

**75 Ohm RF Amplifier
50-1002 MHz**

**TAT7430B
Preliminary Datasheet**

Overview

The TAT7430B is a 75 Ohm RF Amplifier designed for CATV applications to 1002 MHz. The balance of low noise and distortion provides an ideal solution for drop and distribution amplifiers. It is particularly well suited for new home networks requiring higher gain for a large number of splits. In addition, the TAT7430B's combination of high gain, low noise, and good input return loss make it an excellent choice for optical receiver applications. It is able to work in low noise applications on a 5 volt supply.

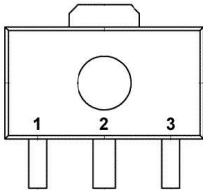
The TAT7430B is fabricated using 6-inch GaAs pHEMT technology to optimize performance and cost. It provides excellent gain and return loss consistency inherent to the pHEMT process.

Features

- 75 Ohm, 50-1002 MHz Bandwidth
- High Gain, 22.5 dB
- Low Noise: < 2.2dB to 1002 MHz
- Low Distortion: CS0 -68, CTB -81 dBc typical
- SOT-89 package

Applications

- Distribution Amplifiers
- Multi Dwelling Units
- Drop Amplifiers
- Single Ended Gain Block
- TIA for Optical Receivers



Pin Configuration

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



SOT-89 Package

**Electrical Performance Specifications at 25 °C,
Performance expected to meet or exceed:**

Table 1. RF Characteristics to 1 GHz				
Parameter	Min	Typical	Max	Unit
Bandwidth	50		1002	MHz
RF Gain		22.8		dB
Gain Flatness		0.5		+/- dB
Noise Figure		2.0		dB
Input Return Loss		-22		dB
Output Return Loss		-18		dB
CSO (33 dBmV/ch at output, 80 ch NTSC)		-68		dBc
CTB (33 dBmV/ch at output, 80 ch NTSC)		-81		dBc
I _{dd} , 8V		190		mA

Ordering Information

Part Number	Description	Package Description	Component Packaging
TAT7430B-EB	Drop Amplifier optimized Evaluation Board	Evaluation board	
TAT7430B	RFIC 50-1002MHz	RoHS Compliant SOT-89	1,000 piece Tape and Reel: Individual units marked "TAT7430B"

Absolute Maximum Ratings

Parameter	Absolute Maximum
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +150°C

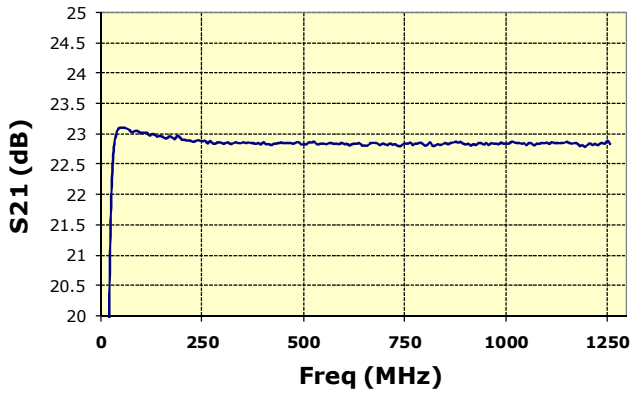
Note: exceeding any of these limits may cause permanent damage to this device

ESD Classification and Moisture Sensitivity Level

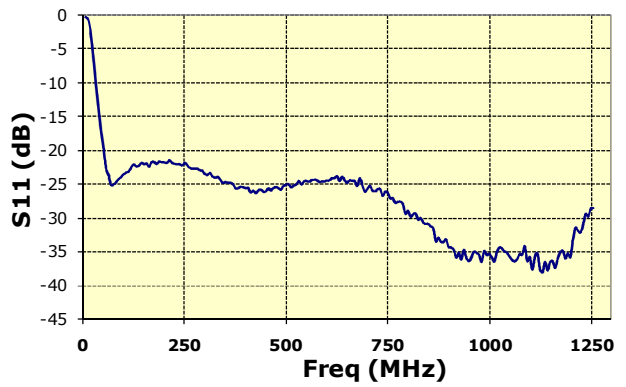
Parameter	
ESD Classification	
- Human Body Model	Class 1A (400V)
- Charged Device Model	Class IV (1000V)
Moisture Sensitivity Level	Level 3
RoHS	RoHS compliant per EU directive

