75 Ohm RF Amplifier **TAT 7468B**
50-1000 MHz **Preliminary Data Sheet**

Overview

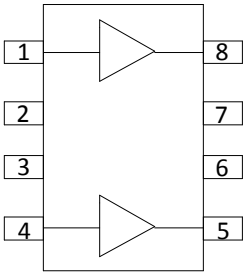
The TAT7468B is a 75 Ohm RF Amplifier designed for use to 1 GHz. The TAT7468B contains two separate amplifiers for push pull applications. It is fabricated using 6-inch GaAs pHEMT technology to optimize performance and cost. Each amplifier contains on-chip active biasing. The bias current set point of each amplifier is adjustable with a single resistor from the input to ground.

Features

- 75 Ohm, 50-1000 MHz Bandwidth
- Low Noise Figure: 3.7 dB to 1000 MHz
- Adjustable Low Power Consumption
- SOIC-8 or QFN package

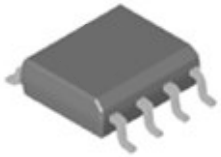
Applications

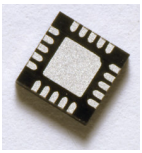
- Replacement for 5v SOIC-8 amplifiers
- Edge QAM input gain stage
- VONU Transimpedance Amplifiers
- Distribution amplifiers



SOIC8 Pin Configuration

Pin No.	Pin Name	Description
1	RF IN A	RF Input
2,3	GND	Ground
4	RF IN B	RF Input
5	RF OUT B	RF Output
6	BIAS ADJ B	Bias Adjustment
7	BIAS ADJ A	Bias Adjustment
8	RF OUT A	RF Output
Exposed Slug	GND	Ground





Target Specifications: TAT7468B RF Amplifier

Table 1. RF Characteristics

Characteristic	Notes	Min	Typ	Max	Unit
Bandwidth		50		1002	MHz
RF Gain			16		dB
Gain Flatness			0.75		+/- dB
Noise Figure			3.7		dB
Input Return Loss	To 1000 MHz		-18		dB
Output Return Loss	To 1000 MHz		-15		dB
Output IP3 (2 dBm/tone)	6 MHz spacing		35		dBm
Output IP2 (2 dBm/tone, <600MHz)	6 MHz spacing		68		dBm
Idd	5V		150		mA

Ordering Information

Part Number	Description	Package Description	Component Packaging
TAT7468B-SC8	RFIC, 50 -1000MHz , push pull amplifier	RoHS Compliant SOIC-8	Engineering Samples
TAT7468B-Q	RFIC, 50-1000MHz, push pull amplifier sample	RoHS Compliant QFN 4x4mm	Engineering Samples
TAT7468B-SC8-EB	Evaluation Board	Evaluation Board SOIC-8	
TAT7468B-Q-EB	Evaluation Board	Evaluation Board QFN	

Absolute Maximum Ratings

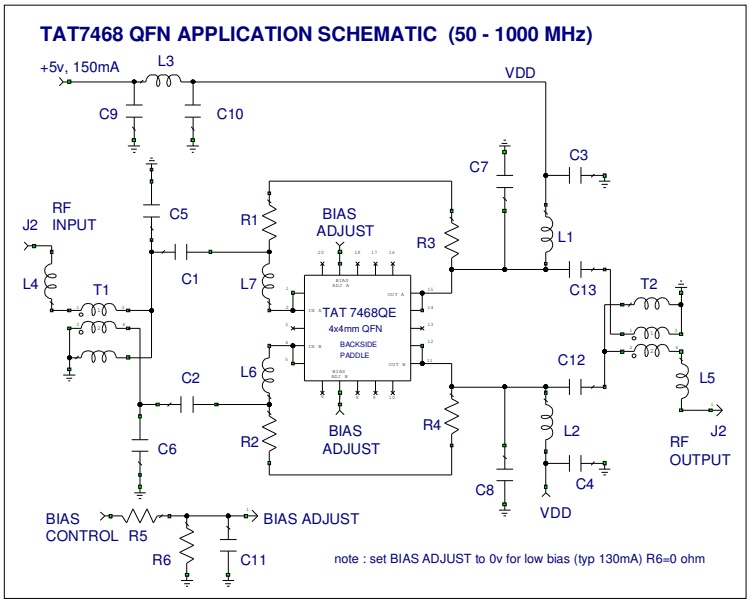
Parameter	Absolute Maximum
RF Input Power	TBD
Voltage	10.0 volts
Operating Temperature	-40°C to +85°C
Storage Temperature	-60°C to +150°C

