

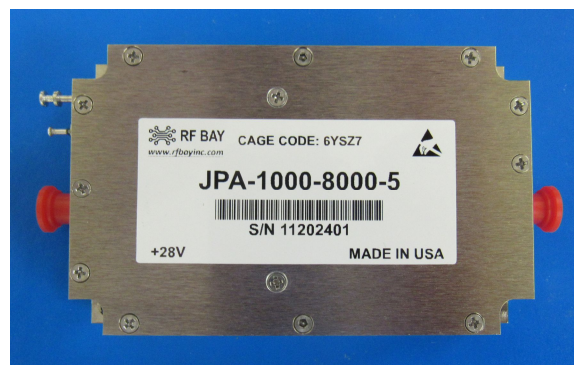
## JPA Series

## 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, $Z_{in}=Z_{out}=50\ \Omega$ , $V_{supply} = +28VDC$

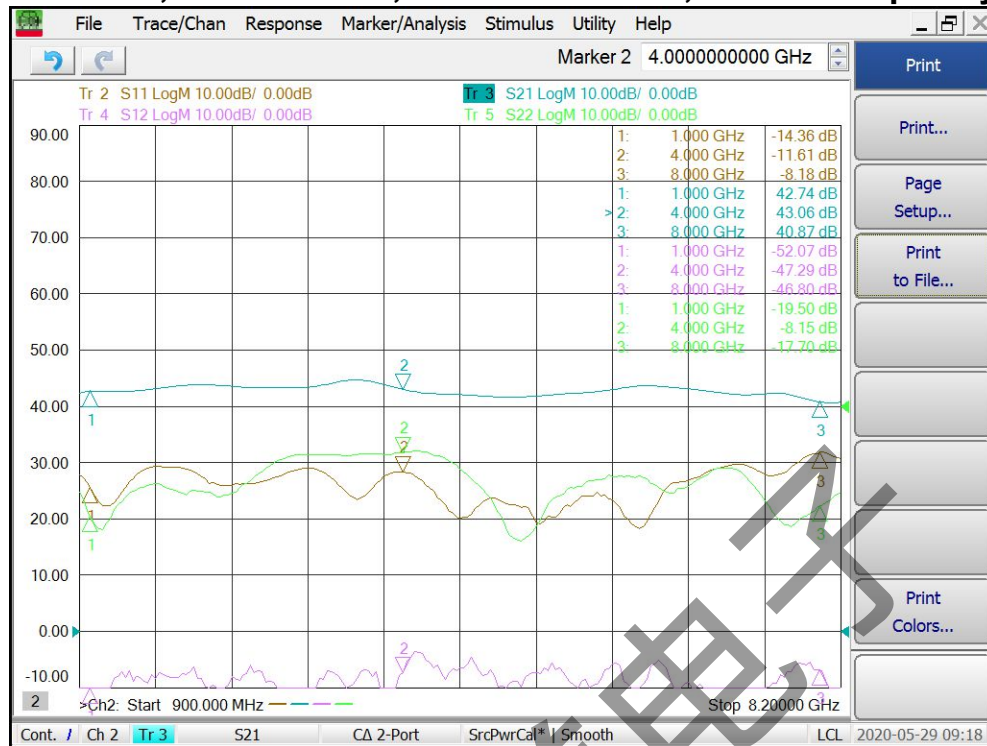
| Parameter                                               | Unit                         | Minimum | Typical   | Maximum   |
|---------------------------------------------------------|------------------------------|---------|-----------|-----------|
| Frequency Range                                         | GHz                          | 1       |           | 8         |
| Small Signal Gain ( $S_{21}$ )<br>( $P_{IN} = -45dBm$ ) | $f = 1GHz$                   | 40      | 42        |           |
|                                                         | $f = 4GHz$                   | 40      | 42        |           |
|                                                         | $f = 8GHz$                   | 39      | 41        |           |
| Gain Flatness                                           | dB                           |         | $\pm 1.0$ | $\pm 2.0$ |
| Output Power $P_{3dB}$                                  | $f = 1GHz$                   |         | +39.0     |           |
|                                                         | $f = 4GHz$                   |         | +38.5     |           |
|                                                         | $f = 8GHz$                   |         | +36.5     |           |
| Output Power $P_{SAT}$                                  | $f = 1-8GHz$ <sup>Note</sup> | +37     |           |           |
| Output IP3                                              | $f = 4GHz$                   |         | +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       | 800       |
|                                                         | $P_{OUT} = +37dBm$           | mA      | 1100      | 1500      |