TAT7430B Performance Data on Evaluation Board

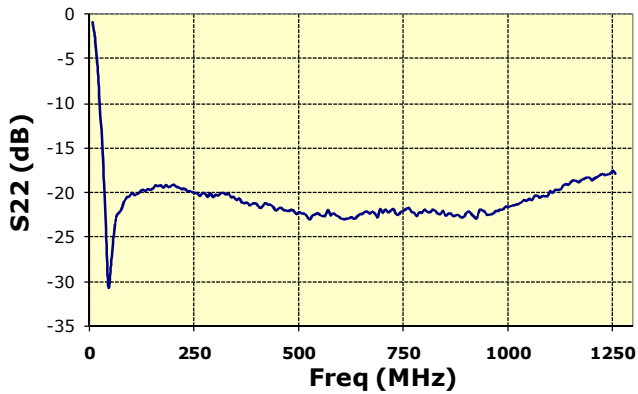
Gain



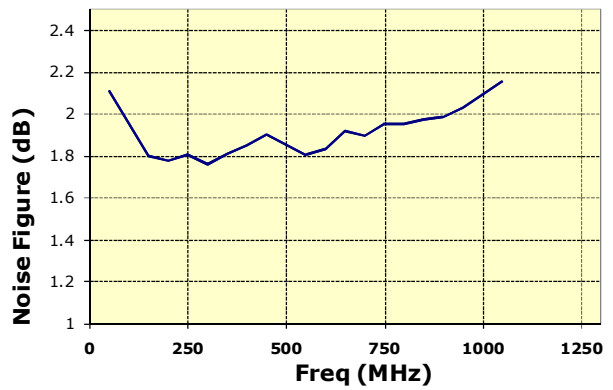
Input Return Loss



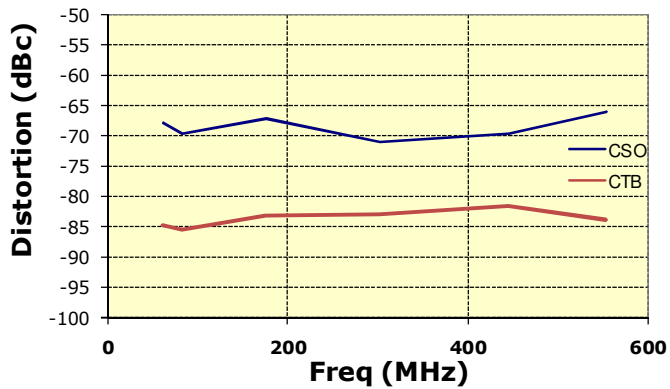
Output Return Loss



Noise Figure

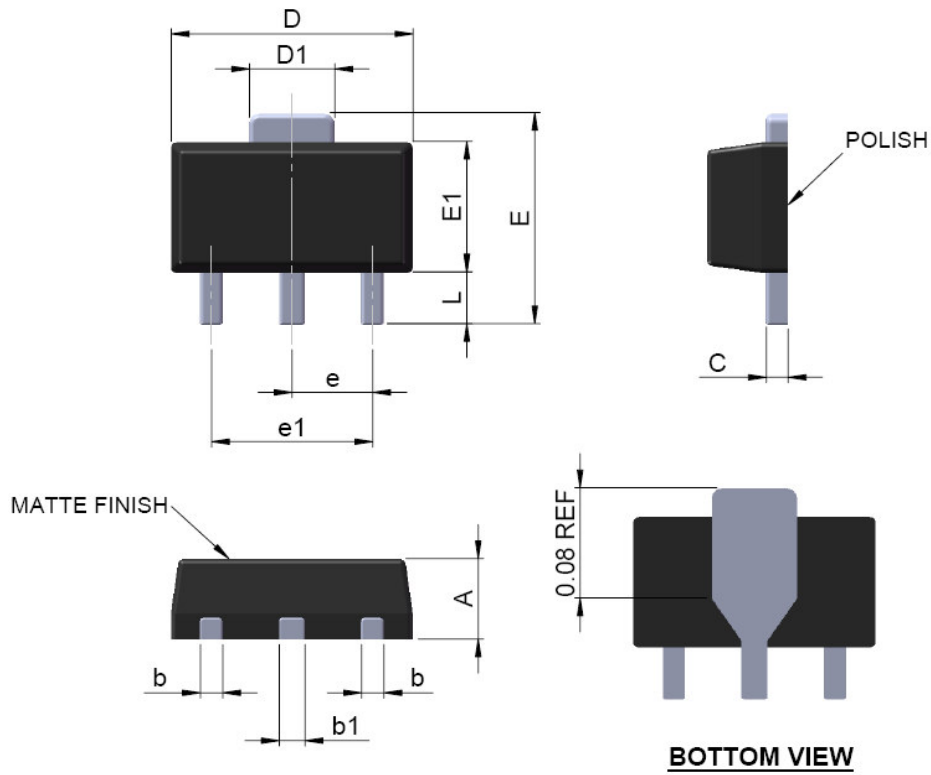


Distortion (8V, 190mA, 33dBmV out, 80ch NTSC)



Note: Performance Data at 25 degrees C

Mechanical Dimensions



SYMBOL	MIN	NOM	MAX
A - Thickness	1.40	1.50	1.60
C - Lead thickness	0.35		0.43
D - Body width	4.40		4.60
E1 - Body length	2.30		2.60
E - Total length	3.64		4.25
e - Lead spacing	1.40	1.50	1.60
e1 - Dual lead spacing	2.90	3.00	3.10
b - Outer lead width	0.35		0.48
b1 - Center lead width	0.40		0.56
L - Lead length	0.74		1.20
d1 - Tab lead width	1.40		1.80
Above body	0.35		0.64

DIMENSIONS ARE IN MM