ESD Classification and Moisture Sensitivity Level*

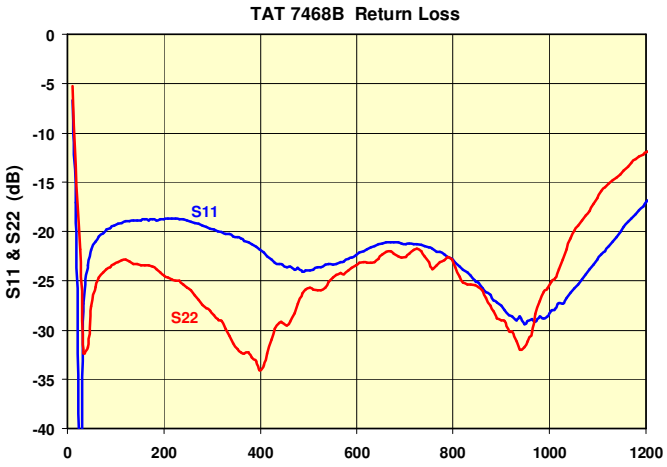
Parameter	Targets
ESD Classification	
- Human Body Model	Class 1B, 500V
- Machine Model	Class IV, 2000V
Moisture Sensitivity Level	Level 3
RoHS	RoHS compliant per EU directive

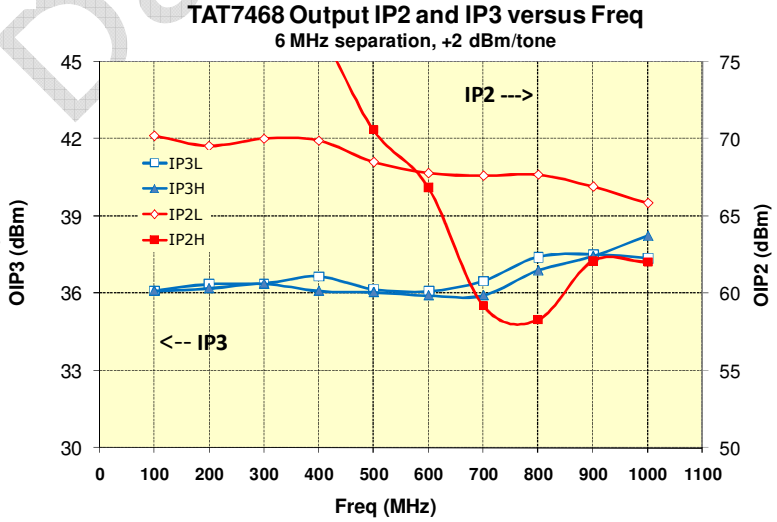
*Expected Behavior

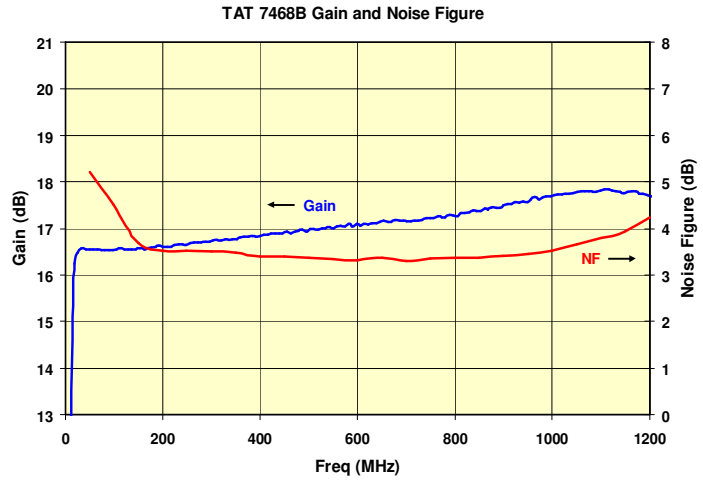
Performance Data (5V 150mA, push-pull amplifier, QFN 4x4mm)



