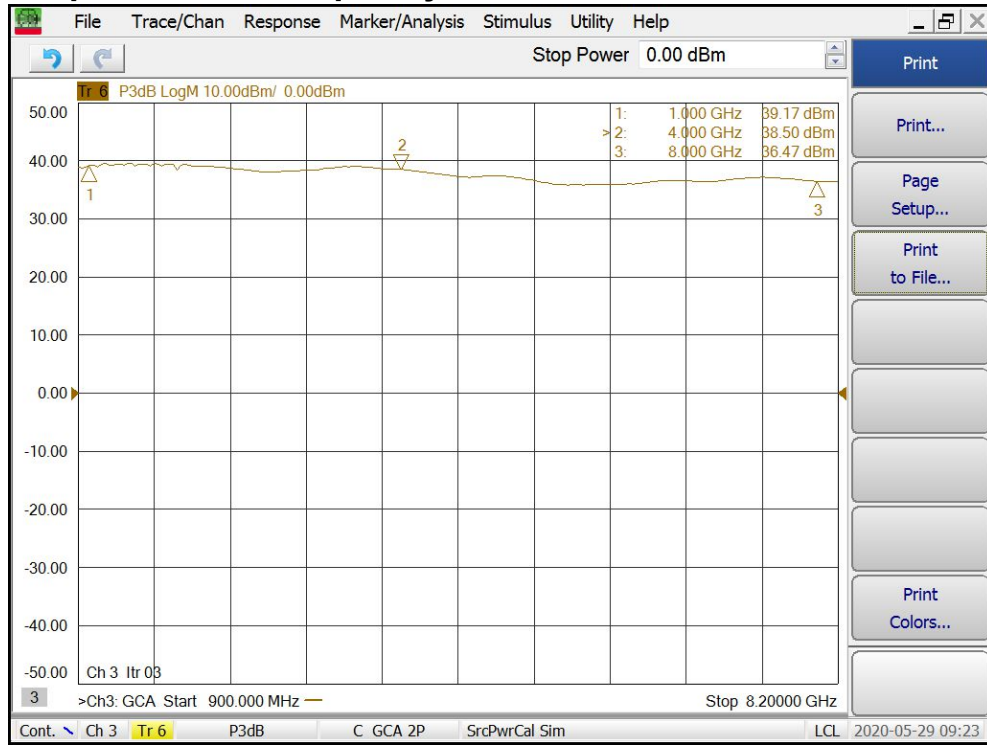
**Noise Figure vs Frequency**



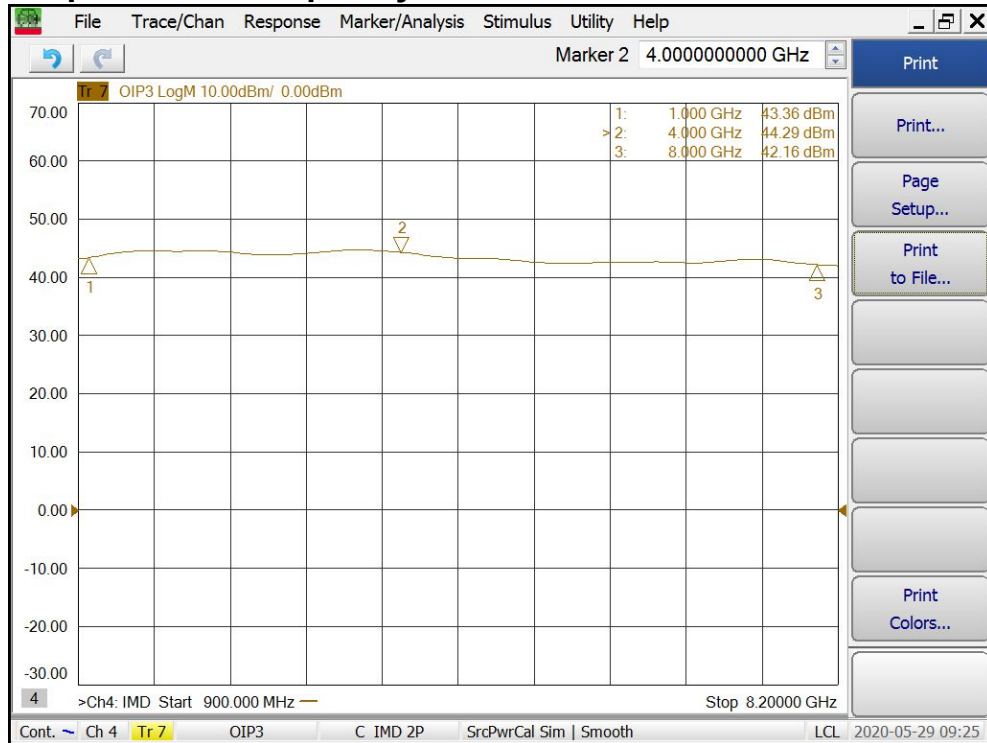
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**Output Pout vs Frequency**



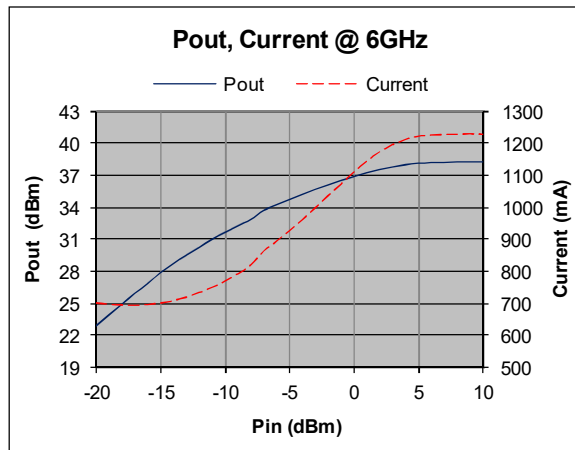
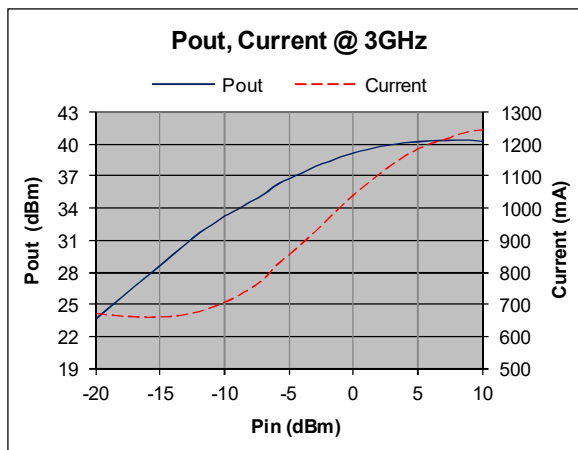
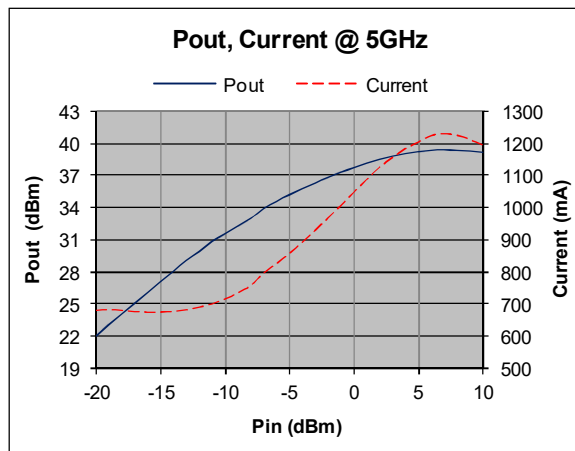
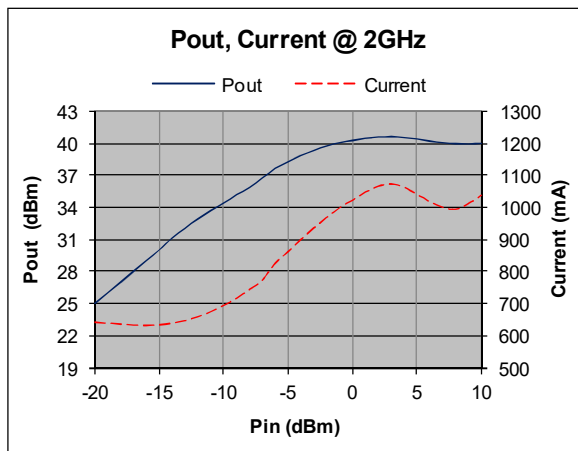