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

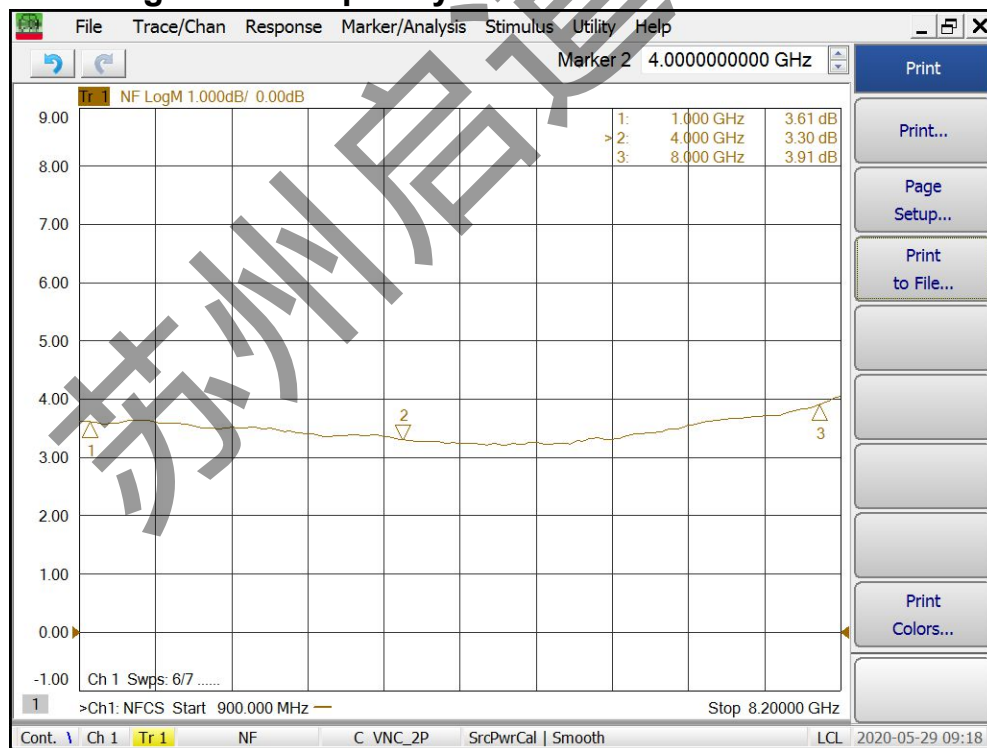
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### Gain S21, Isolation S12, Return Loss S11, S22 vs Frequency