Reference Designator	Value	MFG	MFG PN
L1,2	560 nH	CoilCraft	0402AF-561XJLW
L3	910 nH	CoilCraft	1008AF-901XKLC
L4,5	4.7nH	CoilCraft	0402CS-4N7XJLW
L6,7	5.6 nH	CoilCraft	0402CS-5N6XJLW
T1,2	1:1 Balun	MiniCircuits	TC1-33-75G2+
C1,2,9,10,11	.01 uF	AVX	0402YC103KAT
C5,6,7,8	0.5 pF	AVX	04025A005BAT9A
C12,13	220 pF	AVX	04025C221KAT2A
R1,2	750 ohm	Dale	CRCW0402750RFKED
R3,4	0 ohm	Dale	CRCW04020R0FKED
R5	750 ohm	Dale	CRCW0402750RFKED
R6	0 ohm	Dale	CRCW04020R0FKED
J1,2	F-Edge Mount	Amphenol	531-40039
U1		TriAccess	TAT 7468B

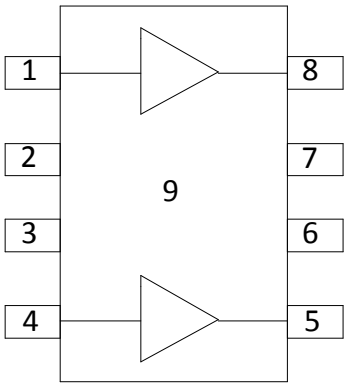




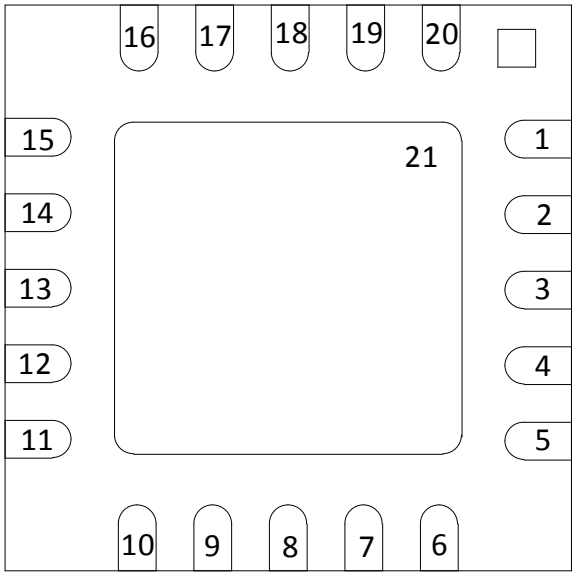


Note: Data for IP2H fundamental > 500 MHz falls out of band (> 1000 MHz).

