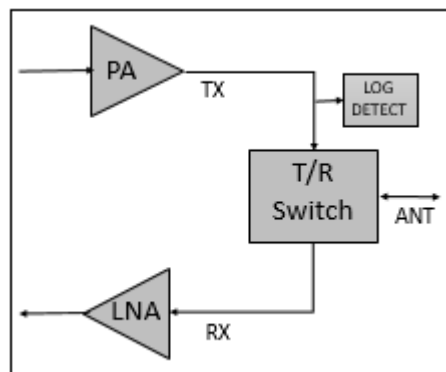


Features:

- RF frequency: 24 to 28 GHz
- TX Gain: 23 dB
- RX Gain : 22 dB
- RX Noise figure: 3.2 dB
- Tx output p1dB: 20.5 dBm
- RX output p1dB: 12 dBm
- Rx current: 50 mA
- Tx current : 230 mA
- Tx voltage: 4V/-0.6V
- Rx voltage: 4V/-0.6V
- 0.1um GaAs pHEMT Technology

Functional Block Diagram:



Description:

RFFEM28 is a high performance fully integrated RF front end module (FEM) design for use in 24 - 28 GHz for Wi-Fi 6 , Bluetooth, Zigbee, IoT application. RFFEM28 is designed for ease of use & maximum flexibility.

TX performance is focused on high linearity, gain and low IM3 levels. RX performance is focused on low Noise Figure, high gain. This simplifies the total front-end solution by reducing the bill of materials, system foot print, and manufacturing cost.

Wi-Fi 6 Front End Module integrates RF SPDT Switch, Driver amplifier in TX Path and RF SPDT Switch, LNA in RX Path into a single devices. This integrated chip is designed using 0.1um GaAs pHEMT process.

Application:

- Wi-Fi 6
- Bluetooth Application
- Zigbee
- Satellite Communication
- TDD/FDD System
- Internet of Things

Electrical Specification:-

Recieve Mode: RX_IN to RX_OUT.