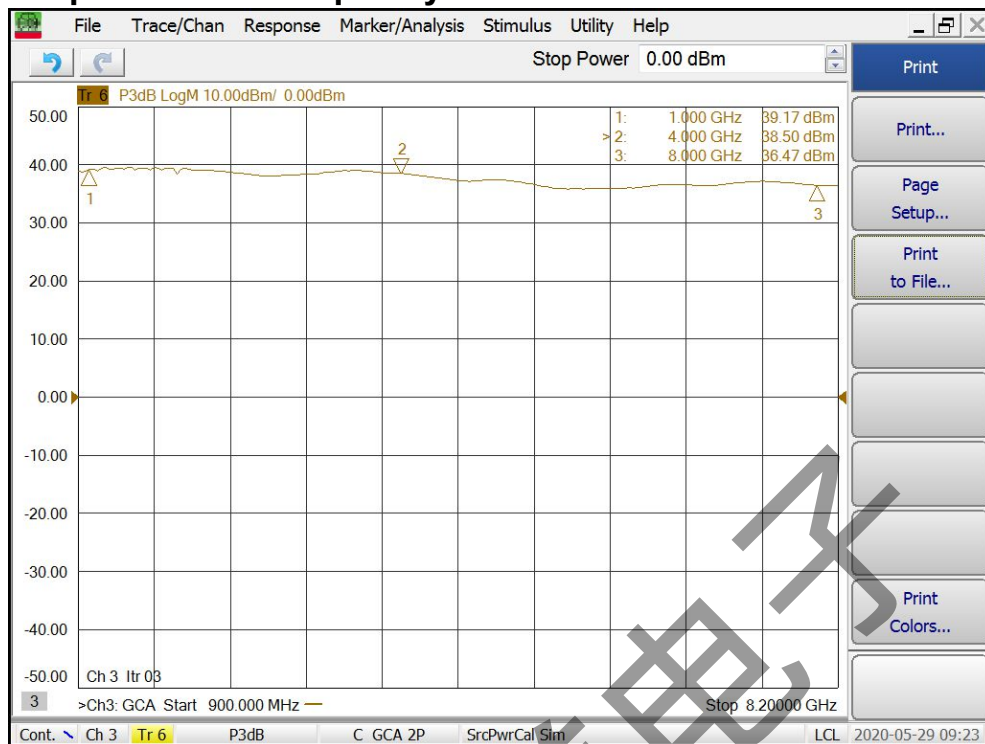
### Noise Figure vs Frequency



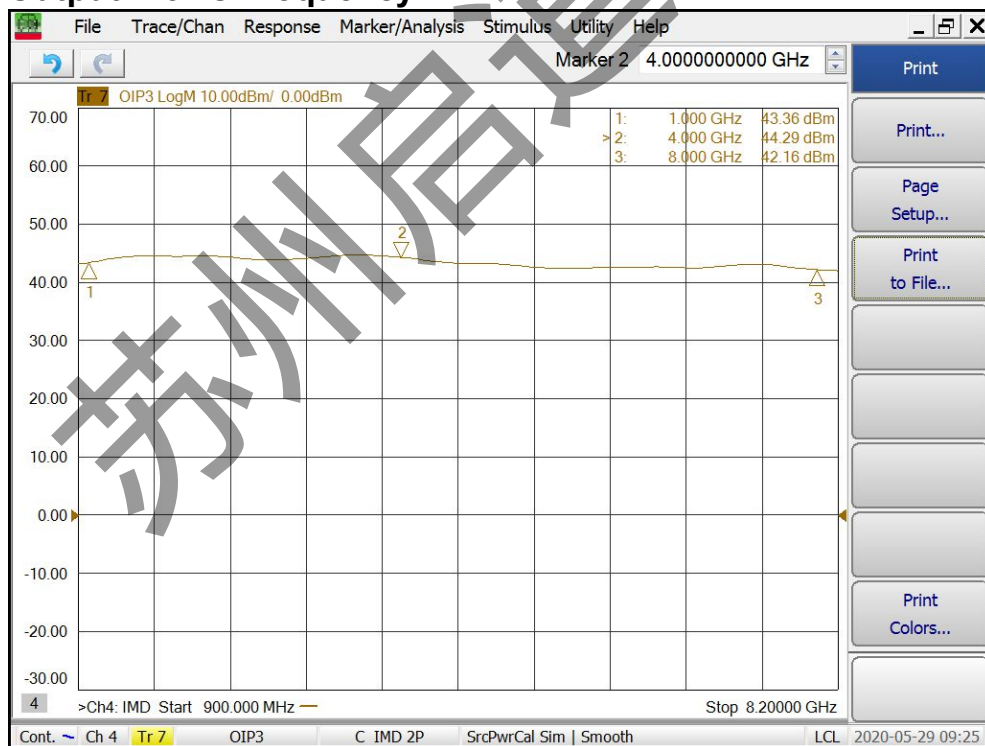
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### Output Pout vs Frequency



