

### 1GHZ, 28DB GAIN GAAS/GAN PUSH PULL HYBRID



GaAs pHEMT die and, GaN HEMT die. RFPP9850 is designed to operate from 40MHz to 1003MHz. It provides excellent linearity and superior return loss performance with low noise. The product is packaged in SOT-115J and uses the latest GaN technology for the output stage.

#### **Optimum Technology Matching® Applied**

GaAs HBT GaAs MESFET InGaP HBT

SiGe BiCMOS Si BiCMOS

GaAs pHEMT Si CMOS

GaN HEMT **RF MEMS** LDMOS

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SiGe HBT

🗌 Si BJT







# **RFPP9850**

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#### **Absolute Maximum Ratings**

Parameter	Rating	Unit
RF Input Voltage (single tone; on evaluation board)	70	dBmV
DC Supply Over-Voltage (5 minutes)	30	V
Storage Temperature	-40 to +100	°C
Operating Mounting Base Temperature	-30 to +100	°C



Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

RoHS status based on EUDirective 2002/95/EC (at time of this document revision).

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Deveryonter	Specification			11	O an dition		
Parameter	Min.	Тур.	Max.	Unit	Condition		
Overall					V+= 24V; TMB=30°C; ZS=ZL=75Ω		
Power Gain		27.0		dB	f=50MHz		
		28.0			f=870MHz		
	27.5	28.5	29.0	dB	f=1003MHz		
Slope <sup>[1]</sup>	0.5	1.0	2.0	dB	f=40MHz to 1003MHz		
Flatness of Frequency Response			0.8	dB	f=40MHz to 1003MHz		
Input Return Loss	-20			dB	f=40MHz to 320MHz		
	-18			dB	f=320MHz to 640MHz		
	-17			dB	f=640MHz to 870MHz		
	-16			dB	f=870MHz to 1003MHz		
Output Return Loss	-20			dB	f=40MHz to 320MHz		
	-19			dB	f=320MHz to 640MHz		
	-17			dB	f=640MHz to 870MHz		
	-16			dB	f=870MHz to 1003MHz		
Noise Figure		4.5	5.0	dB	f=50MHz to 1003MHz		
Total Current Consumption (DC)		250.0	270.0	mA			
Distortion					V+= 24V; TMB=30°C; ZS=ZL=75Ω, PAL D Raster		
CTB <sup>[4]</sup>		68	63	dBc	V <sub>0</sub> =44 dBmV at 862MHz, flat, 98 analog channels <sup>[2]</sup>		
XMOD <sup>[5]</sup>		67		dBc	V <sub>0</sub> =44 dBmV at 862MHz, flat, 98 analog channels <sup>[2]</sup>		
CSO <sup>[6]</sup>		66	61	dBc	V <sub>0</sub> =44 dBmV at 862MHz, flat, 98 analog channels <sup>[2]</sup>		
Distortion					V+= 24V; TMB=30°C; ZS=ZL=75Ω, NTSC Raster		
CTB <sup>[4]</sup>		-68		dBc	V <sub>0</sub> =46dBmV, 79 analog channels plus 75 digital channels (-6dB offset) <sup>[3]</sup>		
XMOD <sup>[5]</sup>		-64		dBc	V <sub>0</sub> =46dBmV, 79 analog channels plus 75 digital channels (-6dB offset) <sup>[3]</sup>		
CSO[6]		-75		dBc	$V_0$ =46dBmV, 79 analog channels plus 75 digital channels (-6dB offset) <sup>[3]</sup>		
CIN <sup>[7]</sup>		65		dB	$V_0$ =46dBmV, 79 analog channels plus 75 digital channels (-6dB offset) <sup>[3]</sup>		

- 1. The slope is defined as the difference between the gain at the start frequency and the gain at the stop frequency.
- 2. 98 analog channels, PAL D raster: 47.25MHz to 862.25MHz, 44 dBmV flat output level
- 3. 79 analog channels, NTSC frequency raster: 55.25MHz to 547.25MHz, +46dBmV flat output level, plus 75 digital channels, -6dB offset relative to the equivalent analog carrier.
- 4. Composite Triple Beat (CTB) The CTB parameter is defined by the NCTA.
- 5. Cross Modulation (XMOD) Cross modulation (XMOD) is measured at baseband (selective voltmeter method), referenced to 100% modulation of the carrier being tested.
- 6. Composite Second Order (CSO) The CSO parameter (both sum and difference products) is defined by the NCTA.
- 7. Carrier to Intermodulation Noise (CIN) The CIN parameter is defined by ANSI/SCTE 17 (Test procedure for carrier to noise).



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Unit: mm

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Pinning:

1	2	3	4	5	6	7	8	9
INPUT	GND	GND		+VB		GND	GND	OUTPUT



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