

DATA SHEET

BGE788

CATV amplifier module

Preliminary specification
File under Discrete Semiconductors, SC16

1997 May 05

CATV amplifier module

BGE788

FEATURES

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

APPLICATIONS

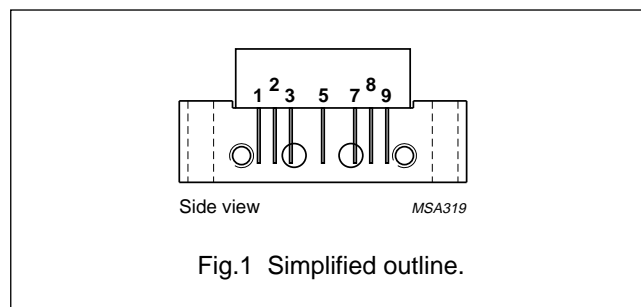
- Single module line extender in CATV systems operating over a frequency range of 40 to 750 MHz.

DESCRIPTION

The BGE788 is a hybrid high dynamic range amplifier module operating at a voltage supply of +24 V in a SOT115J package. The high gain module consists of two cascaded stages both in cascode configuration.

PINNING SOT115J

PIN	DESCRIPTION
1	input
2, 3	common
5	+V _B
7, 8	common
9	output



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G _p	power gain	f = 50 MHz	33.5	34.5	dB
		f = 750 MHz	34	–	dB
I _{tot}	total current consumption (DC)	V _B = +24 V	–	320	mA

LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V _i	RF input voltage	–	55	dBmV
T _{mb}	operating mounting-base temperature	–20	+100	°C
T _{stg}	storage temperature	–40	+100	°C

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BGE788

CHARACTERISTICSBandwidth 40 to 750 MHz; $V_B = +24$ V; $T_{case} = 30$ °C; $Z_S = Z_L = 75$ Ω.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G _p	power gain	f = 50 MHz	33.5	34.5	dB
		f = 750 MHz	34	–	dB
SL	slope cable equivalent	f = 40 to 750 MHz	0.5	2.5	dB
FL	flatness of frequency response	f = 40 to 750 MHz	–	±0.5	dB
S ₁₁	input return losses	f = 40 to 80 MHz	20	–	dB
		f = 80 to 160 MHz	18.5	–	dB
		f = 160 to 320 MHz	17	–	dB
		f = 320 to 640 MHz	15.5	–	dB
		f = 640 to 750 MHz	14	–	dB
S ₂₂	output return losses	f = 40 to 80 MHz	20	–	dB
		f = 80 to 160 MHz	18.5	–	dB
		f = 160 to 320 MHz	17	–	dB
		f = 320 to 640 MHz	15.5	–	dB
		f = 640 to 750 MHz	14	–	dB
S ₂₁	phase response	f = 50 MHz	135	225	deg
CTB	composite triple beat	110 channels flat; V _o = 44 dBmV; measured at 745.25 MHz	–	–49	dB
X _{mod}	cross modulation	110 channels flat; V _o = 44 dBmV; measured at 55.25 MHz	–	–51	dB
CSO	composite second order distortion	110 channels flat; V _o = 44 dBmV; measured at 746.5 MHz	–	–52	dB
d ₂	second order distortion	note 1	–	–64	dB
V _o	output voltage	d _{im} = –60 dB; note 2	58	–	dBmV
F	noise figure	f = 750 MHz	–	7	dB
PM	positive match	f = 40 MHz to 2 GHz	–	3	dB
I _{tot}	total current consumption	note 3	290	320	mA

Notes

1. $f_p = 55.25$ MHz; $V_p = 44$ dBmV;
 $f_q = 691.25$ MHz; $V_q = 44$ dBmV;
measured at $f_p + f_q = 746.5$ MHz.
2. Measured according to DIN45004B:
 $f_p = 740.25$ MHz; $V_p = V_o$;
 $f_q = 747.25$ MHz; $V_q = V_o - 6$ dB;
 $f_r = 749.25$ MHz; $V_r = V_o - 6$ dB;
measured at $f_p + f_q - f_r = 738.25$ MHz.
3. The module normally operates at $V_B = +24$ V, but is able to withstand supply transients up to +30 V.

