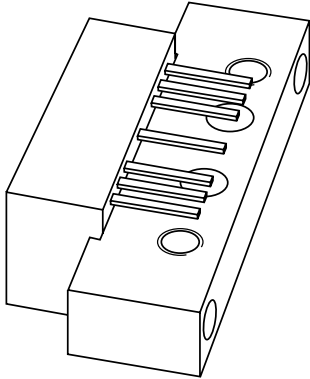


DATA SHEET



BGD714 CATV amplifier module

Preliminary specification

1999 Oct 22

CATV amplifier module

BGD714

FEATURES

- Excellent linearity
- Extremely low noise
- Excellent return loss properties
- Silicon nitride passivation
- Rugged construction
- Gold metallization ensures excellent reliability.

APPLICATIONS

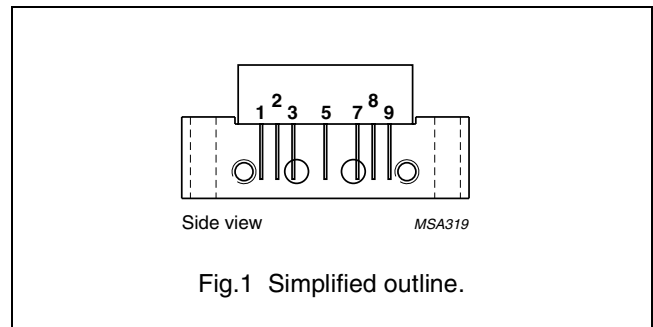
- CATV systems operating in the 40 to 750 MHz frequency range.

DESCRIPTION

Hybrid amplifier modules in a SOT115J package operating with a voltage supply of 24 V (DC).

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	20	20.6	dB
		f = 750 MHz	20.8	–	dB
I _{tot}	total current consumption (DC)	V _B = 24 V	380	410	mA

LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V _B	supply voltage	–	30	V
V _i	RF input voltage	–	70	dBmV
T _{stg}	storage temperature	–40	+100	°C
T _{mb}	operating mounting base temperature	–20	+100	°C

CATV amplifier module

BGD714

CHARACTERISTICSBandwidth 40 to 750 MHz; $V_B = 24$ V; $T_{mb} = 35$ °C; $Z_S = Z_L = 75 \Omega$

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G _p	power gain	f = 50 MHz	20	–	20.6	dB
		f = 750 MHz	20.8	–	–	dB
SL	slope straight line	f = 45 to 750 MHz	0.5	–	1.5	dB
FL	flatness straight line	f = 45 to 750 MHz	–	–	±0.5	dB
S ₁₁	input return losses	f = 40 to 80 MHz	23	–	–	dB
		f = 80 to 160 MHz	23	–	–	dB
		f = 160 to 320 MHz	21	–	–	dB
		f = 320 to 550 MHz	20	–	–	dB
		f = 550 to 650 MHz	20	–	–	dB
		f = 650 to 750 MHz	19	–	–	dB
S ₂₂	output return losses	f = 40 to 80 MHz	23	–	–	dB
		f = 80 to 160 MHz	23	–	–	dB
		f = 160 to 320 MHz	21	–	–	dB
		f = 320 to 550 MHz	20	–	–	dB
		f = 550 to 650 MHz	20	–	–	dB
		f = 650 to 750 MHz	19	–	–	dB
S ₂₁	phase response	f = 50 MHz	–45	–	+45	deg
CTB	composite triple beat	112 chs flat; V _o = 44 dBmV; f _m = 745.25 MHz	–	–	–61	dB
		79 chs flat; V _o = 44 dBmV; f _m = 547.25 MHz	–	–	–68	dB
		79 chs; f _m = 445.25 MHz; V _o = 49.3 dBmV at 547 MHz; note 1	–	–	–62	dB
X _{mod}	cross modulation	112 chs flat; V _o = 44 dBmV; f _m = 55.25 MHz	–	–	–62	dB
		79 chs flat; V _o = 44 dBmV; f _m = 55.25 MHz	–	–	–68	dB
		79 chs; f _m = 745.25 MHz; V _o = 49.3 dBmV at 547 MHz; note 1	–	–	–58	dB
CSO	composite second order distortion	112 chs flat; V _o = 44 dBmV; f _m = 746.5 MHz	–	–	–63	dB
		79 chs flat; V _o = 44 dBmV; f _m = 548.5 MHz	–	–	–68	dB
		79 chs; f _m = 746.5 MHz; V _o = 49.3 dBmV at 547 MHz; note 1	–	–	–60	dB
d ₂	second order distortion	note 2	–	–	–70	dB
V _o	output voltage	d _{im} = –60 dB; note 3	62	–	–	dBmV

