

# OM7650

550 MHz, 34 dB gain push-pull amplifier

Rev. 01 — 31 May 2006

Product data sheet

## 1. Product profile

### 1.1 General description

Hybrid high dynamic range amplifier module in SOT115BA package operating at a supply voltage of 24 V (DC).

#### CAUTION



This device is sensitive to ElectroStatic Discharge (ESD). Therefore care should be taken during transport and handling.

### 1.2 Features

- Excellent linearity
- Extremely low noise
- High gain
- Silicon nitride passivation
- Rugged construction
- TiPtAu metallized crystals ensure excellent reliability
- Surface mount transformers

### 1.3 Applications

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

### 1.4 Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$G_p$	power gain	$f = 50 \text{ MHz}$	33.0	-	35.0	dB
		$f = 550 \text{ MHz}$	33.2	-	-	dB
$I_{\text{tot}}$	total current	$V_B = 24 \text{ V}$	[1] 300	-	340	mA

[1] The module normally operates at  $V_B = 24 \text{ V}$ , but is able to withstand supply transients up to 30 V.

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## 2. Pinning information

Table 2. Pinning

Pin	Description	Simplified outline	Symbol
1	input		
2	common		
3	common		
5	+V <sub>B</sub>		
7	common		
8	common		
9	output		

## 3. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
OM7650	-	rectangular single-ended package; aluminium flange; 2 vertical mounting holes; 2 × 6-32 UNC; 7 Sn-plated in-line leads	SOT115BA

## 4. Marking

Table 4. Marking

Type number	Marking
OM7650	INDI 50

## 5. Limiting values

Table 5. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
V <sub>i</sub>	input voltage		-	55	dBmV
T <sub>stg</sub>	storage temperature		-40	+100	°C
T <sub>mb</sub>	mounting base temperature		-20	+100	°C

## 6. Characteristics

**Table 6. Characteristics**

Bandwidth 40 MHz to 550 MHz;  $V_B = 24\text{ V}$ ;  $T_{case} = 35\text{ °C}$ ;  $Z_S = Z_L = 75\ \Omega$  unless otherwise specified.