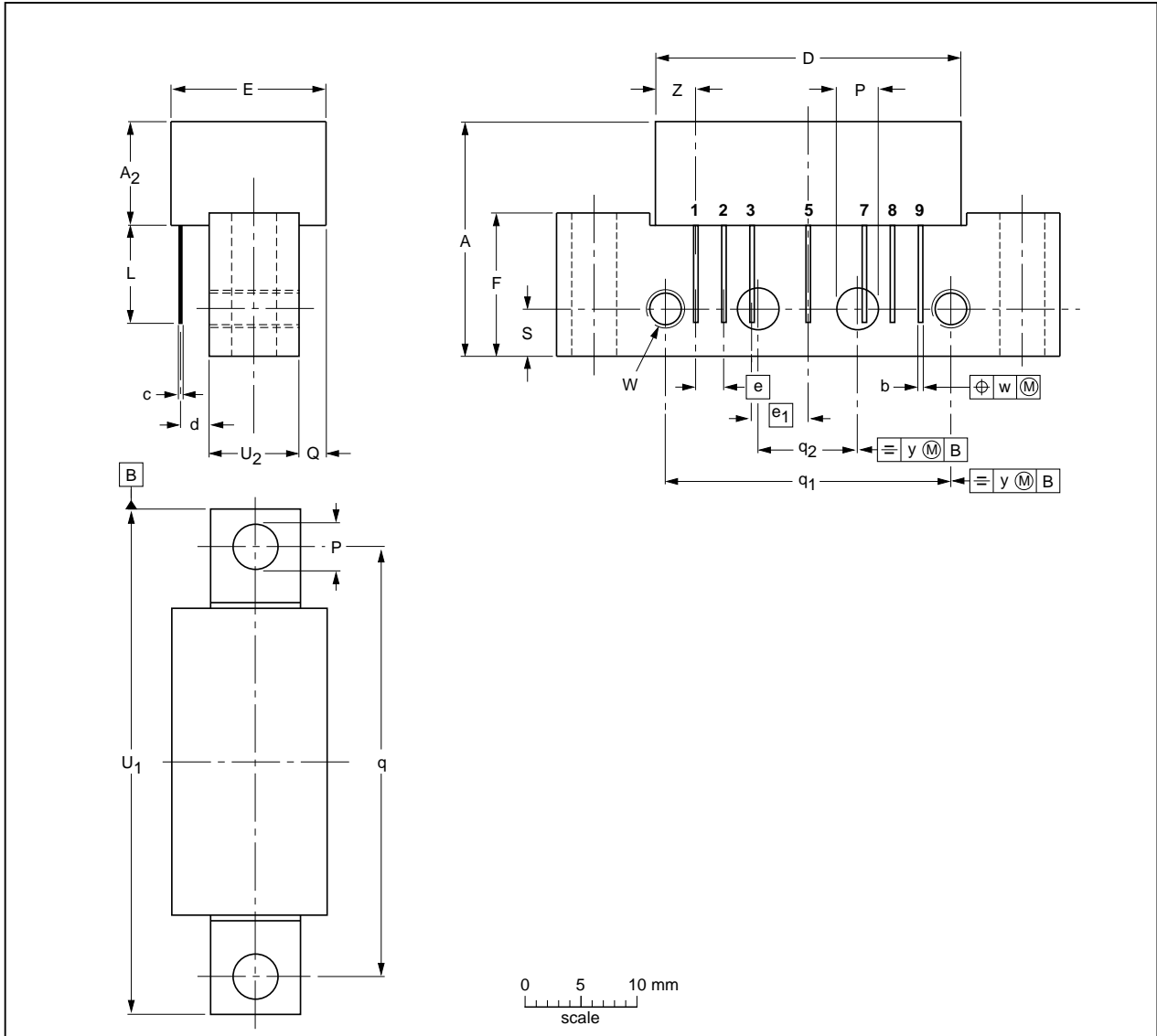
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BGE788

PACKAGE OUTLINE

Plastic rectangular single-ended flat package; flange mounted (2 vertical mounting holes; 2 x 6-32 UNC and 2 extra horizontal mounting holes); 7 gold-plated in-line leads

SOT115J



DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A ₂ max.	b	c	D max.	d max.	E max.	e	e ₁	F	L min.	∅ P	Q max.	q	q ₁	q ₂	S	U ₁ max.	U ₂	W	w	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	10.2	4.2	44.75	8	6-32 UNC	0.25	0.1	3.8

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT115J						97-04-10

CATV amplifier module

BGE788

DEFINITIONS

Data Sheet Status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

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CATV amplifier module

BGE788

NOTES

CATV amplifier module

BGE788

NOTES

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