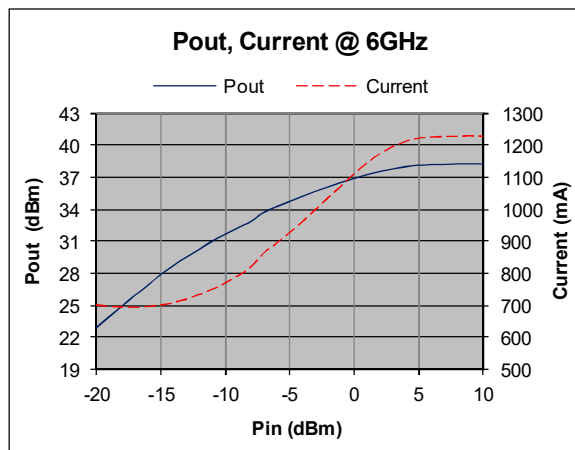
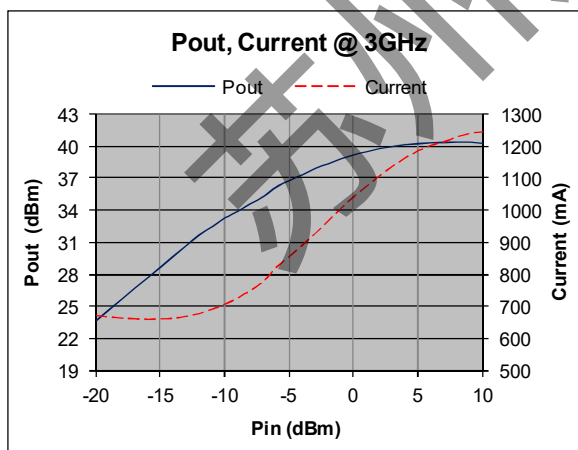
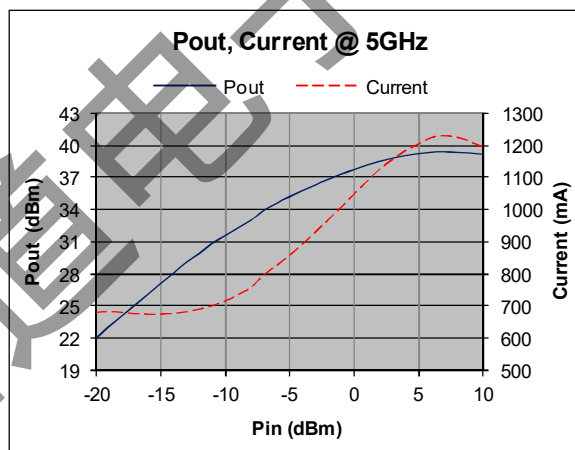
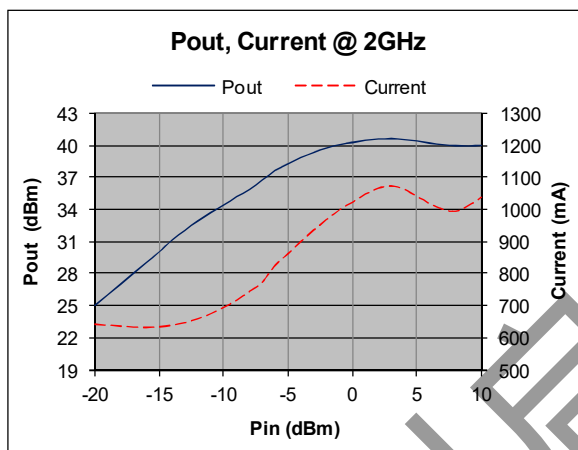
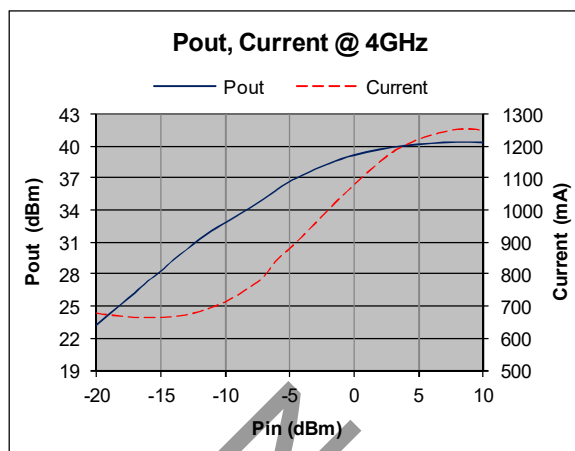
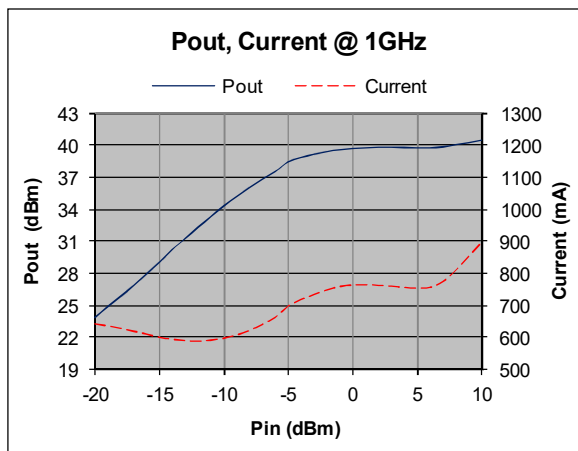
### Output IP3 vs Frequency



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## 1-8GHz 5W RF Power Amplifier

