

CATV amplifier module

BGD508

FEATURES

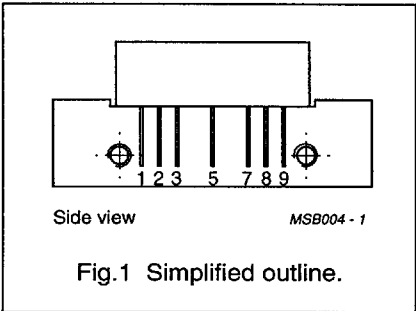
- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- Gold metallization ensures excellent reliability.

DESCRIPTION

Hybrid amplifier module for CATV systems operating over a frequency range of 40 to 550 MHz at a voltage supply of 24 V (DC).

PINNING - SOT115C

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



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G _p	power gain	f = 50 MHz	35	37	dB
		f = 550 MHz	36.5	—	dB
I _{tot}	total current consumption (DC)	V _B = 24 V	—	625	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 _{stg}	storage temperature	−40	+100	°C
T _{mb}	operating mounting base temperature	−20	+100	°C

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CHARACTERISTICS

Bandwidth 40 to 550 MHz; $V_B = 24$ V; $T_{mb} = 35$ °C; $Z_S = Z_L = 75$ Ω .

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G_p	power gain	$f = 50$ MHz	35	37	dB
		$f = 550$ MHz	36.5	–	dB
SL	slope cable equivalent	$f = 40$ to 550 MHz	0.2	2.2	dB
FL	flatness of frequency response	$f = 40$ to 550 MHz	–	± 0.4	dB
S_{11}	input return losses	$f = 40$ to 80 MHz	20	–	dB
		$f = 80$ to 160 MHz	19	–	dB
		$f = 160$ to 550 MHz	18	–	dB
S_{22}	output return losses	$f = 40$ to 80 MHz	20	–	dB
		$f = 80$ to 160 MHz	19	–	dB
		$f = 160$ to 550 MHz	18	–	dB
S_{21}	phase response	$f = 50$ MHz	–45	+45	deg
CTB	composite triple beat	77 channels flat; $V_o = 44$ dBmV; measured at 547.25 MHz	–	–62	dB
X_{mod}	cross modulation	77 channels flat; $V_o = 44$ dBmV; measured at 55.25 MHz	–	–65	dB
CSO	composite second order distortion	77 channels flat; $V_o = 44$ dBmV; measured at 548.5 MHz	–	–60	dB
d_2	second order distortion	note 1	–	–70	dB
V_o	output voltage	$d_{im} = -60$ dB; note 2	63	–	dBmV
F	noise figure	$f = 550$ MHz	–	7.5	dB
I_{tot}	total current consumption (DC)	note 3	–	625	mA

Notes

- $f_p = 55.25$ MHz; $V_p = 46$ dBmV;
 $f_q = 393.25$ MHz; $V_q = 46$ dBmV;
measured at $f_p + f_q = 548.5$ MHz.
- Measured according to DIN45004B:
 $f_p = 440.25$ MHz; $V_p = V_o$;
 $f_q = 447.25$ MHz; $V_q = V_o - 6$ dB;
 $f_r = 449.25$ MHz; $V_r = V_o - 6$ dB;
measured at $f_p + f_q - f_r = 438.25$ MHz.
- The module normally operates at $V_B = 24$ V, but is able to withstand supply transients up to 30 V.

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CHARACTERISTICS

Bandwidth 40 to 450 MHz; $V_B = 24$ V; $T_{mb} = 35$ °C; $Z_S = Z_L = 75$ Ω .

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G_p	power gain	$f = 50$ MHz	35	37	dB
		$f = 450$ MHz	36.5	–	dB
SL	slope cable equivalent	$f = 40$ to 450 MHz	0.2	2.2	dB
FL	flatness of frequency response	$f = 40$ to 450 MHz	–	± 0.4	dB
S_{11}	input return losses	$f = 40$ to 80 MHz	20	–	dB
		$f = 80$ to 160 MHz	19	–	dB
		$f = 160$ to 450 MHz	18	–	dB
S_{22}	output return losses	$f = 40$ to 80 MHz	20	–	dB
		$f = 80$ to 160 MHz	19	–	dB
		$f = 160$ to 450 MHz	18	–	dB
S_{21}	phase response	$f = 50$ MHz	–45	+45	deg
CTB	composite triple beat	60 channels flat; $V_o = 46$ dBmV; measured at 445.25 MHz	–	–64	dB
X_{mod}	cross modulation	60 channels flat; $V_o = 46$ dBmV; measured at 55.25 MHz	–	–65	dB
CSO	composite second order distortion	60 channels flat; $V_o = 46$ dBmV measured at 446.5 MHz	–	–62	dB
d_2	second order distortion	note 1	–	–73	dB
V_o	output voltage	$d_{im} = -60$ dB; note 2	67	–	dBmV
F	noise figure	$f = 450$ MHz	–	7	dB
I_{tot}	total current consumption (DC)	note 3	–	625	mA

Notes

- $f_p = 55.25$ MHz; $V_p = 46$ dBmV;
 $f_q = 391.25$ MHz; $V_q = 46$ dBmV;
measured at $f_p + f_q = 446.5$ MHz.
- Measured according to DIN45004B:
 $f_p = 440.25$ MHz; $V_p = V_o$;
 $f_q = 447.25$ MHz; $V_q = V_o - 6$ dB;
 $f_r = 449.25$ MHz; $V_r = V_o - 6$ dB;
measured at $f_p + f_q - f_r = 438.25$ MHz.
- The module normally operates at $V_B = 24$ V, but is able to withstand supply transients up to 30 V.