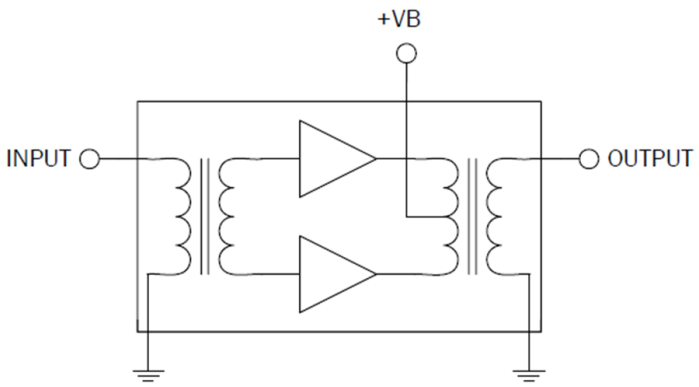
R3005250L

25dB Reverse Hybrid
5MHz to 300MHz (Low Current)



Package: SOT-115J

The R3005250L is a hybrid reverse amplifier. The part employs a 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 5MHz to 300MHz CATV amplifiers for reverse channel systems.



Features

- Excellent Linearity
- Superior Return Loss Performance
- Extremely Low Distortion
- Optimal Reliability
- Low Noise
- Unconditionally Stable Under All Terminations
- 25.3dB Typical Gain at 300MHz
- 140mA Max. at $24V_{DC}$

Applications

- Broadband/CATV
- 5MHz to 300MHz CATV Amplifier For Reverse Channel Systems

Ordering Information

R3005250L	Box with 50 pieces

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.

RoHS (Restriction of Hazardous Substances): Compliant per EU Directive 2011/65/EU.

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.

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Nominal Operating Parameters

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
General Performance					**V+ = 24V; T_{MB} = 30°C; Z_S = Z_L = 75Ω**
Operating Frequency Range	5		300	MHz	
Power Gain	24.5	25.1	25.5	dB	f = 5MHz
	24.3	25.3		dB	f = 300MHz
Slope[1]	-0.3	0.2	1.0	dB	f = 5MHz to 300MHz
Flatness of Frequency Response			±0.4	dB	f = 5MHz to 300MHz
Input Return Loss	-20			dB	f = 5MHz to 200MHz
	-18			dB	f = 200MHz to 300MHz
Output Return Loss	-20			dB	f = 5MHz to 300MHz
	-18			dB	f = 200MHz to 300MHz
Noise Figure		5.6	5.8	dB	f = 300MHz
Total Current Consumption (DC)	130.0	138.0	140.0	mA	
Distortion Data 5MHz to 300MHz					**V+ = 24V; T_{MB} = 30°C; Z_S = Z_L = 75Ω**
CTB			-71	dBc	7 ch flat; V_0 = 50dBmV[2]
		-62	-59	dBc	42 ch flat; V_0 = 44dBmV[3]
XMOD			-63	dBc	7 ch flat; V_0 = 50dBmV[2]
		-63	-60	dBc	42 ch flat; V_0 = 44dBmV[3]
CSO			-75	dBc	7 ch flat; V_0 = 50dBmV[2]
		-70	-64	dBc	42 ch flat; V_0 = 44dBmV[3]

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

2. 7 channels, NTSC frequency raster: T7-T13 (7.0MHz to 43MHz) +50dBmV flat output level.

3. 42 channels, NTSC frequency raster: T7-T13 (7.0MHz to 43MHz), 2-6 (55.25MHz to 83.25MHz), A-W / 7-13 (121.25MHz to 295.25MHz), +44dBmV flat output level.

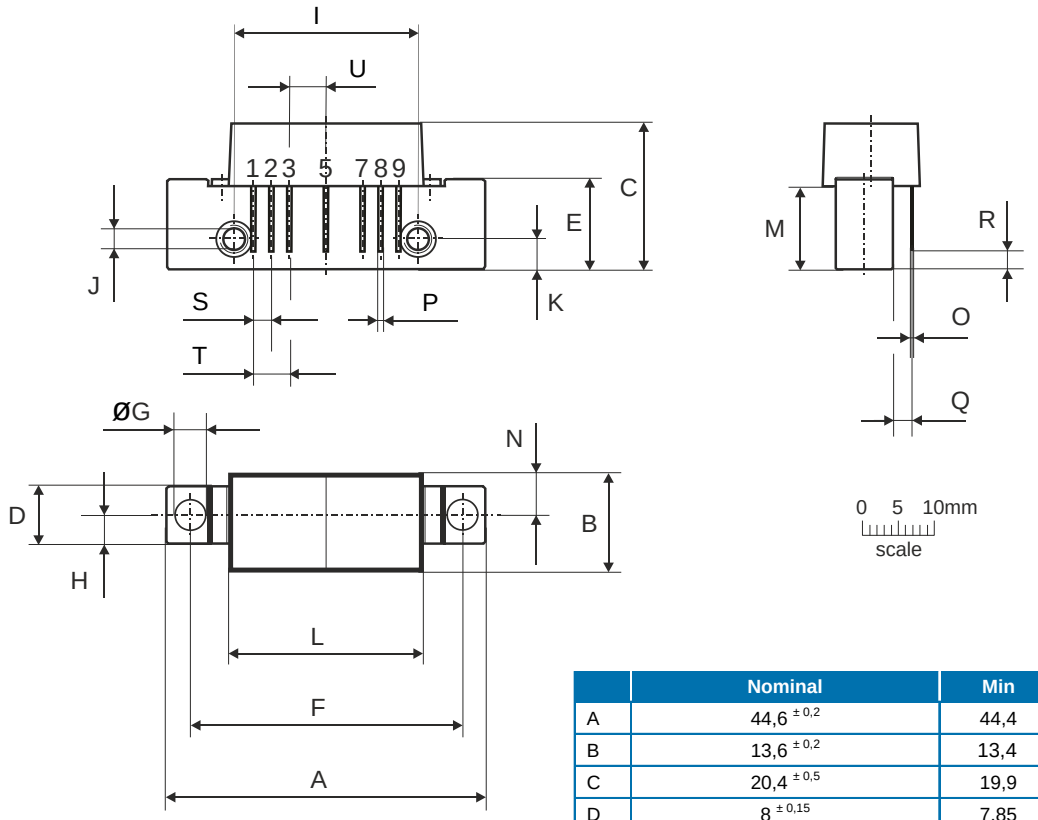
Composite Second Order (CSO) - The CSO parameter (both sum and difference products) is defined by the NCTA.

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.

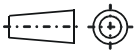
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Package Drawing (Dimensions in millimeters)



Notes:

European Projection



Pinning:

Pin	Name
1	Input
2-3	GND
4	
5	+VB
6	
7-8	GND
9	Output

	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

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