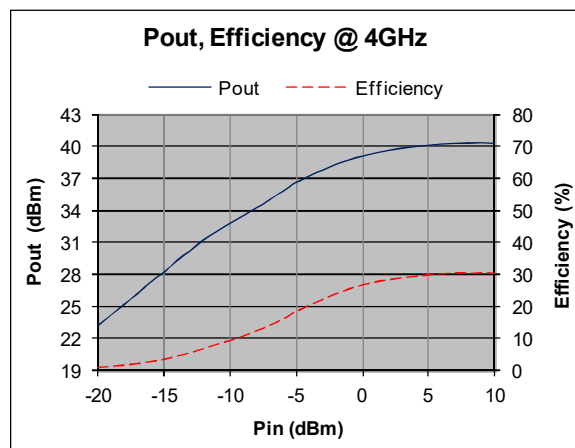
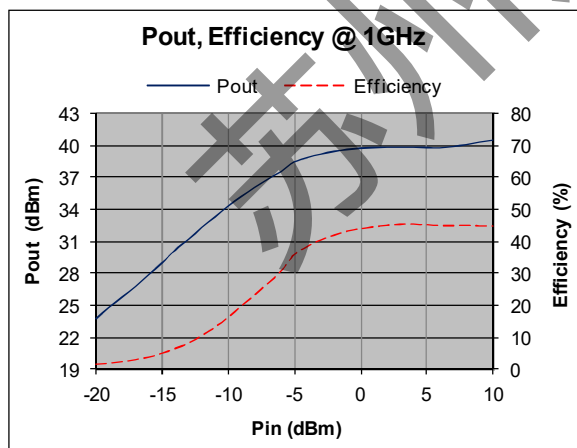
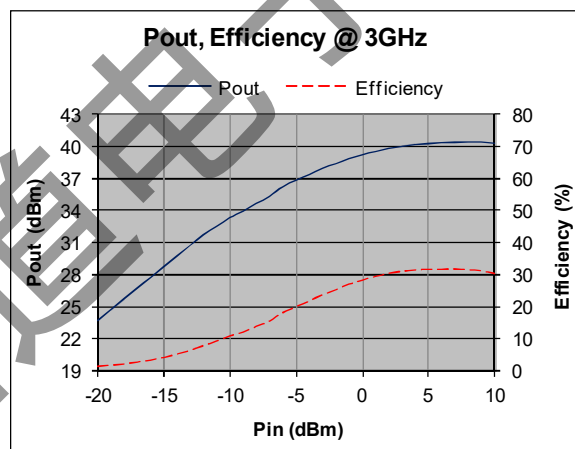
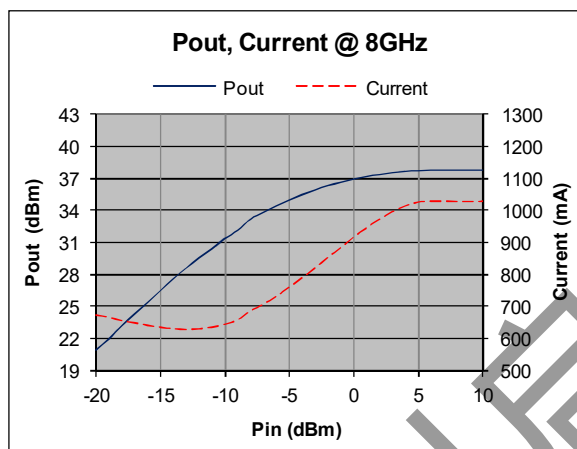
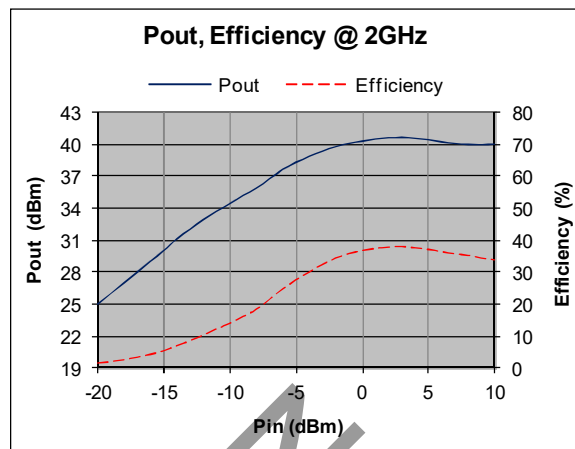
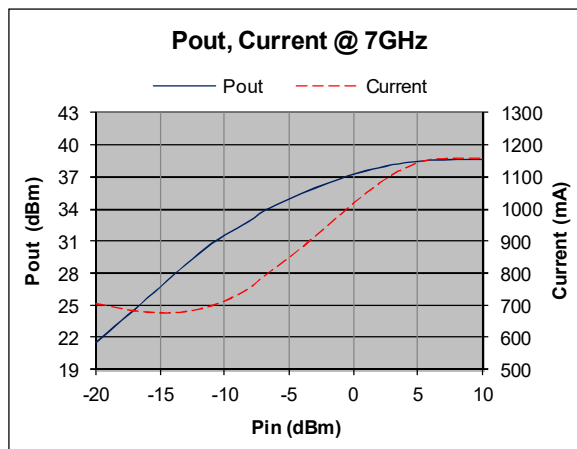
### Typical Performance @ +25°C