Package Pin Outs



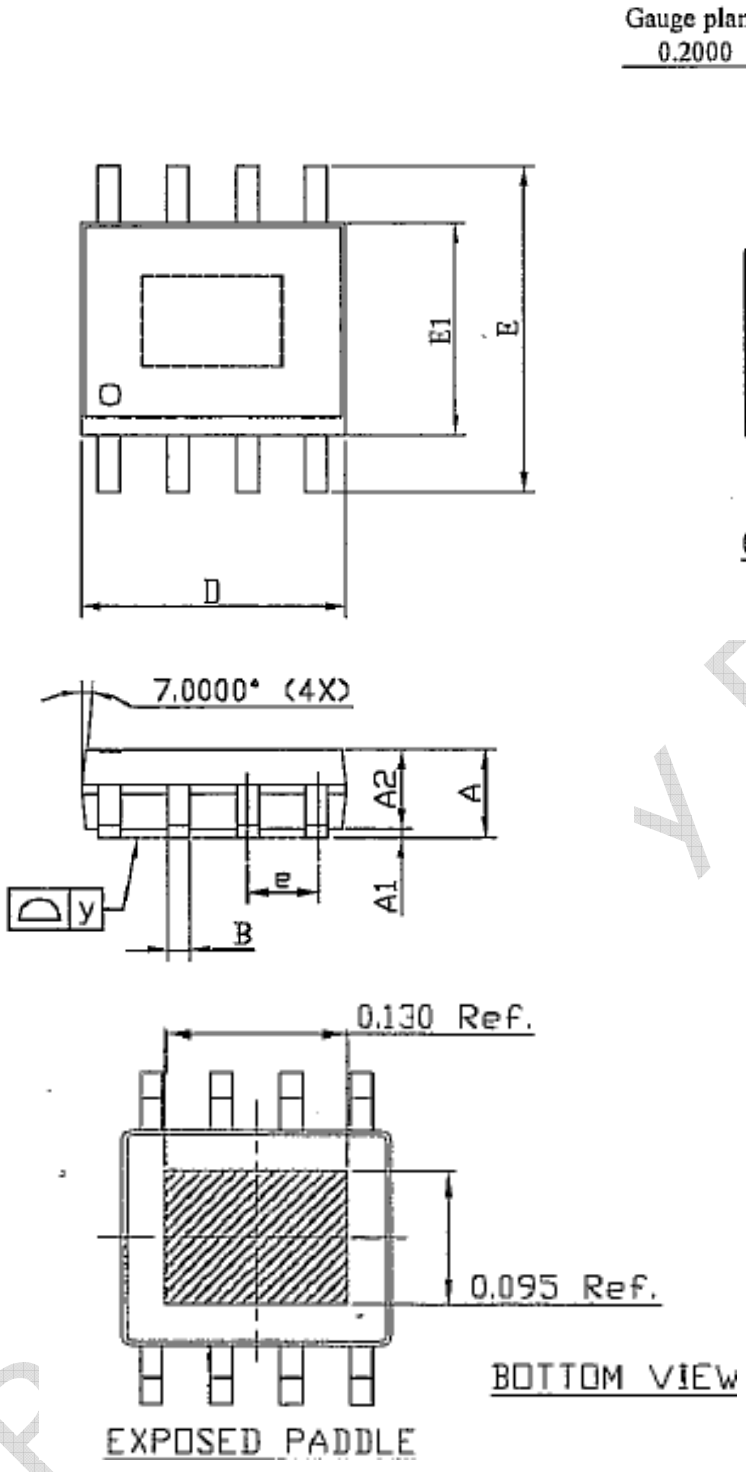
SOIC8
TOP VIEW



QFN 4x4mm
BOTTOM VIEW

PIN NUMBER	SOIC8	QFN 4X4mm
1	INPUT A	INPUT A
2	NC	INPUT A
3	NC	NC
4	INPUT B	INPUT B
5	OUTPUT B	INPUT B
6	BIAS ADJ A	NC
7	BIAS ADJ B	BIAS ADJ B
8	OUTPUT A	NC
9	PADDLE GROUND	NC
10		NC
11		OUTPUT B
12		OUTPUT B
13		NC
14		OUTPUT A
15		OUTPUT A
16		NC
17		NC
18		NC
19		BIAS ADJ A
20		NC
21		PADDLE GROUND

