TAT8888

CATV GaN Power Doubler Hybrid

Applications

- HFC Nodes
- CATV Line Amplifiers
- Head End Equipment

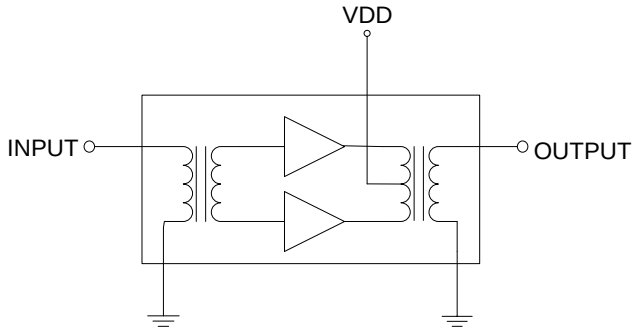


SOT-115 Hybrid Module

Product Features

- Excellent High Output Linearity
- High Gain 24 dB at 1000 MHz
- 50 – 1000 MHz Bandwidth
- Ultra-Low CSO/CTB/XMOD
- Low Noise
- Excellent Input/Output Match
- SOT-115J Packaging
- High Reliability
- +24 V, 445 mA

Functional Block Diagram



General Description

The TAT8888 is an ultra-linear, packaged GaAs/GaN amplifier intended for output stage amplification in CATV infrastructure applications.

The TAT8888 features a push-pull cascode design which provides flat gain along with ultra-low distortion, making it ideal for use in CATV distribution systems requiring high output power capability.

The TAT8888 draws 445 mA from a +24 V supply and exceeds the output linearity performance of traditional GaAs-based amplifiers.

The TAT8888 is packaged in an industry standard 7-pin SOT-115J module.

Pin Configuration

Pin No.	Label
1	RF Input 75 Ohm
2 – 3	GND
5	+24 V Supply
7 – 8	GND
9	RF Output 75 Ohm

Ordering Information

Part No.	Description
TAT8888	CATV GaN Power Doubler Hybrid

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Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	−40 to +100 °C
RF Input Power, CW, 75 Ω, T=+25 °C	+70 dBmV
Supply Voltage (V_{DD})	+30 V
Supply Current (I_{DD})	600 mA

Operation of this device outside the parameter ranges given above may cause permanent damage.

Recommended Operating Conditions

Parameter	Min	Typ	Max	Units
Supply Voltage (V_{DD})		24		V
Case Temperature	−30		+100	°C
Tj for >10^6 hours MTTF			160	°C

Electrical specifications are measured at specified test conditions. Specifications are not guaranteed over all recommended operating conditions.