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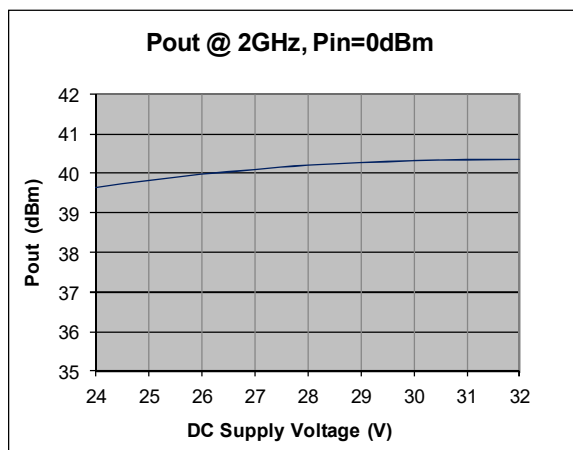
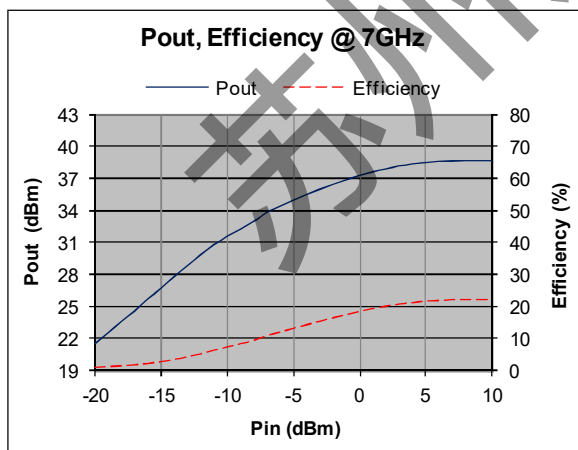
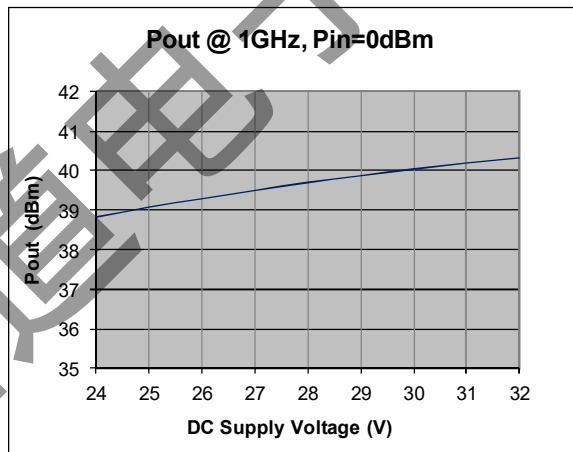
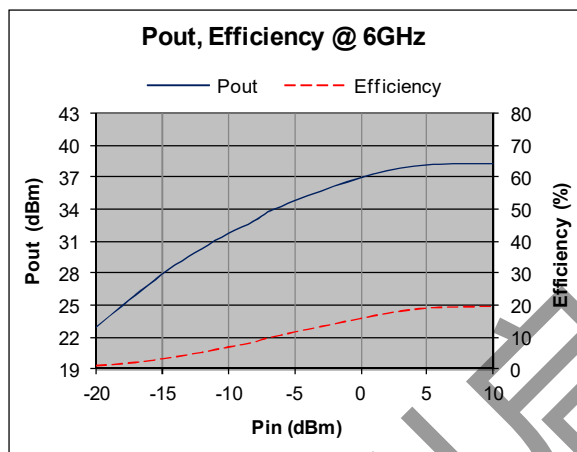
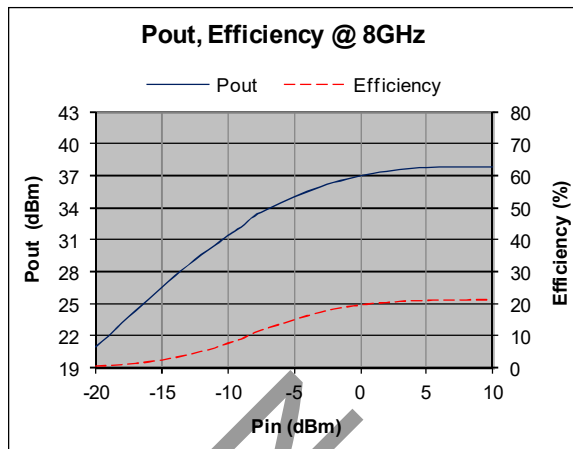
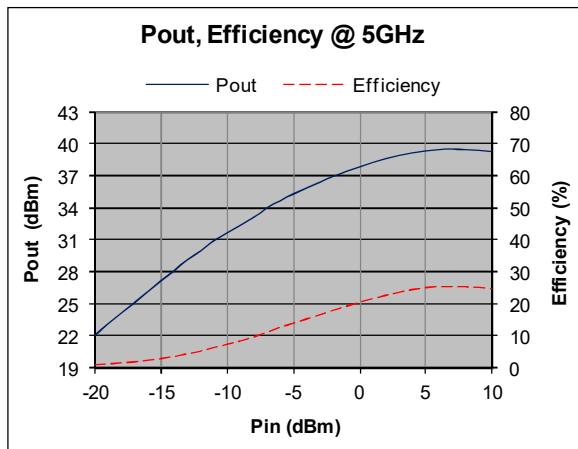