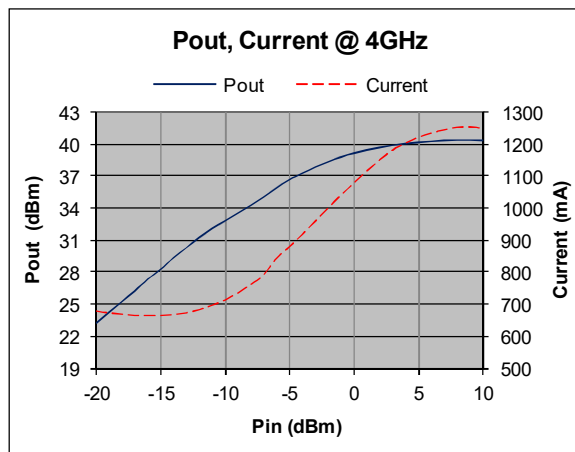
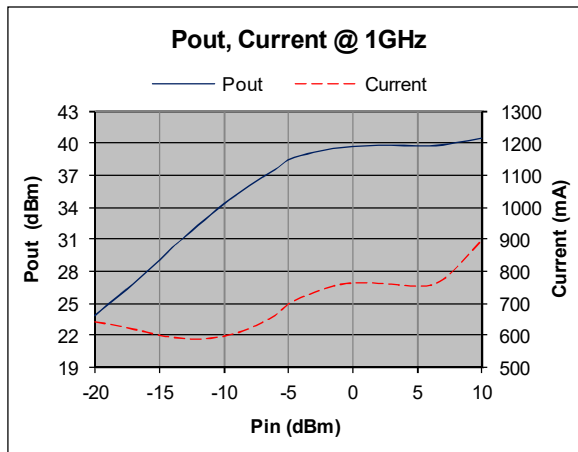
**Output IP3 vs Frequency**



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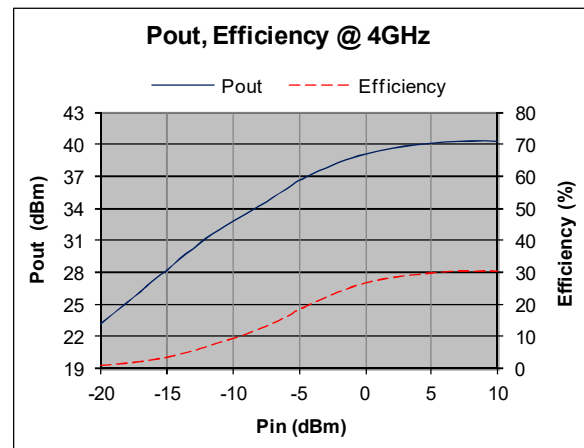
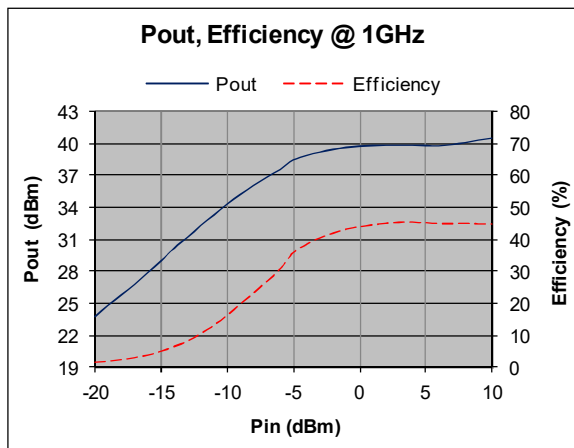
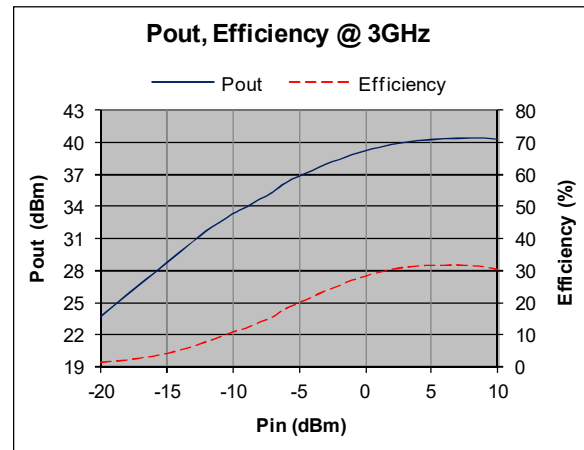
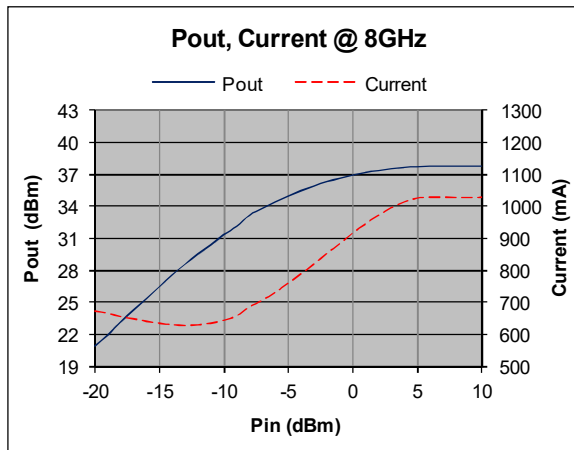
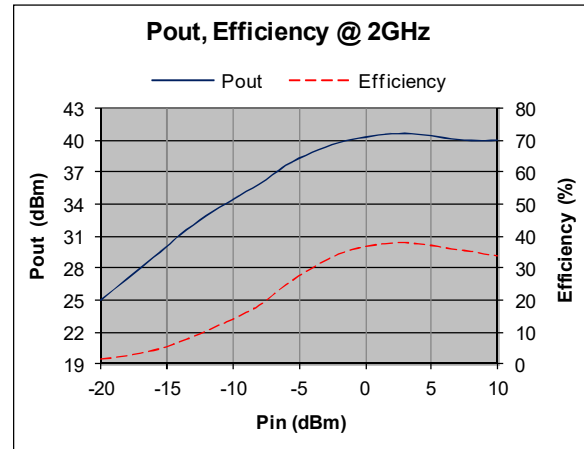
