

# 75 Ohm RF Amplifier

## 50-1300 MHz



### TAT7461

The TAT7461 is a 75 Ohm RF Amplifier designed for CATV applications to 1300 MHz. The balance of low noise and distortion provides an outstanding solution for drop and other distribution amplifiers.

The TAT7461 is fabricated using 6-inch GaAs pHEMT technology to optimize performance and cost. It provides excellent gain and return loss consistency from the use of extensive on-chip negative feedback. The TAT7461 also uses an on-chip active bias for consistent bias current and repeatable performance. Simple external tuning allows the TAT7461 to achieve excellent return loss.

#### Features:

- 75 Ohm, 50-1000 MHz Bandwidth
- Low Noise: < 2.6dB to 1000 MHz
- Low Distortion: CSO - 72, CTB - 88 dBc
- Low Power Consumption: 6.0V, 130mA
- Stability Factor (K) > 1
- SOT-89 package

#### Applications:

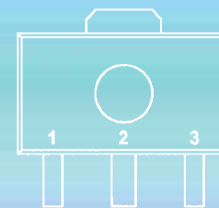
- Distribution Amplifiers
- Multi Dwelling Units
- Drop Amplifiers
- Single Ended Gain Block

### Electrical Performance Specifications at 25°C

Table 1. RF Characteristics to 1 GHz

Parameter	MIN	TYP	MAX	Unit
Bandwidth	50		1000	MHz
RF Gain	15.2	16.1	16.8	dB
Gain Flatness		0.3	0.7	+/- dB
Noise Figure		2.3	3.3	dB
Input Return Loss		23		dB
Output Return Loss		23		dB
CSO (26 dBmV/ch at output, 80 ch)	-62	-72		dBc
CTB (26 dBmV/ch at output, 80 ch)	-75	-88		dBc
Output IP2 (>5 dBm/tone)		61		dBm
Output IP3 (>5 dBm/tone)		39		dBm
I <sub>dd</sub> , 6V	100	130	150	mA

#### Pin Configuration



SOT-89 Package

Pin No.	Pin Name	Description
1	RF IN	RF Input
2	GND	Ground
3	RF OUT	RF Output

### TAT7466

The TAT7466 is a 75 Ohm RF Amplifier designed for use up to 1300 MHz. The TAT7466 contains two separate amplifiers for push pull applications. It is fabricated using 6-inch GaAs pHEMT technology to optimize performance and cost. Each amplifier contains on-chip active biasing. The bias current set point of each amplifier is adjustable with a single resistor from the input to ground. The TAT7466 may be flexibly configured for 6v higher gain applications using external 2:1 transformers, or for direct replacement of familiar 5v SOIC-8 amplifiers using a 1:1 balun.

#### Features:

- 75 Ohm, 50-1000 MHz Bandwidth
- Low Noise Figure: 4.0 dB to 1000 MHz
- Adjustable Low Power Consumption
- SOIC-8 package

#### Applications:

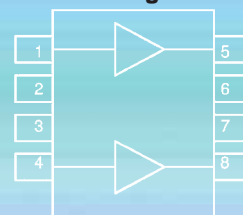
- Replacement for 5v SOIC-8 Amplifiers
- Edge QAM gain stage
- Multi Dwelling Unit output stage

### Electrical Performance Specifications

Table 1. RF Characteristics in Push Pull Application Circuit with 2:1 Transformers

Characteristic	Typ	50	250	450	860	1000	Unit
Bandwidth		50	250	450	860	1000	MHz
RF Gain		15	14.4	14.0	13.2	13.0	dB
Gain Flatness	0.5						+/- dB
Noise Figure		2.6	2.9	3.3	4.0	4.3	dB
Input Return Loss	16						dB
Output Return Loss	20						dB
CSO (39 dBmV/80 channel output)	-80						dBc
CTB (39 dBmV/80 channel output)	-67						dBc
I <sub>dd</sub> (RBIAS=5K, 6V)	190						mA

#### Pin Configuration



SOIC-8 Package

Pin No.	Pin Name	Description
1	RF IN	RF Input 1
5	RF OUT	RF Output
4	RF IN	RF Input
8	RF OUT	RF Output
2, 3, 6, 7	GND	Ground
Exposed Slug	GND	Ground