Power Amplifier

PRE-RELEASE DATASHEET RFPA12-10

RFPA12-10 is a two-stage Power Amplifier that operates from 8 - 12 GHz and can be used in low-power X band applications or to drive the high-power amplifier. The amplifier provides 20 dB small signal gain and 24.74 dBm of Output P1dB. The input and output are matched to 50 ohms with on-chip DC blocking capacitors. The device is specifically designed for use in 8 - 12 GHz frequency in point-to-point radios for cellular backhaul Applications, 5G RF transceivers & SATCOM. The technology used to design DA is 0.1um GaAs pHEMT Process. Results are shown in the datasheet with all parasitic & coupling effects at the desired frequency.

Features:

- RF Frequency: 8-12 GHz
- Gain of 20 dB.
- Output P1dB of 24.7 dBm.
- Noise Figure of 2.9 dB.
- OIP3 is 32 dBm.
- Output Saturated Power: 23 dBm.
- Bias: VDD1= 4V, VGG1=-0.65V, ID= 209mA
- 0.1um GaAs pHEMT Technology.
- Die Size: 1.15 mm x 1.95 mm

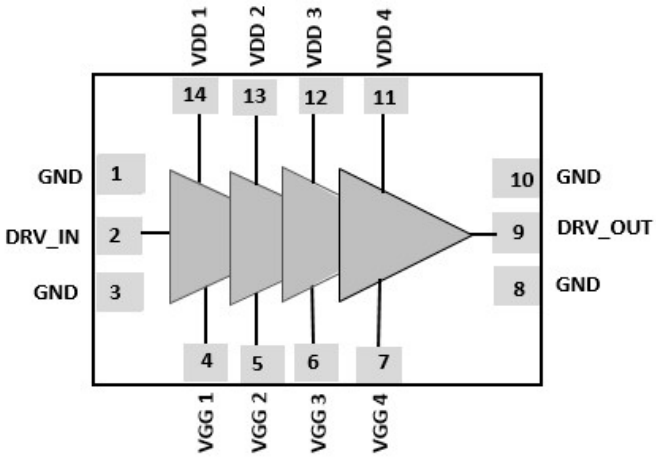
Application:

- 5G mobile system.
- Satellite Communication.
- Point-to-point communication system.
- Wi-Fi.
- IoT.

Tech Specs:

- Part Number: RFPA12-10
- Provider: RFIC Solutions Inc.
- Foundry node: 0.1um GaAs pHEMT Win Semiconductors
- Porting: IP can be ported to 65nm Si / CMOS node
- Maturity: IC is fabricated and tested.
- Availability: Now

Functional Block Diagram:



Deliverables:

- Schematic and Netlist
- Abstract Model (.lib file)
- Layout View(Optional)
- Behavioral model (Circuit & EM simulation)
- Extracted View(Optional)
- GDSII
- DRC, LVS, Antenna report
- Test bench with configuration(Optional)
- Documentation

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