75MHz CATV 25dB Reverse Amplifier Module

1. Product profile

1.1 General description

Hybrid high dynamic range amplifier module designed for applications in CATV systems. with a bandwidth of 5 MHz to 75 MHz operating at a voltage supply of 24 V (DC) in a SOT115 package.

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

1.3 Applications

- Reverse amplifier in two-way CATV systems.

1.4 Quick reference data

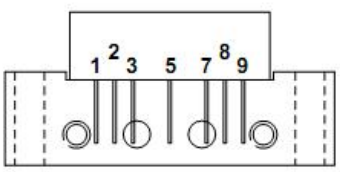
Bandwidth 5 MHz to 75 MHz; V_B = 24 V; T_{mb} = 30 °C; Z_S = Z_L = 75 Ω .

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
G_p	power gain	f = 10 MHz	24.5	25.0	26.0	dB
I_{tot}	total current	V_B = 24 V	130	145	160	mA

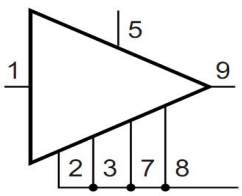
2. Pin information

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]	Vi	-	65	dBmV
Operating Case Temperature	Tc	–20	+100	°C
Storage Temperature	Tstg	–40	+100	°C

[1] In case of single tone

3.2 Recommended operating conditions ($Z_S = Z_L = 75\ \Omega$)

Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Unit
Supply Voltage	V_B		23.5	24.0	24.5	V
Operating Case Temperature	Tc		−20	+25	+80	°C

4. Electrical characteristics

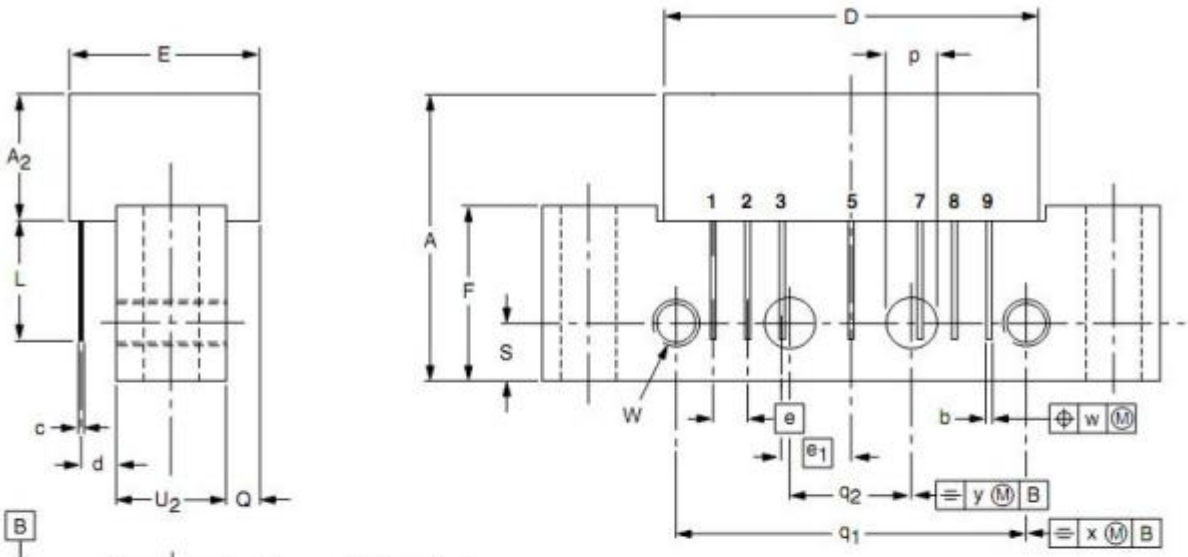
(T_C = 30±5°C, V_B = 24 V, $Z_S = Z_L$ = 75 Ω) *0*

Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Unit
Power Gain	Gp	f = 10 MHz	24.5	25.0	26.0	dB
Gain Slope	SL	f = 5 to 75MHz	-0.2	0.2	0.8	dB
Gain Flatness	FL	f = 5 to 75 MHz	–	–	±0.3	dB
Noise Figure	NF	f = 75 MHz	–	4.0	6.0	dB
Operating Current	IB	VB=24VDC，RF OFF	130	145	160	mA
Composite Triple Beat	CTB	4 channels, flat output level across the band VO = 50dBmV at 57.75 MHz,	–	−70	–	dB
Cross Modulation	XM		–	−68	–	dB
Composite 2nd Order Beat	CSO		–	−72	–	dB
Input Return Loss	S11	f = 5 to 75MHz	17	–	–	dB
Output Return Loss	S22	f = 5 to 75 MHz	17	–	–	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-A



PROJECTION	OUTLINE
	SOT115-A

Note:
Dimension "E" and "Q" are different from SOT115J

DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A_2 max.	b	c	D max.	d	E max.	e	e_1	F	L min.	p	Q max.	q	q_1	q_2	S	U_1 max.	U_2	W	w	x	y
mm	21.5	9.5	0.51 0.38	0.25	27.2	2.54	16	2.54	5.08	12.7	8.0	4.15 3.85	3.5	38.1	25.4	10.2	4.2	**44.8**	8.2 7.8	6-32 UNC	0.25	0.7	0.1

UNIT: mm