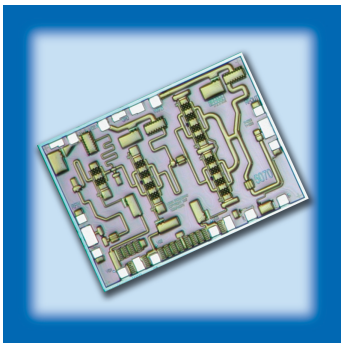
5.9-9.5 GHz GaAs MMIC Linear Power Amplifier

April 2008 - Rev 02-Apr-08

XP1035-BD
XRoHS

Features

- 26 dB Small Signal Gain
- 39 dBm Third Order Intercept Point (OIP3)
- Integrated Power Detector
- 100% On-Wafer RF Testing



General Description

The XP1035-BD is a linear power amplifier that operates over the 5.9-9.5GHz frequency band. The device provides 26 dB gain and 39 dBm Output Third Order Intercept Point (OIP3) across the band and is comprised of a three stage power amplifier with an integrated, temperature compensated on-chip power detector. The device includes on-chip ESD protection structures and DC by-pass capacitors to ease the implementation and volume assembly of the part. The device is manufactured in GaAs PHEMT device technology with BCB wafer coating to enhance ruggedness and repeatability of performance. The XP1035-BD is well suited for Point-to-Point Radio, LMDS, SATCOM and VSAT applications.

Absolute Maximum Ratings[1]

Supply Voltage (Vd1,2,3)	+7.2V
Supply Current (Id1,2,3)	600 mA
Gate Bias Voltage (Vg1,2,3)	-3V
Max Power Dissipation (Pdiss)	4.2W
RF Input Power	+15 dBm
Operating Temperature (Ta)	-55 to +85 °C
Storage Temperature (Tstg)	-65 to +150 °C
Channel Temperature (Tch)	-40 to MTTF Graph[2]

(1) Operation of this device above any one of these parameters may cause permanent damage.
(2) Channel temperature directly affects a device's MTTF. Channel temperature should be kept as low as possible to maximize lifetime.

Electrical Characteristics (Ambient Temperature T = 25 °C)

Parameter	Units	Min.	Typ.	Max.
Frequency Range (f)	GHz	5.9	-	9.5
Small Signal Gain (S21)	dB		26	
Input Return Loss (S11)	dB		13	
Output Return Loss (S22)	dB		10	
Reverse Isolation (S12)	dB		TBD	
Psat	dBm		29	
OIP3	dBm		39	
Drain Bias Voltage (Vd1,2,3)	VDC		6	
Detector Bias Voltage (Vdet,ref)	VDC		5	
Gate Bias Voltage (Vg1,2,3)	VDC	-2	-1	
Supply Current (Id1)	mA		70	
Supply Current (Id2)	mA		140	
Supply Current (Id3)	mA		280	

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