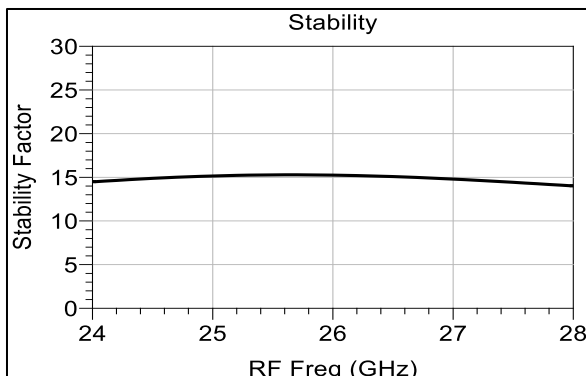
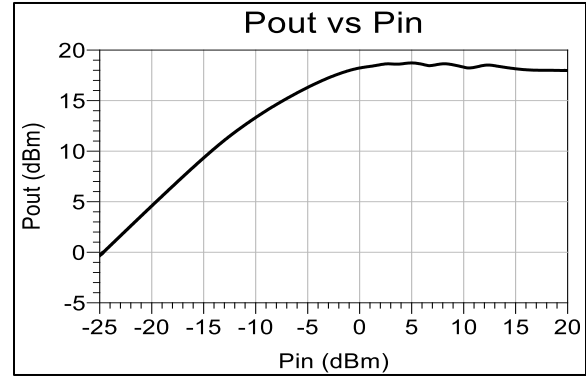
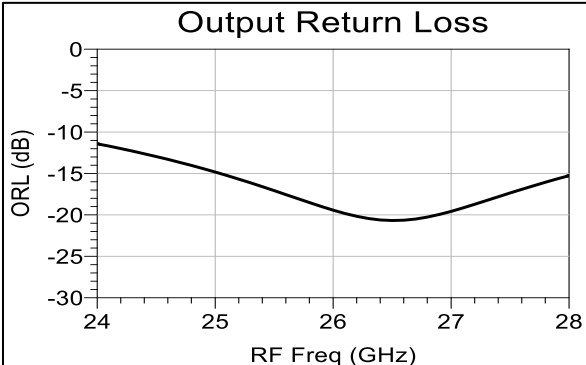
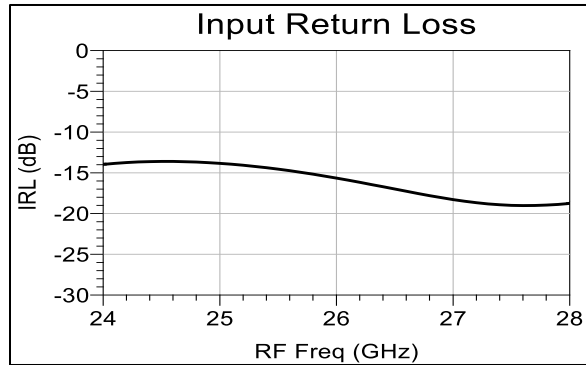
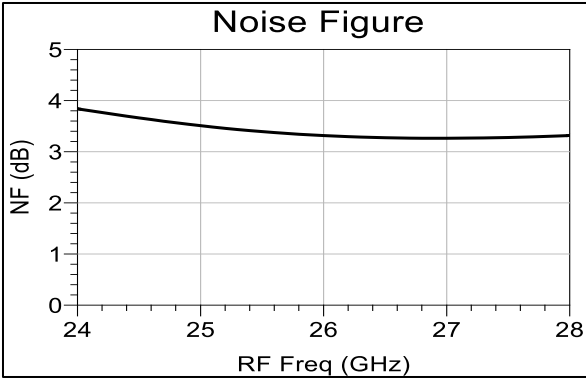
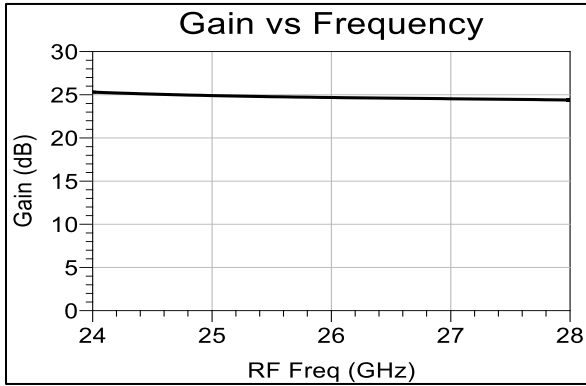
(Freq= 24-28 GHz, VDD= 4V, VGG= -0.6 V Idc= 50 mA, Zo=50Ω)

Parameter	Frequency (GHz)	Units	Typ.
RF Frequency	24-28	GHz	-
Small Signal Gain	24	dB	25
	26		25
	28		25
Output P1dB	24	dBm	12
	26		
	28		
Saturated Output Power	24	dBm	18.5
	26		
	28		
Output Third-Order Intercept, OIP3 (@Pin=-10dBm, Δf = 100MHz)	24	dBm	24
	26		
	28		
Input Return Loss	24	dB	16
	26		15
	28		19
Output Return Loss	24	dB	12
	26		20
	28		15
Noise Figure	24	dB	3.9
	26		3.7
	28		3.9
Biasing Conditions			
Drain Voltage (VDD)	---	V	4/-0.6
Gate Voltage (VGG)	---	V	-0.65
Drain Current (Id)	---	mA	50

Front End Module



PRE-RELEASE DATASHEET RFFEM28



Electrical Specification:

Transmit Mode: TX_IN to TX_OUT.

