

**FEATURES**

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

**APPLICATIONS**

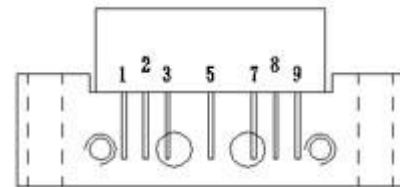
- Single module line extender in CATV systems operating in the 40 to 860 MHz frequency range.

**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.

**PINNING - SOT115U**

PIN	DESCRIPTION
1	Input
2	Common
3	Common
5	+VB
7	Common
8	Common
9	Output



Side view

**Fig.1 Simplified outline**

**QUICK REFERENCE DATA**

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G <sub>p</sub>	Power gain	f=50MHz	33.5	35	dB
		f=860MHz	35	-	dB
I <sub>tot</sub>	Total current consumption (DC)	V <sub>B</sub> =24V	105	135	mA

**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (1EC 134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
$V_B$	Supply voltage	-	25	V
$V_i$	RF input voltage	-	45	dBmV
$T_{stg}$	Storage temperature	-20	+100	°C
$T_{mb}$	Mounting base operating temperature	-20	+100	°C

 **CHARACTERISTICS**

Bandwidth 40 to 860 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=860MHz	35	-	dB
SL	Slope cable equivalent	f=40 to 860 MHz	+0.5	+2.5	dB
FL	Fflatness of frequency response	f=40 to 860 MHz	-	±0.5	dB
$S_{11}$	Input return losses	f=40 to 80 MHz	18	-	dB
		f=80 to 160 MHz	18	-	dB
		f=160 to 320 MHz	18	-	dB
		f=320 to 750 MHz	16	-	dB
		f=750 to 860 MHz	14	-	dB
$S_{22}$	Output return losses	f=40 to 80 MHz	16	-	dB
		f=80 to 160 MHz	14	-	dB
		f=160 to 320 MHz	14	-	dB
		f=320 to 750 MHz	14	-	dB
		f=750 to 860 MHz	14	-	dB
CTB	Composite triple beat	60 channels flat; $V_o=44dBmV$ ; measured at 534.25 MHz	-	-46	dB
$X_{mod}$	Cross modulation	60 channels flat; $V_o=44dBmV$ ; measured at 49.75 MHz	-	-62	dB
CSO	Composite second order distortion	60 channels flat; $V_o=44dBmV$ ; measured at 544.25 MHz	-	-48	dB
$d_2$	SAecond order distortion	Note1	-	-64	dB
$V_o$	Output voltage	Dim= -60 dB; note 2	57.0	-	dBmV

F	Noise figure	f =860MHZ	-	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.  $f_p=49.75\text{MHz}$ ;  $V_p=44\text{dBmV}$ ;  
 $f_q=8.7.25\text{MHz}$ ;  $V_q=44\text{dBmV}$ ;  
 measured at  $f_p+f_q=857.00\text{MHz}$ .
2. Measured according to DIN45004B;  
 $f_p=847.25\text{MHz}$ ;  $V_p=V_o$ ;  
 $f_q=855.25\text{MHz}$ ;  $V_q=V_o-6\text{dB}$ ;  
 $f_r=857.25\text{MHz}$ ;  $V_r=V_o-6\text{dB}$ ;  
 measured at  $f_p+f_r-f_q=849.25\text{MHz}$ .
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

