

RFSBDN08-10 is a wideband active mixer used in the receiver application to translate an RF signal into an intermediate frequency. The process used to design the RF Mixer is 0.15um GaAs pHEMT RFSBDN08-10 is a single balanced mixer where LO signal is balanced. An RF balun is used to convert the LO signal into differential LO signal and two transistors arranged in a differential manner to mix LO and RF signals. A gain stage is used to amplify the RF signal before mixing with the LO signal. The gate bias voltage is applied to the transistors to achieve better linearity, maximum conversion gain with less LO power over the wideband down conversion operation.

### Features:

- RF Frequency: 8-12 GHz
- IF Frequency: 0.1 GHz
- LO Frequency: 8.1-12.1 GHz
- Conversion Gain: 7.7 dB.
- Output P1dB: - 0.5 dBm
- Input P1dB: - 6.5 dBm
- 0.1um GaAs pHEMT Technology.
- Die size: 1.9 mm x 1.3mm

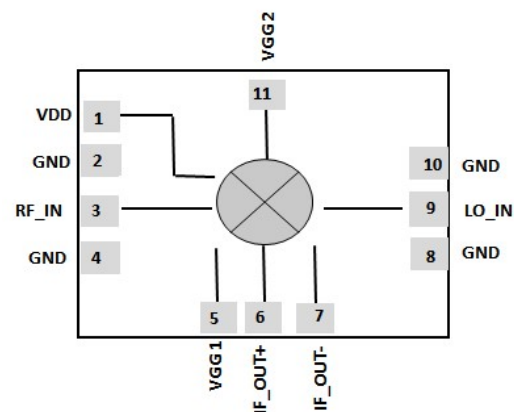
### Application:

- 5G mobile system.
- Satellite Communication.
- Point-to-point communication system.
- RADAR.

### Tech Specs:

- Part Number: RFSBDN08-10
- Provider: RFIC Solutions Inc.
- Foundry node: 0.1um GaAs pHEMT Win Semiconductors
- Porting: IP can be ported to 65nm Si / CMOS node

### 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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