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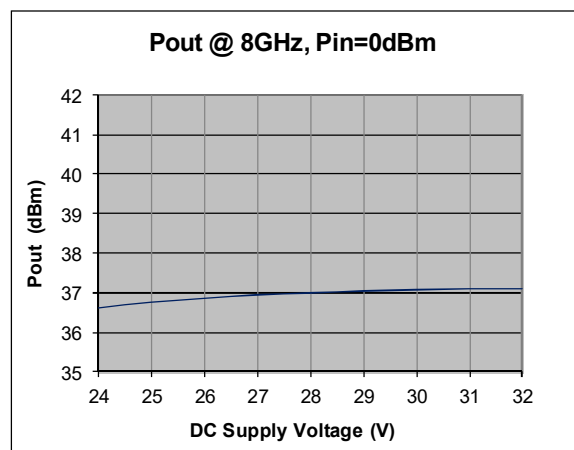
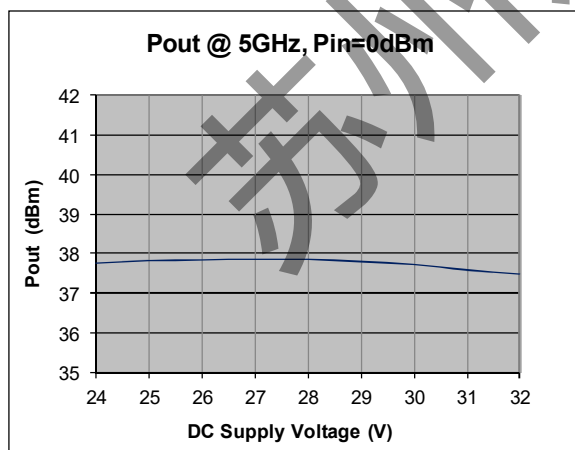
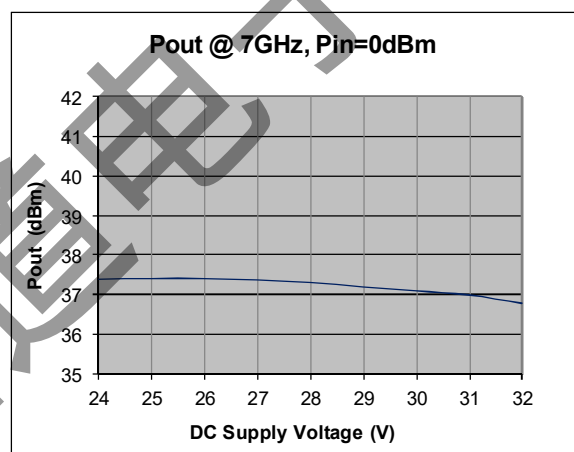
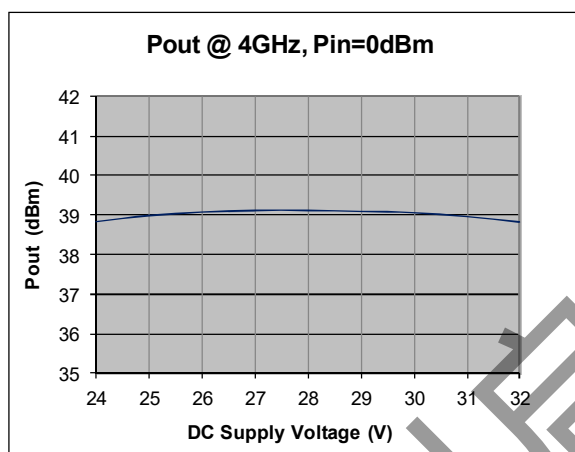
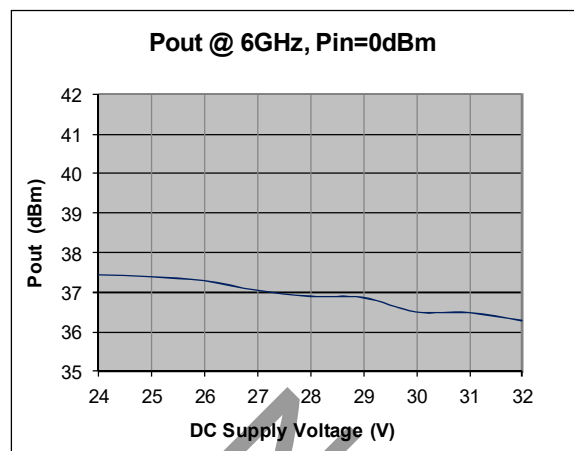
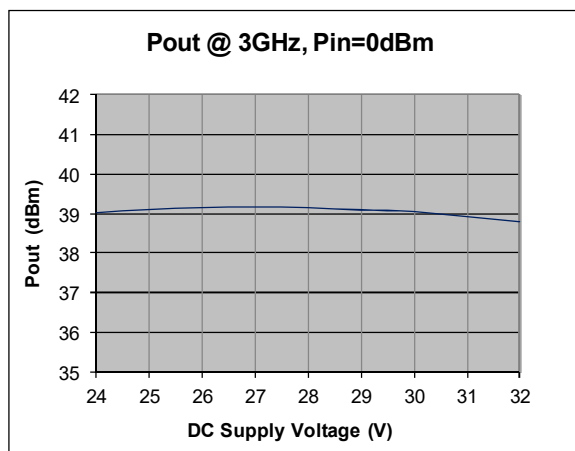
### Typical Performance @ +25°C



