



FEATURES

- Excellent linearity
- Extremely low noise
- High gain
- Excellent return loss properties

PINNING - SOT115U

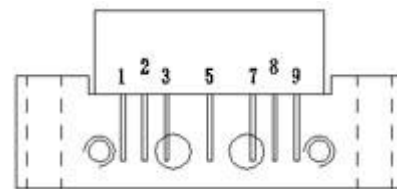
PIN	DESCRIPTION
1	input
2	common
3	common
5	+VB
7	common
8	common
9	output

APPLICATIONS

- Single module line extender in CATV systems operating in the 40 to 550 MHz frequency range.

DESCRIPTION

Hybrid high dynamic range integrated circuit operating at a supply voltage of 24 V (DC) in a SOT115J package. The module consists of two cascaded stages both in cascode Configuration.



Side view

Fig.1 Simplified outline

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G _p	power gain	f=50MHz	33.5	35.5	dB
		f=550MHz	35	-	dB
I _{tot}	total current consumption (DC)	V _B =24V	105	135	mA

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_B	supply voltage	-	25	V
V_i	RF input voltage	-	45	dBmV
T_{stg}	storage temperature	-40	+100	°C
T_{mb}	mounting base operating temperature	-20	+100	°C

 **CHARACTERISTICS**

Bandwidth 40 to 550 MHz; $V_B=24V$; $T_{case}=30^{\circ}C$; $Z_s=Z_L=75\Omega$

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G_p	power gain	f=50MHz	33.5	35	dB
		f=550MHz	35	-	dB
SL	slope cable equivalent	f=40 to 550 MHz	0.5	1.5	dB
FL	flatness of frequency response	f=40 to 550 MHz	-	±0.4	dB
S_{11}	input return losses	f=40 to 100 MHz	20	-	dB
		f=100 to 320 MHz	18	-	dB
		f=320 to 550 MHz	18	-	dB
S_{22}	output return losses	f=40 to 100 MHz	16	-	dB
		f=100 to 320 MHz	14	-	dB
		f=320 to 550 MHz	14	-	dB
CTB	composite triple beat	60 channels flat; $V_o=44dBmV$; measured at 543.25 MHz	-	-48	dB
X_{mod}	cross modulation	60 channels flat; $V_o=44dBmV$; measured at 49.75 MHz	-	-56	dB
CSO	composite second order distortion	60 channels flat; $V_o=44dBmV$; measured at 544.25 MHz	-	-48	dB
d_2	second order distortion	Note 1	-	-64	dB
V_o	output voltage	Dim= -60 dB; note 2	59.5	-	dBmV
F	noise figure	f =550MHZ	-	6.5	dB
PM	positive match	f=40 MHz to 2 GHz	-	3	dB
I_{tot}	total current consumption (DC)	Note 3	105	135	mA

Note :

1. $f_p=49.75\text{MHz}$; $V_p=44\text{dBmV}$;
 $f_q=495.25\text{MHz}$; $V_q=44\text{dBmV}$;
measured at $f_p+f_q=545\text{MHz}$.
2. Measured according to DIN45004B;
 $f_p=535.25\text{MHz}$; $V_p=V_o$;
 $f_q=543.25\text{MHz}$; $V_q=V_o-6\text{dB}$;
 $f_r=545.25\text{MHz}$; $V_r=V_o-6\text{dB}$;
measured at $f_p+f_r-f_q=537.25\text{MHz}$.
3. The module normally operates at $V_B=24\text{V}$, but is able to withstand supply transients up to 28 V.

 **PACKAGE OUTLINE**

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

