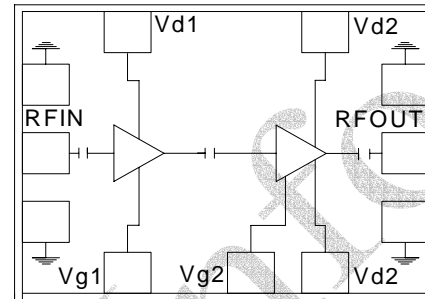


## 4.8 – 6.4 GHz 2W Power Amplifier

### Features

- ♦ Frequency Range : 4.8 – 6.4GHz
- ♦ 33 dBm output P1dB
- ♦ 25 dB Power gain
- ♦ 30% PAE
- ♦ High IP3
- ♦ Input Return Loss > 15 dB
- ♦ Output Return Loss > 10 dB
- ♦ Dual bias operation
- ♦ No external matching required
- ♦ DC decoupled input and output
- ♦ 0.15  $\mu\text{m}$  InGaAs pHEMT Technology
- ♦ Chip dimension: 2.5 x 2.4 x 0.1 mm

### Functional Diagram



### Typical Applications

- ♦ RADAR
- ♦ C band point to point radio
- ♦ VSAT

### Description

The ASTRA 2134021 is a C-band Power amplifier with 33dBm power output. The PA uses 2 stages of amplification and operates in 4.8 – 6.4 GHz frequency range. The PA features 25 dB of high gain with input and output return losses of 15 dB and 10 dB respectively. The PA has a high IP3 of 43dBm and greater than 30% PAE. This feature enables it to be used in the applications requiring efficiency along with linearity. The chip operates with dual bias supply voltage. The die is fabricated using a reliable 0.5 $\mu\text{m}$  InGaAs pHEMT technology. The Circuit grounds are provided through vias to the backside metallization.

**Electrical Specifications <sup>(1)</sup> @  $T_A = 25\text{ }^\circ\text{C}$ ,  $V_{d1} = V_{d2} = 8\text{V}$ ,  $V_{g1} = V_{g2} = -0.8\text{V}$   
 $Z_o = 50\text{ }\Omega$** 

Parameter	Min.	Typ.	Max.	Units
Frequency Range	4.8	-	6.4	GHz
Gain	-	25	-	dB
Gain Flatness	-	$\pm 0.75$	-	dB
Output Power (P1 dB)	-	33	-	dBm
Input Return Loss	-	15	-	dB
Output Return Loss	-	10	-	dB
Saturated output power (Psat)	-	34	-	dBm
Output Third Order Intercept (IP3)	-	43	-	dBm
Power Added Efficiency (PAE)	-	30	-	%
Supply Current	-	800	-	mA