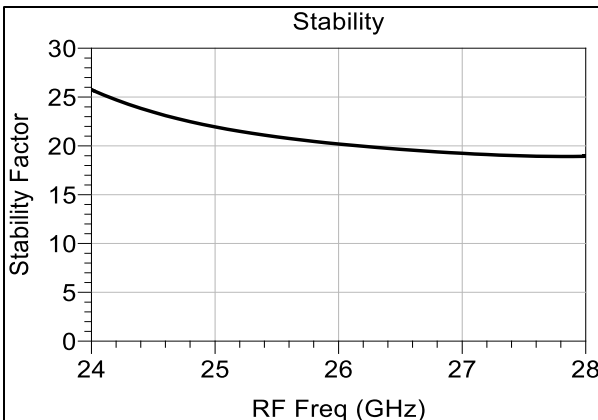
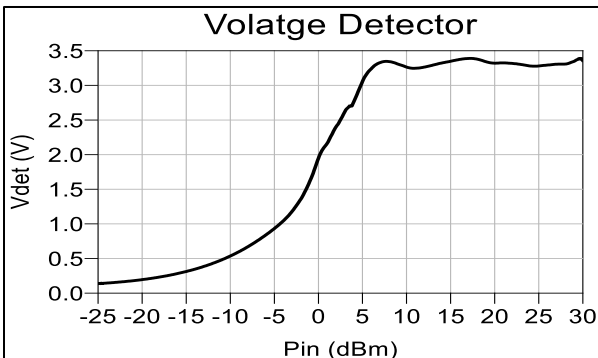
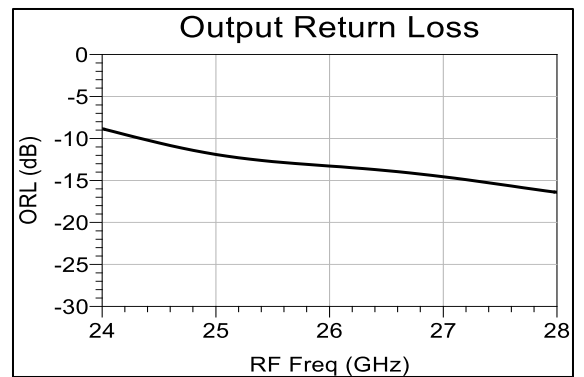
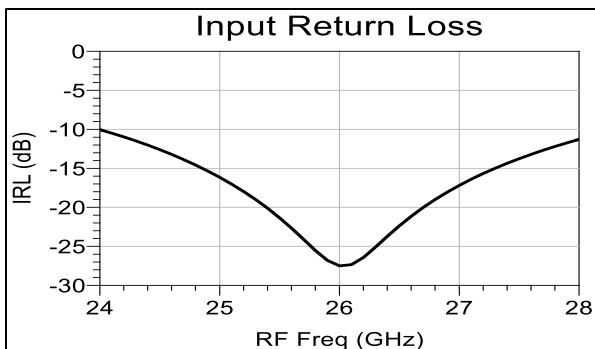
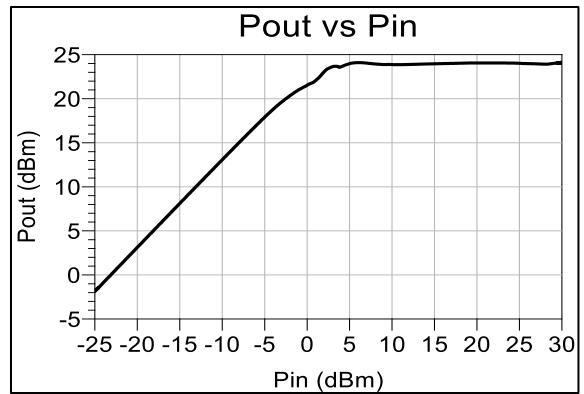
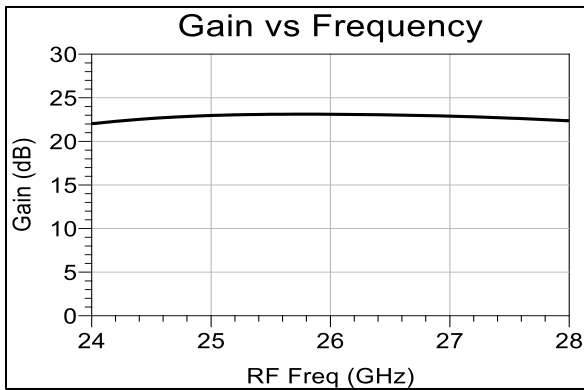
(Freq= 24-28GHz, VDD= 4V, VGG= -0.65 V Idc= 230 mA, Zo=50Ω)

