

RFSBDN12-10 (DNC Mixer) is IR SSB Mixer used in receive application. The process used to design DNC Mixer is 0.1um GaAs pHEMT. This Mixer employs three resistive FET switches to mix LO and RF. In a resistive FET mixer, where the LO of the mixer is applied to the gate. RF is applied to the drain and, consequently, IF is filtered from the drain. No drain dc-bias voltage is applied to the transistor. Gate bias can help us achieve better linearity, minimum conversion loss with less LO power over the wideband down conversion operation. All results shown in datasheet with considering of parasitic and coupling effects in layout.

### Features:

- RF Frequency: 12-18 GHz
- IF Frequency: 0.1 GHz
- LO Frequency: 12.1-18.1 GHz
- Conversion Gain of 6 dB.
- Output P1dB: -1 dBm
- Input P1dB: -5.7 dBm
- 0.1um GaAs pHEMT Technology.
- Die size: 1.83 mm x 1.2 mm

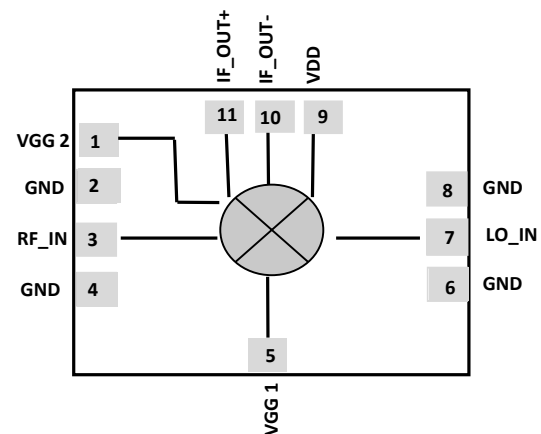
### Application:

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

### Tech Specs:

- Part Number: RFSBDN12-10
- 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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