CATV power doubler amplifier modules — BGD102; BGD104

FEATURES

- Excellent linearity
- High output level
- Silicon nitride passivation
- Rugged construction
- TiPtAu metallized crystals ensure optimal reliability.

DESCRIPTION

Power doubler amplifier modules for CATV systems operating over a frequency range of 40 to 450 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

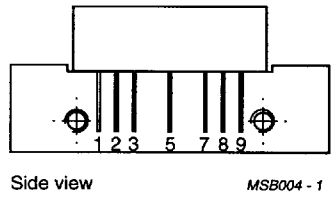

Fig.1 Simplified outline.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G_p	power gain	f = 50 MHz			
	BGD102		18	19	dB
	BGD104		19.5	20.5	dB
	power gain	f = 450 MHz			
	BGD102		19.2	21.2	dB
	BGD104		20.5	22.5	dB
I_{tot}	total current consumption (DC)	V_B = 24 V	–	435	mA

LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_i	RF input voltage	–	60	dBmV
T_{stg}	storage temperature	–40	+100	°C
T_{mb}	operating mounting base temperature	–20	+100	°C

CHARACTERISTICS

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

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SL	slope cable equivalent	f = 40 to 450 MHz	0.5	2.5	dB
FL	flatness of frequency response	f = 40 to 450 MHz	–	±0.3	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	+135	+225	deg-
CTB	composite triple beat	60 channels flat;			
	BGD102	V_o = 46 dBmV;	–	–65	dB
	BGD104	measured at 445.25 MHz	–	–64	dB
X_{mod}	cross modulation	60 channels flat;			
	BGD102	V_o = 46 dBmV;	–	–67	dB
	BGD104	measured at 55.25 MHz	–	–66	dB
d_2	second order distortion	note 1	–	–73	dB
V_o	output voltage	d_{im} = –60 dB; note 2			
	BGD102		65	–	dBmV
	BGD104		64.5	–	dBmV
F	noise figure	f = 40 to 450 MHz	–	7	dB
I_{tot}	total current consumption (DC)	note 3	–	435	mA

Notes

1. f_p = 55.25 MHz; V_o = 46 dBmV;
   f_q = 343.25 MHz; V_q = 46 dBmV;
   measured at $f_p + f_q$ = 398.5 MHz.
2. 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.
3. The modules normally operate at V_B = 24 V, but are able to withstand supply transients up to 30 V.