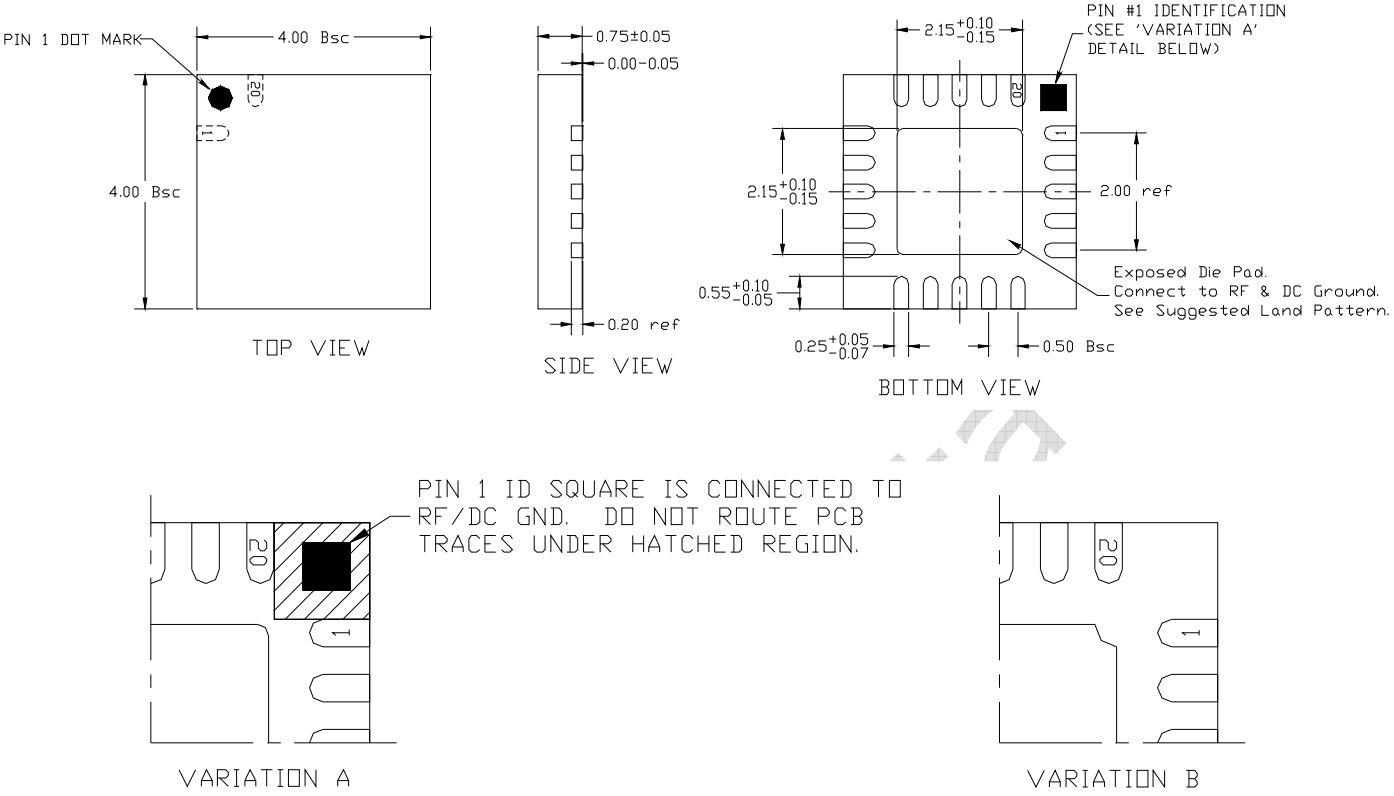
Mechanical Dimensions (SOIC8, TAT7468B-SC8)



Symbol	Min	Nominal	Max
A	0.054	0.059	0.068
A1	0		0.004
A2		0.057	
B	0.013		0.02
C	0.007		0.01
D	0.189		0.197
E1	0.15	0.153	0.157
E1		0.05	
E1	0.228	0.236	0.244
L	0.016		0.05
y			0.004
theta	0		8
L1	0.037	0.041	0.045

Dimensions in inches

Mechanical Specifications (QFN 4x4mm, TAT7468B-QFN),
Dimensions in mm



PIN #1 IDENTIFICATION DETAIL

TriAccess Technologies uses two variations of Pin #1 identification: Variation A and B. Variation A uses a metal square, Variation B uses the notched pad corner. Both variations may be used at any time. Layouts need to plan for both contingencies.