CATV amplifier module

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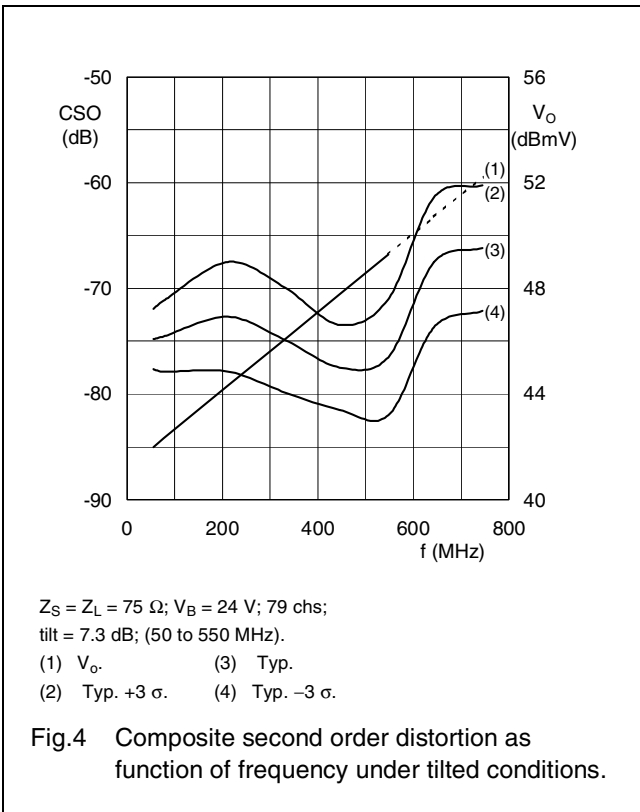
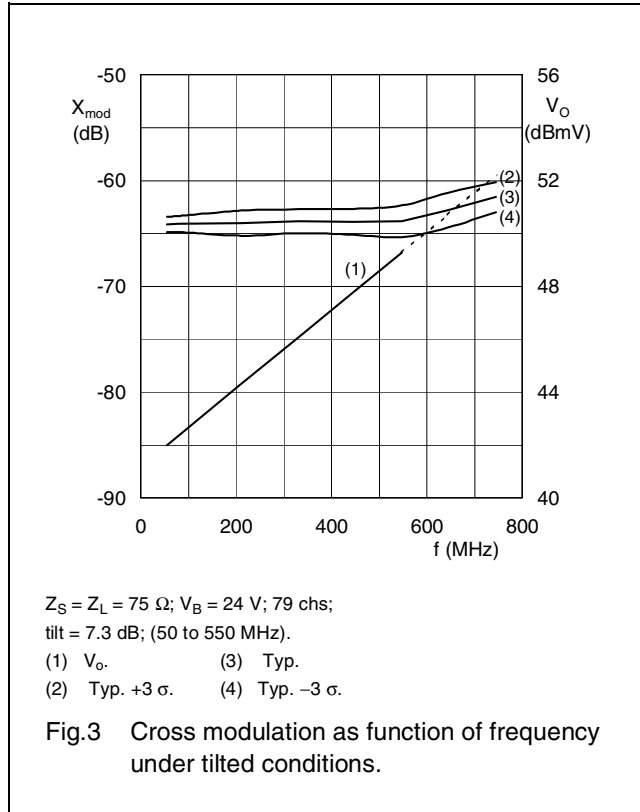
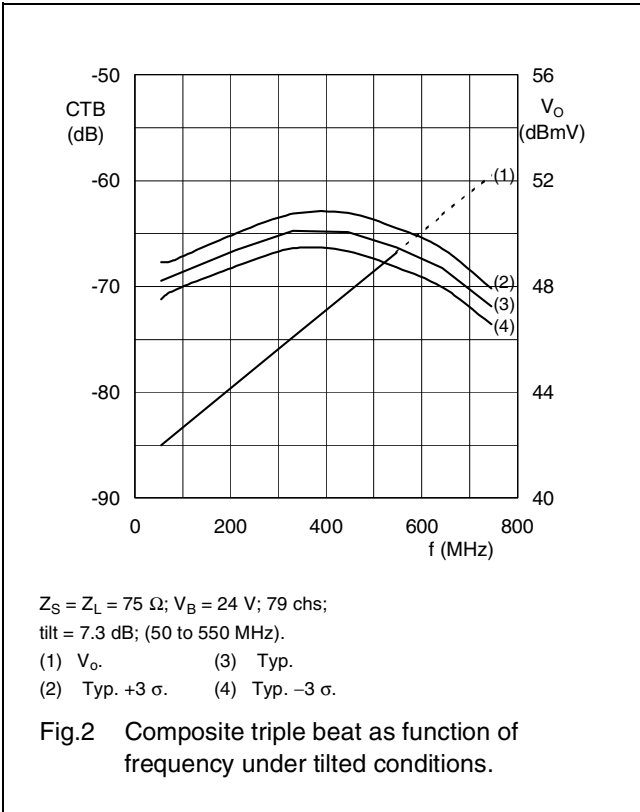
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
NF	noise figure	f = 50 MHz	–	–	5.5	dB
		f = 450 MHz	–	–	5.5	dB
		f = 550 MHz	–	–	5.5	dB
		f = 600 MHz	–	–	6.5	dB
		f = 750 MHz	–	–	7.5	dB
I_{tot}	total current consumption (DC)	note 4	380	–	410	mA

