Product Specification

R0605300L1

Si Reverse, low current, 5 – 65MHz, 30.5dB typ. Gain @ 65MHz, 135mA max. @ 24VDC

FEATURES

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

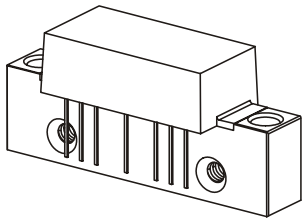
APPLICATION

- 5 to 65 MHz CATV amplifier for reverse channel systems

DESCRIPTION

- Hybrid reverse amplifier employing silicon die

R0605300L1



Si Reverse Hybrid , low current
5 – 65 MHz
30.5dB typ. Gain @ 65 MHz
135mA 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)	-	65	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°C; Z_S = Z_L = 75 Ω

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G_p	power gain	f = 5 MHz	30.0	30.4	30.8	dB
		f = 65 MHz	29.8	30.5	-	dB
SL	slope [1)]	f = 5 to 65 MHz	-0.2	0.1	0.4	dB
FL	flatness of frequency response	f = 5 to 65 MHz	-		± 0.3	dB
S_{11}	input return loss	f = 5 to 65 MHz	20.0		-	dB
S_{22}	output return loss	f = 5 to 65 MHz	20.0		-	dB
F	noise figure	f = 65 MHz	-	2.3	3.0	dB
I_{tot}	total current consumption (DC)		130.0	133	135.0	mA

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

CHARACTERISTICS

Table 2: Distortion data 5 – 65 MHz; V_B = 24V; T_{mb} = 30°C; Z_S = Z_L = 75 Ω

SYMBOL	PARAMETER	CONDITION	MIN.	TYP.	MAX.	UNIT
CTB	composite triple beat	7 ch. flat; Vo = 50 dBmV [1)]	-		- 64	dBc
XMOD	cross modulation	7 ch. flat; Vo = 50 dBmV [1)]	-		- 55	dB
CSO	composite second order distortion	7 ch. flat; Vo = 50 dBmV [1)]	-		- 68	dBc
d_2	second order distortion	[2)]			- 70	dBc
STB	third order distortion	[3)]			- 66	dBc

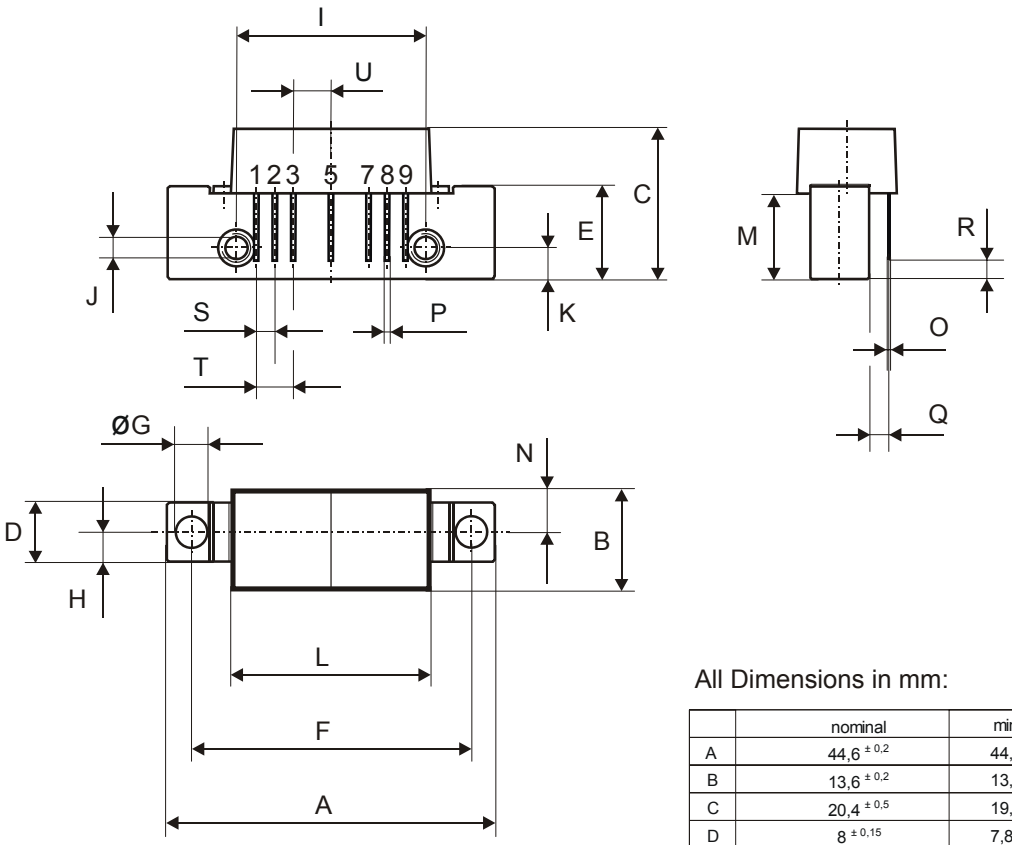
Notes:

1) 7 channels, US frequency raster: T7 – T13 (7.0 to 43.0 MHz), +50 dBmV flat output level.
2) f_1 = 7 MHz; V_1 = 50 dBmV; f_2 = 25 MHz; V_2 = 50 dBmV; f_{TEST} = f_1 + f_2 = 32 MHz.
3) f_1 = 13 MHz; V_1 = 50 dBmV; f_2 = 25 MHz; V_2 = V_1; f_3 = 7 MHz; V_3 = V_1; f_{TEST} = f_1 + f_2 - f_3 = 31 MHz.

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

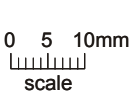
Composite Triple Beat (CTB)
The CTB parameter is defined by the NCTA.

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



All Dimensions in mm:

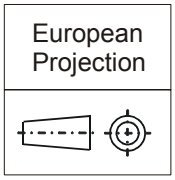
	nominal	min	max
A	44,6 ± 0,2	44,4	44,8
B	13,6 ± 0,2	13,4	13,8
C	20,4 ± 0,5	19,9	20,9
D	8 ± 0,15	7,85	8,15
E	12,6 ± 0,15	12,45	12,75
F	38,1 ± 0,2	37,9	38,3
G	4 +0,2 / -0,05	3,95	4,2
H	4 ± 0,2	3,8	4,2
I	25,4 ± 0,2	25,2	25,6
J	UNC 6-32	-	-
K	4,2 ± 0,2	4,0	4,4
L	27,2 ± 0,2	27,0	27,4
M	11,6 ± 0,5	11,1	12,1
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:



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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How to contact us:

Premier Devices Germany GmbH

Loeffelholzstrasse 20, D-90441 Nuernberg, Germany
Phone: +49 (0) 911 9411 233, FAX: +49 (0) 911 9411 198,
Email: sales.germany@premierdevices.com, Internet: http://www.premierdevices.de/