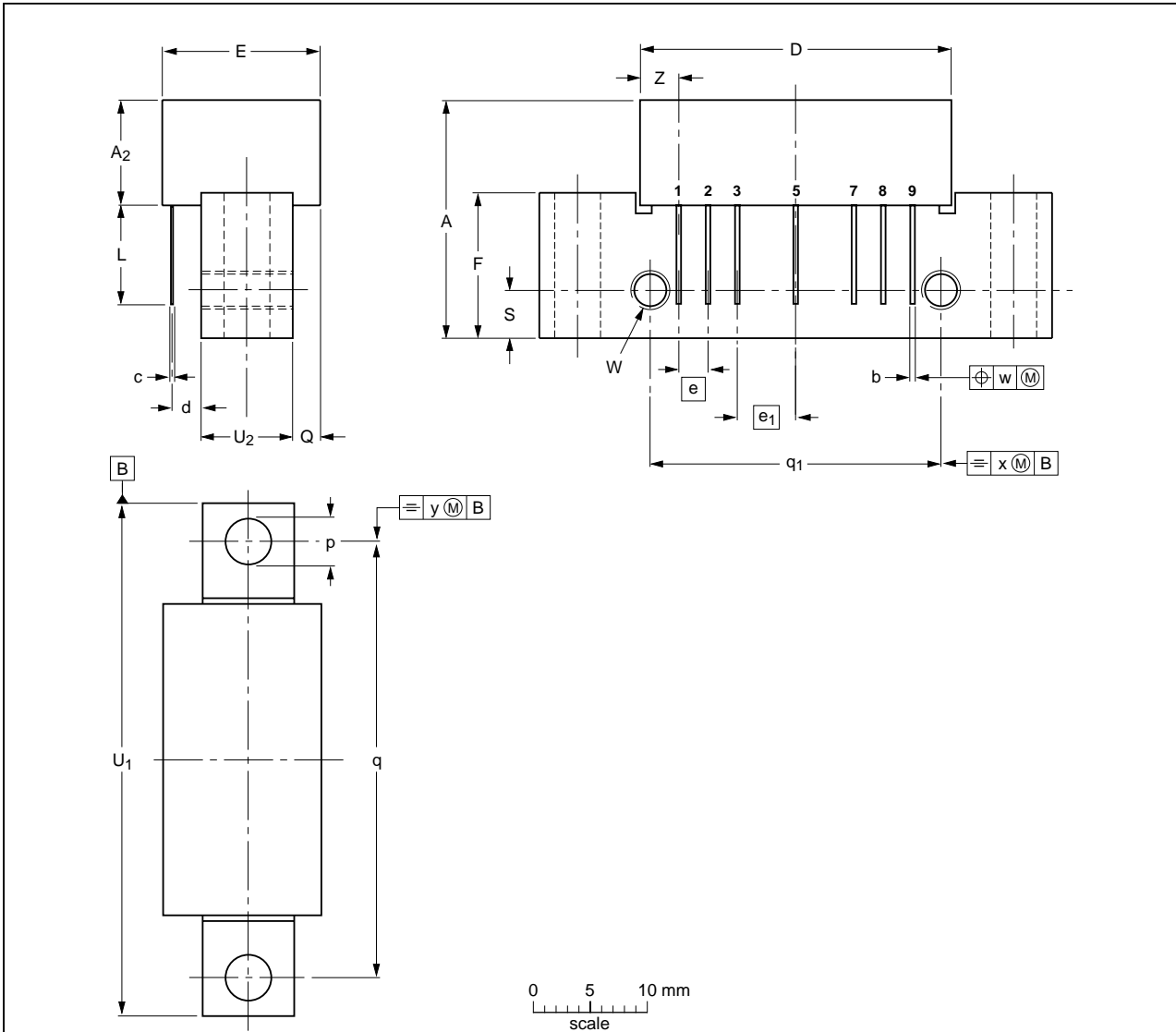
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$G_p$	power gain	$f = 50\text{ MHz}$	33.0	-	35.0	dB
		$f = 550\text{ MHz}$	33.2	-	-	dB
SL	slope cable equivalent	$f = 40\text{ MHz to }550\text{ MHz}$	0.2	-	2.0	dB
FL	flatness of frequency response	$f = 40\text{ MHz to }550\text{ MHz}$	-	-	$\pm 0.5$	dB
$S_{11}$	input return losses	$f = 40\text{ MHz to }160\text{ MHz}$	15	-	-	dB
		$f = 160\text{ MHz to }550\text{ MHz}$	10	-	-	dB
$S_{22}$	output return losses	$f = 40\text{ MHz to }160\text{ MHz}$	15	-	-	dB
		$f = 160\text{ MHz to }550\text{ MHz}$	10	-	-	dB
CTB	composite triple beat	77 channels flat; $V_o = 44\text{ dBmV}$ ; measured at 547.25 MHz	-	-	-45	dB
CSO	composite second-order distortion	77 channels flat; $V_o = 44\text{ dBmV}$ ; measured at 548.5 MHz	-	-	-57	dB
NF	noise figure	$f = 50\text{ MHz}$	-	-	8	dB
$I_{tot}$	total current	$V_B = 24\text{ V}$	[1] 300	-	340	mA

[1] The module normally operates at  $V_B = 24\text{ V}$ , but is able to withstand supply transients up to 30 V.

7. Package outline

Rectangular single-ended package; aluminium flange; 2 vertical mounting holes; 2 x 6-32 UNC; 7 Sn-plated in-line leads

SOT115BA



DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A <sub>2</sub> max.	b	c	D max.	d max.	E max.	e	e <sub>1</sub>	F	L min.	p	Q max.	q	q <sub>1</sub>	S	U <sub>1</sub>	U <sub>2</sub>	W	w	x	y	Z max.
mm	20.8	9.1	0.51 0.38	0.25	27.2	2.54	13.75	2.54	5.08	12.7	8.8	4.15 3.85	2.4	38.1	25.4	4.2	44.75 44.25	8.2 7.8	6-32 UNC	0.25	0.7	0.1	3.8

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
SOT115BA					05-06-15 05-11-11

Fig 1. Package outline SOT115BA

## 8. Revision history

Table 7. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
OM7650_1	20060531	Product data sheet	-	-

## 9. Legal information

### 9.1 Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

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