Notes

- Tilt = 7.3 dB (55 to 547 MHz).
- $f_p = 55.25$ MHz; $V_p = 44$ dBmV;
 $f_q = 691.25$ MHz; $V_q = 44$ dBmV;
 measured at $f_p + f_q = 746.5$ MHz.
- 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.
- The module normally operates at $V_B = 24$ V, but is able to withstand supply transients up to 30 V.

CATV amplifier module

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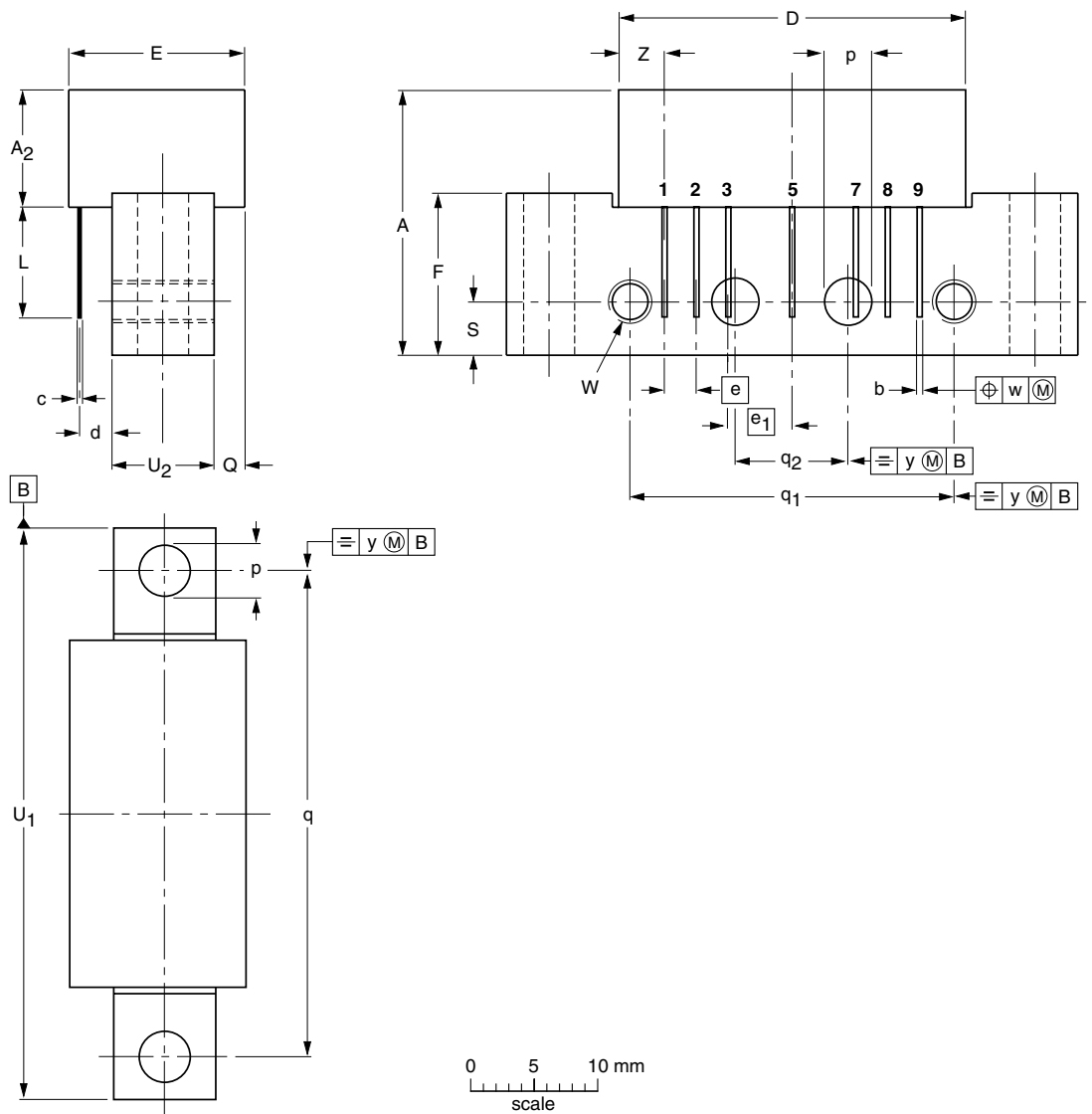
CATV amplifier module

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PACKAGE OUTLINE

Rectangular single-ended package; aluminium flange; 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						99-02-06

CATV amplifier module

BGD714

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.	

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