



**FEATURES**

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

**APPLICATIONS**

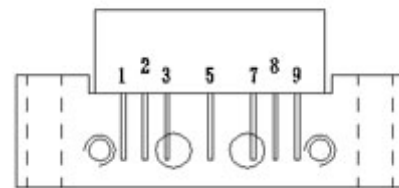
- Single module line extender in CATV systems operating in the 40 to 750 MHz frequency range.

**DESCRIPTION**

Hybrid high dynamic range amplifier module 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	33.3	34.7	dB
		f=750MHz	34.0	-	dB
I <sub>tot</sub>	total current consumption (DC)	V <sub>B</sub> =24V	210	245	mA

**LIMITING VALUES**

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
$V_B$	supply voltage	-	26	V
$V_i$	RF input voltage	-	45	dBmV
$T_{stg}$	storage temperature	-20	+100	
$T_{mb}$	mounting base operating temperature	-20	+100	

 **CHARACTERISTICS**

Bandwidth 40 to 750 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	33.3	34.7	dB
		f=750MHz	34.0	-	dB
SL	slope cable equivalent	f=40 to 750 MHz	0.5	2.0	dB
FL	flatness of frequency response	f=40 to 750 MHz	-	$\pm 0.4$	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 640 MHz	18	-	dB
		f=640 to 750 MHz	16	-	dB
$S_{22}$	output return losses	f=40 to 80 MHz	16	-	dB
		f=80 to 160 MHz	16	-	dB
		f=160 to 320 MHz	16	-	dB
		f=320 to 640 MHz	16	-	dB
		f=640 to 750 MHz	14	-	dB
CTB	composite triple beat	60 channels flat; $V_o=44dBmV$ ; measured at 543.25 MHz	-	-65	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	-	-67	dB
$d_2$	second order distortion	Note1	-	-64	dB
$V_o$	output voltage	Dim= -60 dB; note 2	59	-	dBmV
F	noise figure	f=750MHz	-	6.5	dB

$I_{tot}$	total current consumption (DC)	Note 3	210	245	mA
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**Note :**

1.  $f_p=49.75\text{MHz}$ ;  $V_p=44\text{dBmV}$ ;  
 $f_q=695.25\text{MHz}$ ;  $V_q=44\text{dBmV}$ ;  
 measured at  $f_p+f_q=745\text{MHz}$ .

2. Measured according to DIN45004B;  
 $f_p=735.25\text{MHz}$ ;  $V_p=V_o$ ;  
 $f_q=743.25\text{MHz}$ ;  $V_q=V_o-6\text{dB}$ ;  
 $f_r=745.25\text{MHz}$ ;  $V_r=V_o-6\text{dB}$ ;  
 measured at  $f_p+f_r-f_q=737.25\text{MHz}$ .

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