## JPA Series

## 1-8GHz 5W RF Power Amplifier

### Typical Performance @ +25°C



**JPA Series****1-8GHz 5W RF Power Amplifier****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 |

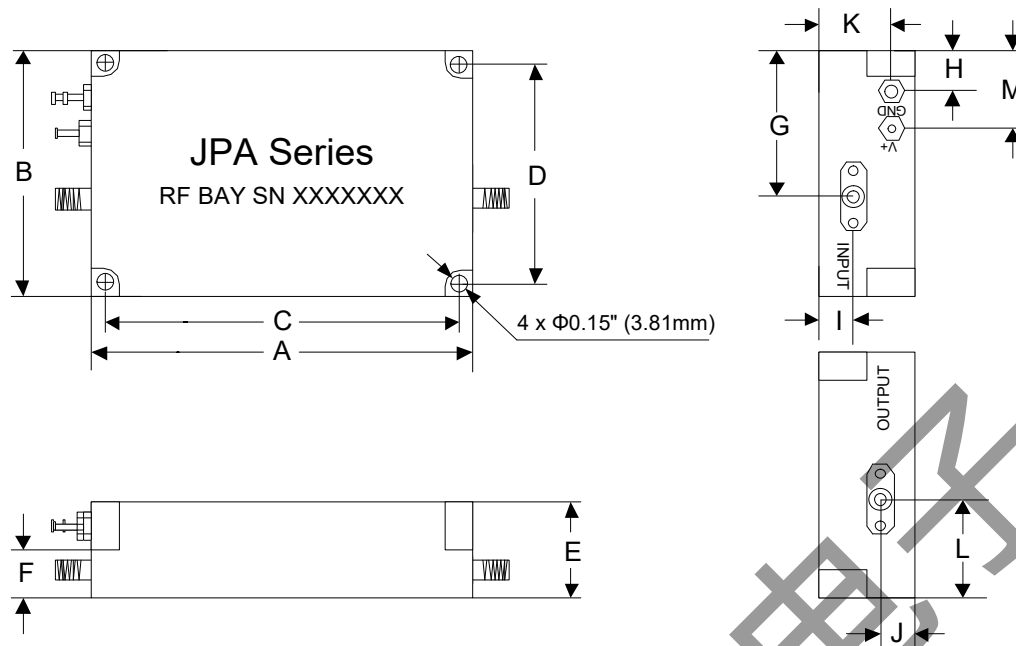
**ESD Sensitive Material****Warning and Caution:**

- 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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## 1-8GHz 5W RF Power Amplifier

### 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 | 7.62 | 7.62 |
|      | J      | K     | L     | M     |       |       |       |      |      |
| Inch | 0.30   | 0.75  | 1.10  | 0.70  |       |       |       |      |      |
| mm   | 7.62   | 19.05 | 27.94 | 17.78 |       |       |       |      |      |