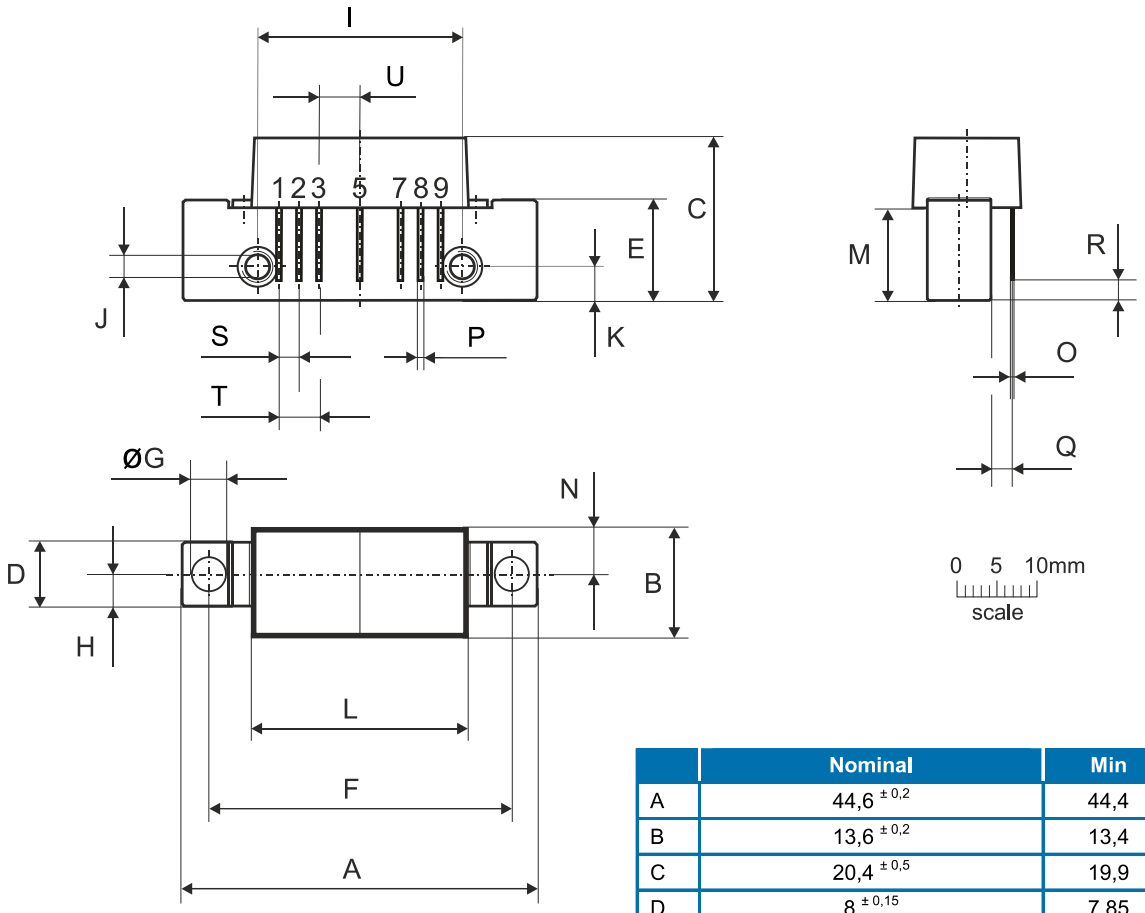
Typical Performance

Test conditions unless otherwise noted: V_{DD}=+24 V, 75 Ω System, Base Temp.=+35 °C.

Parameter	Conditions	Min	Typ	Max	Units
Operating Frequency		50		1000	MHz
Gain	f = 1000 MHz	23		24.5	dB
Gain Slope	50 to 1000 MHz	0.25		1.5	dB
Gain Flatness	Relative to Slope Line		±0.5	±0.8	dB
Input Return Loss	50 MHz to <550 MHz	18			dB
	>550 MHz to 1000 MHz	16			dB
Output Return Loss	50 MHz to 1000 MHz	18			dB
CSO	79 channels NTSC 75 channels QAM, -6 dB offset, +61 dBmV virtual output, 18 dB Tilt		−69	−65	dBc
CTB			−75	−69	dBc
XMOD			−65		dBc
CCN		55	58		dB
Output IP3	Pout= +19 dBm/tone, at 500 MHz Δf = 6 MHz		+53		dBm
Noise Figure			3.5		dB
Supply Current, I_{DD}			445	460	mA
Thermal Resistance, θ_{jc}	Junction to case		5		°C/W

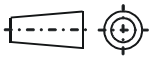
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Mechanical Specifications



Notes:

European Projection



	Nominal	Min	Max
A	44,6 ± 0,2	44,4	44,8
B	13,6 ± 0,2	13,4	13,8
C	20,4 ± 0,5	19,9	20,9
D	8 ± 0,15	7,85	8,15
E	12,6 ± 0,15	12,45	12,75
F	38,1 ± 0,2	37,9	38,3
G	4 +0,2 / -0,05	3,95	4,2
H	4 ± 0,2	3,8	4,2
I	25,4 ± 0,2	25,2	25,6
J	UNC 6-32	-	-
K	4,2 ± 0,2	4,0	4,4
L	27,2 ± 0,2	27,0	27,4
M	11,6 ± 0,5	11,1	12,1
N	5,8 ± 0,4	5,4	6,2
O	0,25 ± 0,02	0,23	0,27
P	0,45 ± 0,03	0,42	0,48
Q	2,54 ± 0,3	2,24	2,84
R	2,54 ± 0,5	2,04	3,04
S	2,54 ± 0,25	2,29	2,79
T	5,08 ± 0,25	4,83	5,33
U	5,08 ± 0,25	4,83	5,33

Pinning:

Pin	Name
1	Input
2-3	GND
4	
5	VDD
6	
7-8	GND
9	Output

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Contact Information

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