RFMD
rfmd.com

R0605300L

5-65 MHz Si REVERSE HYBRID, LOW CURRENT

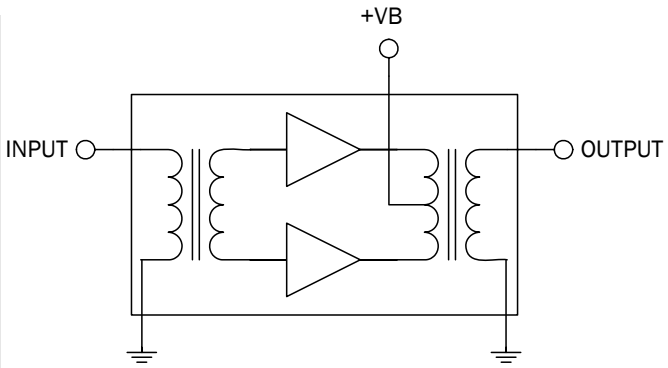
Package: SOT-115J

Product Description

The R0605300L is a hybrid reverse amplifier. The part employs silicon die. It has extremely low distortion and superior return loss performance. The part also provides optimal reliability with low noise and is well suited for 5 MHz to 65 MHz CATV amplifiers for reverse channel systems.

Optimum Technology Matching® Applied

- ☐ GaAs HBT
- ☐ GaAs MESFET
- ☐ InGaP HBT
- ☐ SiGe BiCMOS
- ☐ Si BiCMOS
- ☐ SiGe HBT
- ☐ GaAs pHEMT
- ☐ Si CMOS
- ☑ Si BJT
- ☐ GaN HEMT
- ☐ RF MEMS



Features

- Excellent Linearity
- Superior Return Loss Performance
- Extremely Low Distortion
- Optimal Reliability
- Low Noise
- Unconditionally Stable Under All Terminations
- 30.2 dB Typ. Gain at 65 MHz
- 140 mA Max. at 24 VDC

Applications

- 5 MHz to 65 MHz CATV Amplifier For Reverse Channel Systems

Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Overall					S-Paramter, Noise Figure, DC Current, V_B= 24 V; T_{MB}=30 °C; Z_S=Z_L=75Ω
Power Gain	29.5	30.0	30.5	dB	f=5 MHz
	29.3	30.5		dB	f=65 MHz
Slope [1]	-0.2	0.1	0.4	dB	f=5 MHz to 65 MHz
Flatness of Frequency Response			±0.3	dB	f=5 MHz to 65 MHz
Input Return Loss	20.0			dB	f=5 MHz to 65 MHz
Output Return Loss	20.0			dB	f=5 MHz to 65 MHz
Noise Figure		1.8	3.0	dB	f=65 MHz
Total Current Consumption (DC)	125.0	130.0	140.0	mA	
Distortion data 5 MHz to 65 MHz					
CTB			-64	dBc	7 ch flat; V_O=50 dBmV[2]
XMOD			-55	dB	7 ch flat; V_O=50 dBmV[2]
CSO			-68	dBc	7 ch flat; V_O=50 dBmV[2]
d_2			-70	dBc	[3]
STB			-66	dB	[4]

1. The slope is defines as the difference between the gain at the start frequency and the gain at the stop frequency.
2. 7 channels, US frequency raster: T7-T13(7.0 MHz to 43.0 MHz), +50 dBmV flat output level.
3. f_1=7 MHz; V_1=50 dBmV; f_2=25 MHz; V_2=50 dBmV; f_{TEST}=f_1+f_2=32 MHz.
4. 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) - Measured at baseband (selective voltmeter method), referenced to 100% modulation of the carrier being tested.

7628 Thorndike Road, Greensboro, NC 27409-9421 · For sales or technical support, contact RFMD at (+1) 336-678-5570 or sales-support@rfmd.com.

RFMD
rfmd.com

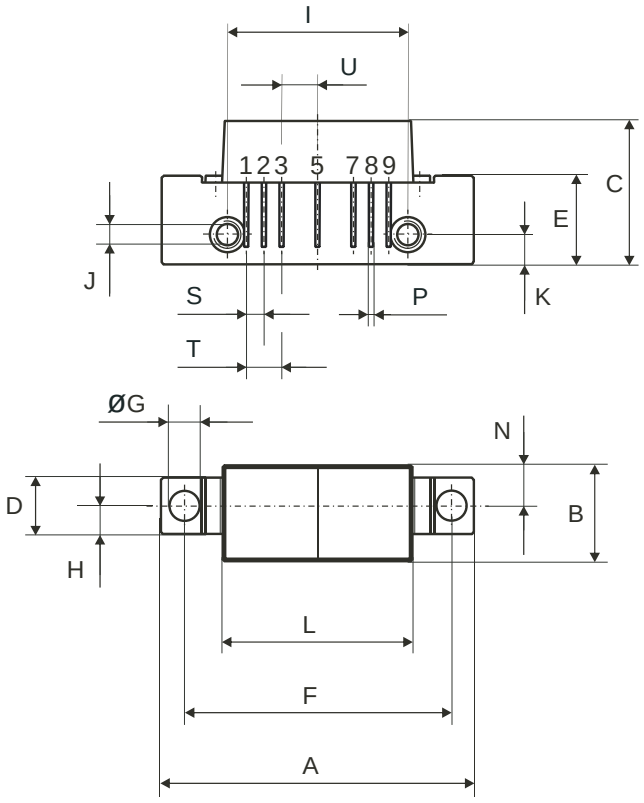
Absolute Maximum Ratings

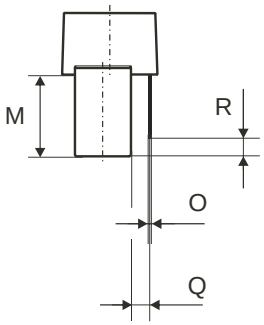
Parameter	Rating	Unit
RF Input Voltage (single tone)	65	dBmV
DC Supply Over-Voltage (5 minutes)	30	V
Storage Temperature	-40 to +100	°C
Operating Mounting Base Temperature	-30 to +100	°C

Caution! ESD sensitive device.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

RoHS status based on EU Directive 2002/95/EC (at time of this document revision).

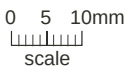




All Dimensions in mm:

	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:

7628 Thorndike Road, Greensboro, NC 27409-9421 · For sales or technical support, contact RFMD at (+1) 336-678-5570 or sales-support@rfmd.com.