

1000 MHz CATV 34 dB POWER DOUBLER AMPLIFIER MODULE

1. Product profile

1.1 General description

High dynamic range power doubler amplifier module operating at a supply voltage of 24VDC in an SOT115 package, using a front push-pull amplifier and a cascaded power doubler MMIC with GaAs Technology from USA , adding ESD and surge protective devices.

CAUTION



This device is sensitive to Electro Static Discharge (ESD). Therefore care should be taken during transport and handling.

1.2 Features and benefits

- Excellent linearity
- Low noise
- Low return loss
- Rugged construction
- High reliability

1.3 Applications

- CATV systems operating in the 40 MHz to 1000 MHz frequency range.

1.4 Quick reference data

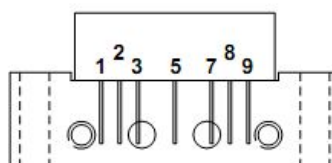
Bandwidth 40 MHz to 1000 MHz; $V_B = 24\text{ V}$; $T_{mb} = 30\text{ }^\circ\text{C}$; $Z_S = Z_L = 75\ \Omega$.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
G_p	power gain	$f = 50\text{ MHz}$	34.0	34.5	35.5	dB
		$f = 1000\text{ MHz}$	35.0	-	-	dB
I_{tot}	total current	$V_B = 24\text{ V}$	375	390	410	mA

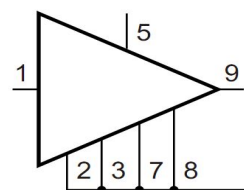
2. Pin information

Pin	Description
1	input
2	common
3	common
5	+ V_B
7	common
8	common
9	output

Simplified Outline



Graphic Symbol



3. Operating conditions

3.1 Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134) (TA = +25°C)

Parameter	Symbol	Min	Max	Unit
Supply Voltage	V _B	-	25	V
Input Voltage [1]	V _i	-	65	dBmV
Operating Case Temperature	T _C	-20	+80	°C
Storage Temperature	T _{stg}	-40	+100	°C

[1] In case of single tone

3.2 Recommended operating conditions (Z_S = Z_L = 75 Ω)

Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Unit
Supply Voltage	V _B		23.5	24.0	24.5	V
Operating Case Temperature	T _C		-20	+30	+60	°C

4. Electrical characteristics

(T_C = 30±5°C, V_B = 24 V, Z_S = Z_L = 75 Ω)

Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Unit
Power Gain	G _p	f = 50 MHz	34.0	34.5	35.5	dB
Gain Slope	S _L	f = 50 to 1000 MHz	0.5	1.0	2.5	dB
Gain Flatness	FL	f = 50 to 1000 MHz	-	-	±0.5	dB
Noise Figure	NF	f = 1000 MHz	-	4.0	7.0	dB
Operating Current	I _B	V _B =24VDC, RF OFF	375	390	410	mA
Composite Triple Beat	CTB	84 channels, V _O = 48 dBmV at 743.25 MHz, flat output level across the band	-	-64	-	dB
Cross Modulation	XM		-	-65	-	dB
Composite 2nd Order Beat	CSO		-	-66	-	dB
Input Return Loss	S ₁₁	f = 40 to 550 MHz	16	-	-	dB
		f = 550 to 1000 MHz	16	-	-	dB
Output Return Loss	S ₂₂	f = 40 to 550 MHz	16	-	-	dB
		f = 550 to 1000 MHz	15	-	-	dB

5. Package outline

Rectangular single-ended package; aluminum flange; 2 vertical mounting holes; 2 x 6-32 UNC and 2 extra horizontal mounting holes; 7 gold-plated in-line leads.

SOT115-B

