



FEATURES

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

APPLICATIONS

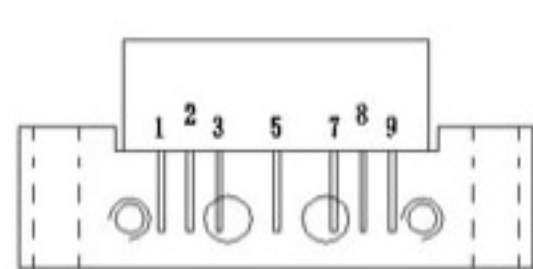
- Single module line extender in CATV systems operating in the 40 to 750 MHz frequency range.

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_p	power gain	$f=50\text{MHz}$	33.5	35	dB
		$f=750\text{MHz}$	35	-	dB
I_{tot}	total current consumption (DC)	$V_B=24\text{V}$	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	$^{\circ}\text{C}$
T_{mb}	mounting base operating temperature	-20	+100	$^{\circ}\text{C}$

CHARACTERISTICS

Bandwidth 40 to 750 MHz; $V_B=24\text{V}$; $T_{case}=30^{\circ}\text{C}$; $Z_S=Z_L=75\Omega$

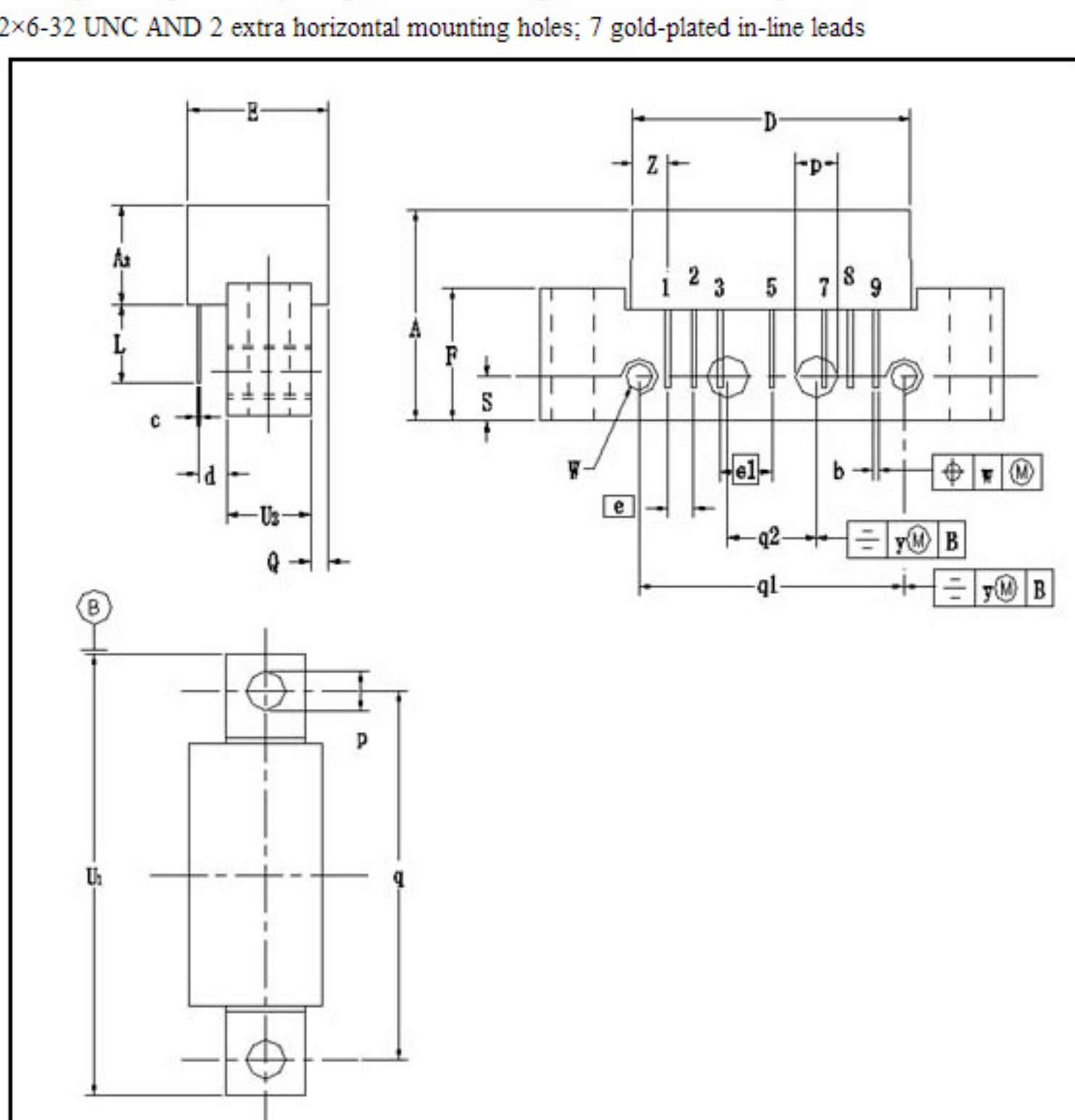
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G_p	power gain	$f=50\text{MHz}$	33.5	35	dB
		$f=750\text{MHz}$	35	-	dB
SL	slope cable equivalent	$f=50$ to 750 MHz	0.5	2.5	dB
FL	flatness of frequency response	$f=50$ to 750 MHz	-	± 0.4	dB
S_{11}	input return losses	$f=50$ to 100 MHz	18	-	dB
		$f=100$ to 160 MHz	18	-	dB
		$f=160$ to 300 MHz	18	-	dB
		$f=300$ to 650 MHz	18	-	dB
		$f=650$ to 750 MHz	16	-	dB
S_{22}	output return losses	$f=50$ to 100 MHz	16	-	dB
		$f=100$ to 160 MHz	16	-	dB
		$f=160$ to 300 MHz	16	-	dB
		$f=300$ to 650 MHz	16	-	dB
		$f=650$ to 750 MHz	14	-	dB
CTB	composite triple beat	60 channels flat; $V_o=44\text{dBmV}$; measured at 543.25 MHz	-	-46	dB
X_{mod}	cross modulation	60 channels flat; $V_o=44\text{dBmV}$; measured at 49.75 MHz	-	-62	dB
CSO	composite second order distortion	60 channels flat; $V_o=44\text{dBmV}$; measured at 544.5 MHz	-	-48	dB
d_2	second order distortion	Note 1	-	-64	dB
V_o	output voltage	Dim= -60 dB; note 2	58	-	dBmV
F	noise figure	$f=750\text{MHz}$	-	6.5	dB
I_{tot}	total current consumption (DC)	Note 3	105	135	mA

Notes:

- $f_p=49.75\text{MHz}$; $V_p=44\text{dBmV}$;
 $f_q=695.25\text{MHz}$; $V_q=44\text{dBmV}$;
measured at $f_p+f_q=745\text{MHz}$.
- 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 $f_p+f_r-f_q=737.25\text{MHz}$.
- 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; 2x6-32 UNC AND 2 extra horizontal mounting holes; 7 gold-plated in-line leads



DIMENSIONS (mm are the original dimension)

UNIT	A	A2	b	c	D	d	E	e	e1	F	L	φP	Q	q	q1	q2	S	U1	U2	W	w	y	Z
mm	max.	max.	0.55 0.45	0.25	27.2	3.5	13.75	2.54	5.08	12.7	8.2	4.2 3.8	2.4	38.1	25.4	10.2	4.2	45.2	8	6-32UNC OR: M4	0.25	0.1	4.0