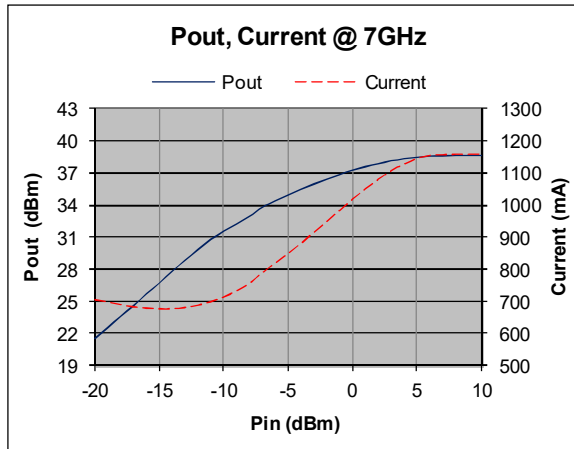
**Typical Performance @ +25°C**



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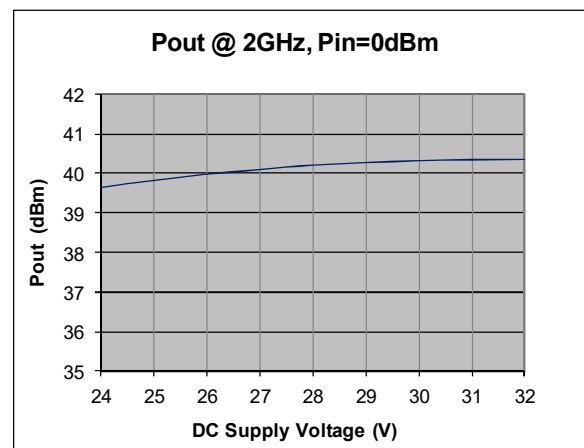
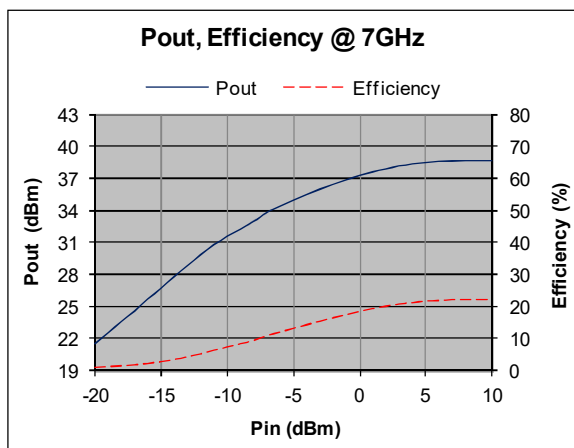
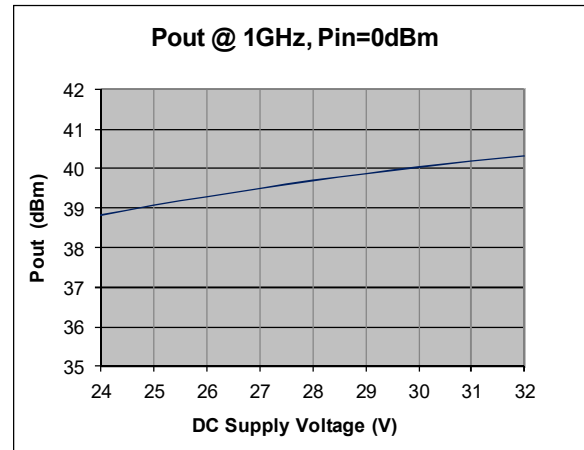
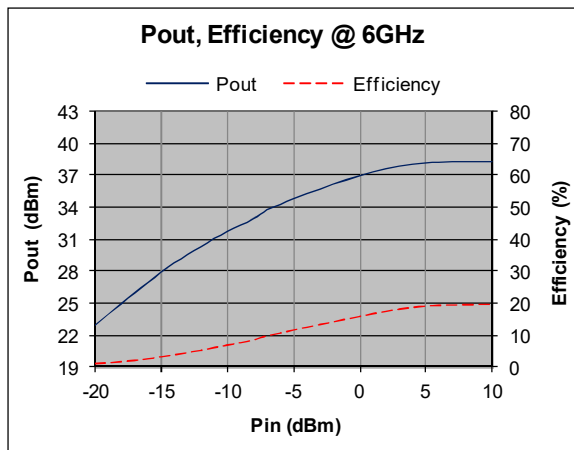
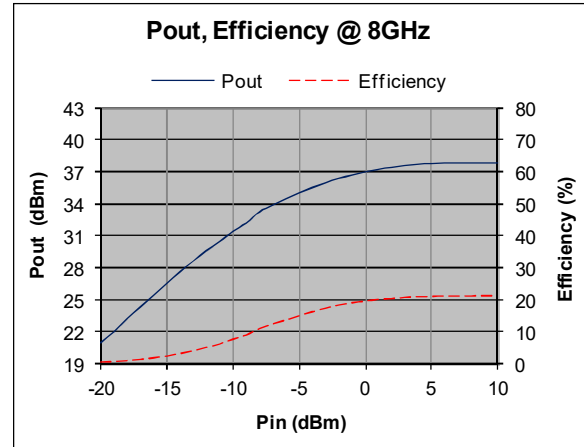
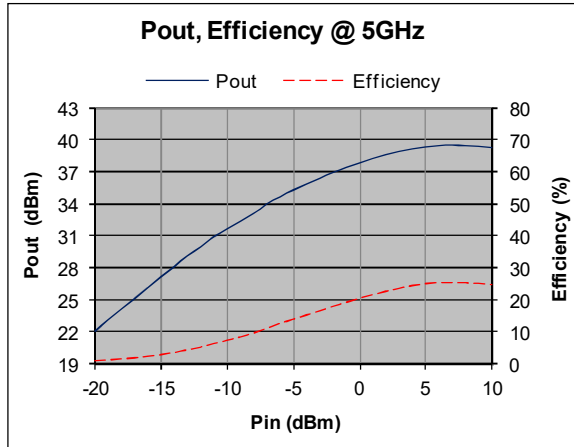
