

Product Specification

R2005240

Si Reverse, 5 – 200MHz, 24.6dB typ. Gain @ 200MHz, 235A max. @ 24VDC



FEATURES

- Excellent linearity
- Superior return loss performance
- Extremely low distortion
- Optimal reliability
- Low noise
- Unconditionally stable under all terminations

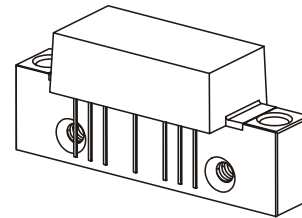
APPLICATION

- 5 to 200 MHz CATV amplifier for reverse channel systems

DESCRIPTION

- Hybrid reverse amplifier employing silicon dice

R2005240



Si Reverse Hybrid

5 – 200 MHz
24.6dB typ. Gain @ 200MHz
235mA max. @ 24VDC

LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_i	RF input voltage (single tone)	-	70	dBmV
V_{ov}	DC supply over-voltage (5 minutes)	-	30	V
T_{stg}	storage temperature	- 40	+ 100	°C
T_{mb}	operating mounting base temperature	- 30	+ 100	°C

CHARACTERISTICS

Table 1: S-Parameter, Noise Figure, DC Current; $V_B = 24V$; $T_{mb} = 30^\circ C$; $Z_S = Z_L = 75 \Omega$

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G_p	power gain	f = 5 MHz	23.9	24.4	24.9	dB
		f = 200 MHz	23.7	24.6	-	dB
SL	slope ¹⁾	f = 5 to 200 MHz	-0.2	0.2	0.5	dB
FL	flatness of frequency response	f = 5 to 200 MHz	-		± 0.2	dB
S_{11}	input return loss	f = 5 to 200 MHz	20.0		-	dB
S_{22}	output return loss	f = 5 to 200 MHz	20.0		-	dB
F	noise figure	f = 200 MHz	-	2.7	3.5	dB
I_{tot}	total current consumption (DC)		225.0	228.0	235.0	mA

Notes:

1) The slope is defined as the difference between the gain at the start frequency and the gain at the stop frequency.

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CHARACTERISTICS

Table 2: Distortion data 5 – 200 MHz; $V_B = 24V$; $T_{mb} = 30^\circ C$; $Z_S = Z_L = 75 \Omega$

SYMBOL	PARAMETER	CONDITION	MIN.	TYP.	MAX.	UNIT
CTB	composite triple beat	22 ch. flat; $V_o = 50 \text{ dBmV}$ ¹⁾	-		- 69	dBc
XMOD	cross modulation	22 ch. flat; $V_o = 50 \text{ dBmV}$ ¹⁾	-		- 60	dB
CSO	composite second order	22 ch. flat; $V_o = 50 \text{ dBmV}$ ¹⁾	-		- 67	dBc
d_2	second order distortion	²⁾			- 67	dBc
V_o	output voltage	$D_{im} = -60 \text{ dB}$ ³⁾	64.0			dBmV

Notes:

- 1) 22 channels, NTSC frequency raster: T7 – T13 (7.0 to 43.0 MHz), 2 - 6 (55.25 – 83.25 MHz), A – 7 (121.25 – 175.25MHz), +50 dBmV flat output level.
- 2) $f_1 = 83.25 \text{ MHz}$; $V_1 = 50 \text{ dBmV}$; $f_2 = 109.25 \text{ MHz}$; $V_2 = 50 \text{ dBmV}$; $f_{TEST} = f_1 + f_2 = 192.5 \text{ MHz}$.
- 3) $f_1 = 187.25 \text{ MHz}$; $V_1 = 50 \text{ dBmV}$; $f_2 = 194.25 \text{ MHz}$; $V_2 = V_1 - 6\text{dB}$; $f_3 = 196.25 \text{ MHz}$; $V_3 = V_1 - 6\text{dB}$; $f_{TEST} = f_1 + f_2 - f_3 = 185.25 \text{ MHz}$, according to DIN45004B.

Composite Second Order (CSO)

The CSO parameter (both sum and difference products) is defined by the NCTA.

Composite Triple Beat (CTB)

The CTB parameter is defined by the NCTA.

Cross Modulation (XMOD)

Cross modulation (XMOD) is measured at baseband (selective voltmeter method), referenced to 100% modulation of the carrier being tested.

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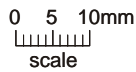


All Dimensions in mm:

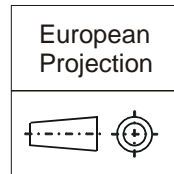
	nominal	min	max
A	44,6 ± 0,2	44,4	44,8
B	13,6 ± 0,2	13,4	13,8
C	20,4 ± 0,5	19,9	20,9
D	8 ± 0,15	7,85	8,15
E	12,6 ± 0,15	12,45	12,75
F	38,1 ± 0,2	37,9	38,3
G	4 +0,2 / -0,05	3,95	4,2
H	4 ± 0,2	3,8	4,2
I	25,4 ± 0,2	25,2	25,6
J	UNC 6-32	-	-
K	4,2 ± 0,2	4,0	4,4
L	27,2 ± 0,2	27,0	27,4
M	11,6 ± 0,5	11,1	12,1
N	5,8 ± 0,4	5,4	6,2
O	0,25 ± 0,02	0,23	0,27
P	0,45 ± 0,03	0,42	0,48
Q	2,54 ± 0,3	2,24	2,84
R	2,54 ± 0,5	2,04	3,04
S	2,54 ± 0,25	2,29	2,79
T	5,08 ± 0,25	4,83	5,33
U	5,08 ± 0,25	4,83	5,33

Pinning:

	1	2	3	4	5	6	7	8	9
INPUT									
GND									
GND									
+VB									
GND									
GND									
OUTPUT									



Notes:



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DEFINITIONS

Data Sheet Status	
Objective Product Specification	This data sheet contains target or goal specifications for product development.
Preliminary Product 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 60134). 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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