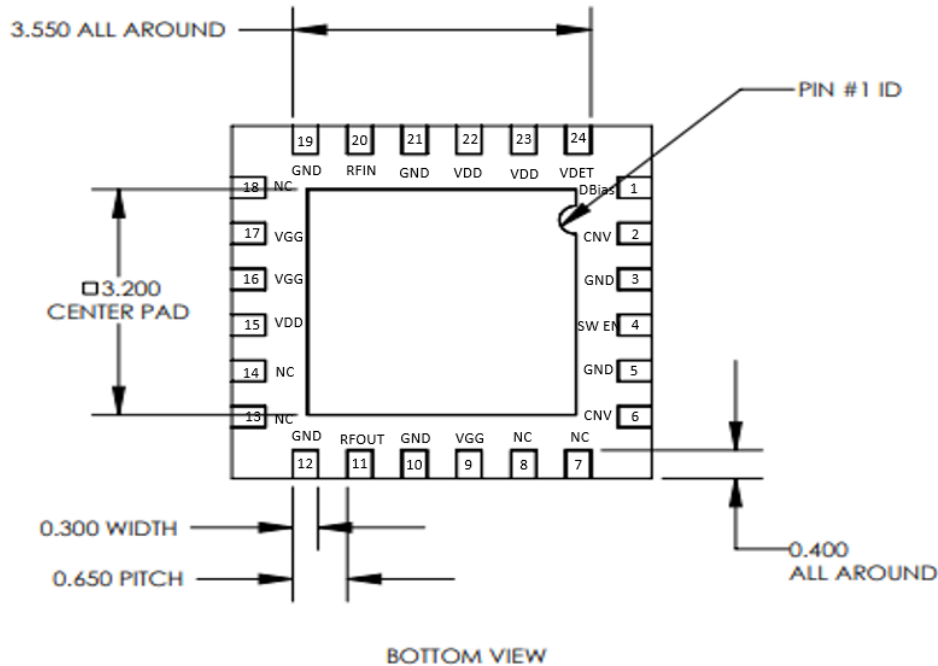
Parameter	Frequency (GHz)	Units	Typ.
RF Frequency	24-28	GHz	-
Small Signal Gain	24	dB	22
	26		23
	28		22
Output P1dB	24	dBm	20.5
	26		
	28		
Saturated Output Power	24	dBm	24
	26		
	28		
Output Third-Order Intercept, OIP3 (@Pin=-10dBm, Δf = 100MHz)	24	dBm	-
	26		
	28		
Input Return Loss	24	dB	10
	26		24
	28		10
Output Return Loss	24	dB	9
	26		12
	28		22
Noise Figure	24	dB	3.9
	26		3.7
	28		3.9
Biasing Conditions			
Drain Voltage (VDD)	---	V	4/-0.6
Gate Voltage (VGG)	---	V	-0.65
Drain Current (Id)	---	mA	230

Front End Module



PRE-RELEASE DATASHEET RFFEM28





Functional Description:-

Pin number	Pin name	Description
7,8,13,14,18	NC	Not Connected
3,5,10,12,19,21	GND	RF Ground
15,22,23	VDD	Drain Bias voltage
9,16,17	VGG	Gate Bias voltage
20	RF_IN	RF Input
11	RF_OUT	RF Output
1	DBias	Detector Bias
24	VDET	Detected Voltage
2,6	CNV	Switch Control Voltage
4	SW_EN	Antenna

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