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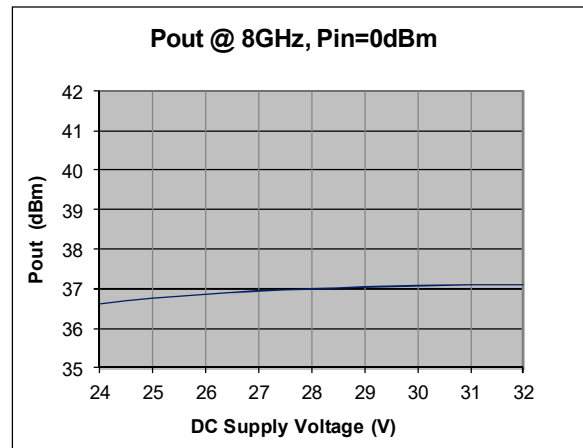
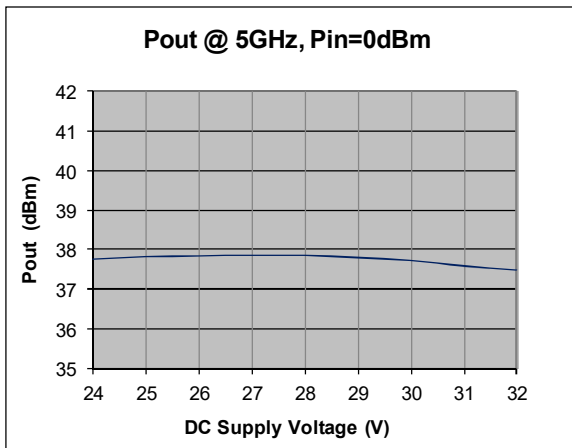
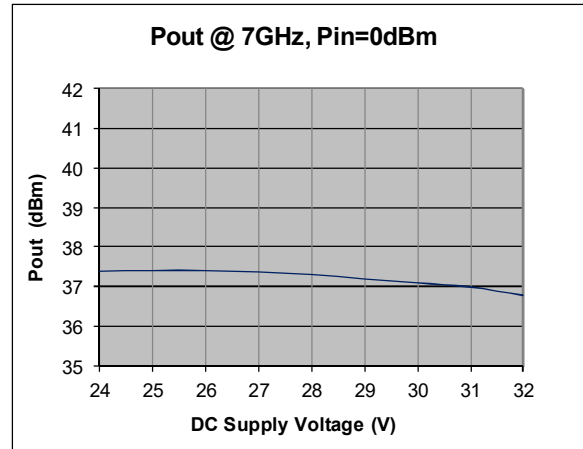
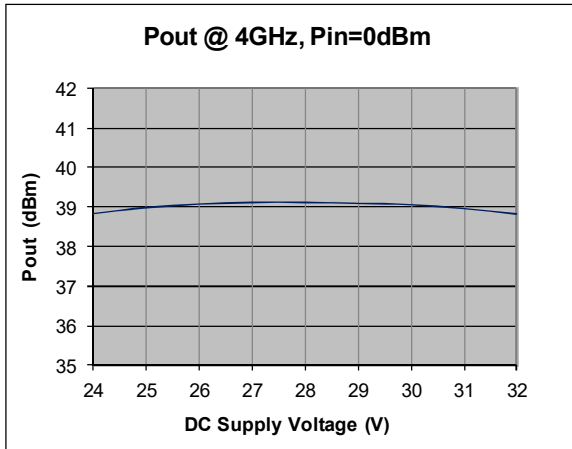
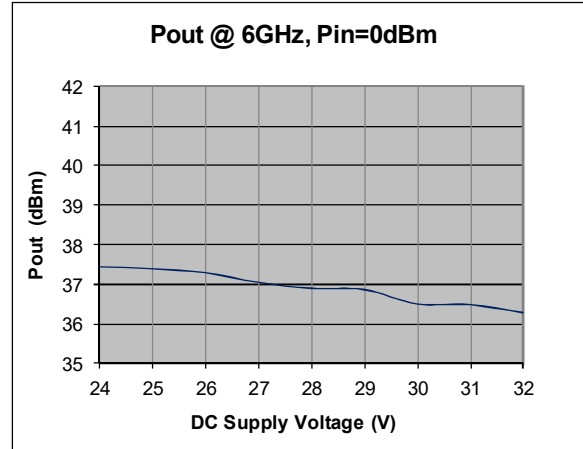
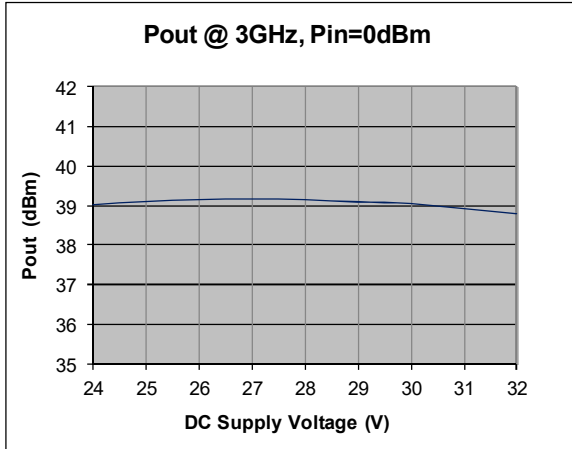
**Typical Performance @ +25°C**



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**Typical Performance @ +25°C**



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**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Supply Voltage	+33V
RF Input Power	+15dBm
Operating Temperature	-20 °C to +65 °C
Storage Temperature	-40 °C to +100 °C

**ESD Sensitive Material**



**Warning and Caution:**

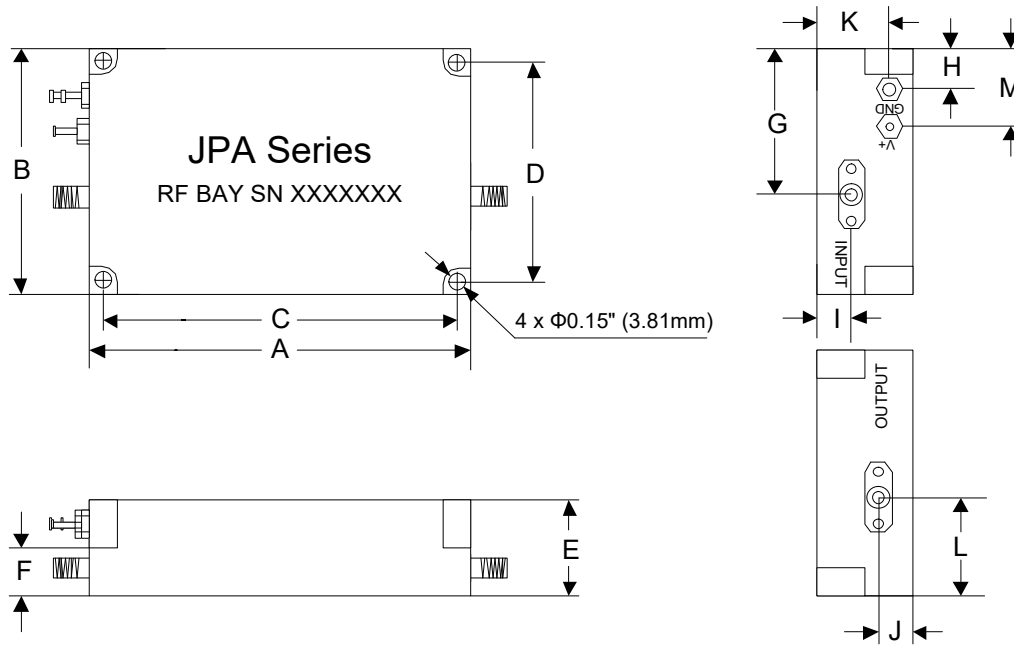
- 1) Adequate heatsink must be used. Cooling Fan highly recommended. Amplifier operational baseplate temperature must be within datasheet operating temperature range.**
- 2) Load must be connected to amplifier output at all time if DC power is ON.**
- 3) If power amplifier connected to an antenna for signal transmission, it is strongly recommended to use a high power isolator or fixed attenuator between amplifier output and antenna input.**



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**Outline**



Mounting screws recommended to use hex socket head cap #6x3/4"

	A	B	C	D	E	F	G	H	I
Inch	4.00	2.50	3.70	2.20	1.05	0.54	1.40	0.30	0.30
mm	101.60	63.50	93.98	55.88	26.67	13.72	35.56	23.37	7.62
	J	K	L	M					
Inch	0.30	0.75	1.10	0.70					
mm	7.62	19.05	27.94	17.78					