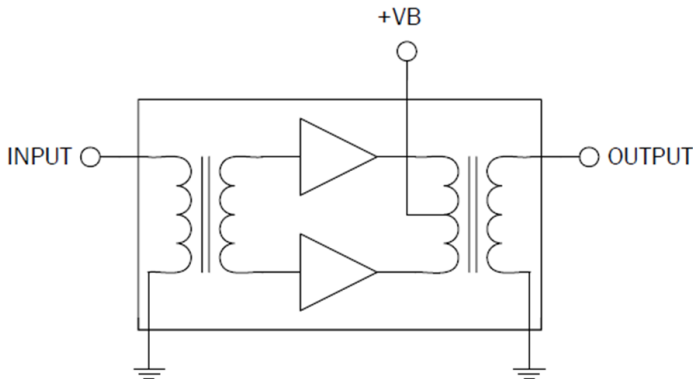


# R0605300L

30dB Reverse Hybrid  
5MHz to 65MHz (Low Current)

The R0605300L 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 65MHz CATV amplifiers for reverse channel systems.



## Ordering Information

R0605300L 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   |



Package: SOT-115J

## Features

- Excellent Linearity
- Superior Return Loss Performance
- Extremely Low Distortion
- Optimal Reliability
- Low Noise
- Unconditionally Stable Under All Terminations
- 30.25dB Typical Gain at 65MHz
- 140mA Max. at 24VDC

## Applications

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



**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.

## Nominal Operating Parameters

| Parameter                            | Specification |       |       | Unit | Condition   |
|--------------------------------------|---------------|-------|-------|------|---|
|                                      | Min           | Typ   | Max   |      |   |
| <b>General Performance</b>           |               |       |       |      | <b>V+ = 24V; T<sub>MB</sub> = 30°C; Z<sub>S</sub> = Z<sub>L</sub> = 75Ω</b> |
| Power Gain                           | 29.5          | 30.25 | 30.5  | dB   | f = 5MHz  |
|                                      | 29.3          | 30.25 |       | dB   | f = 65MHz   |
| Slope <sup>[1]</sup>                 | -0.2          | 0     | 0.4   | dB   | f = 5MHz to 65MHz   |
| Flatness of Frequency Response       |               |       | ±0.3  | dB   | f = 5MHz to 65MHz (peak to valley)  |
| Input Return Loss                    | -20.0         |       |       | dB   | f = 5MHz to 65MHz   |
| Output Return Loss                   | -20.0         |       |       | dB   |   |
| Noise Figure                         |               | 4.1   | 4.3   | dB   | f = 65MHz   |
| Total Current Consumption (DC)       | 125.0         | 133   | 140.0 | mA   |   |
| <b>Distortion Data 5MHz to 65MHz</b> |               |       |       |      | <b>V+ = 24V; T<sub>MB</sub> = 30°C; Z<sub>S</sub> = Z<sub>L</sub> = 75Ω</b> |
| CTB                                  |               |       | -64   | dBc  | 7 ch flat; V <sub>0</sub> = 50dBmV <sup>[2]</sup>                           |
| XMOD                                 |               |       | -55   | dBc  |   |
| CSO                                  |               |       | -68   | dBc  |   |

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

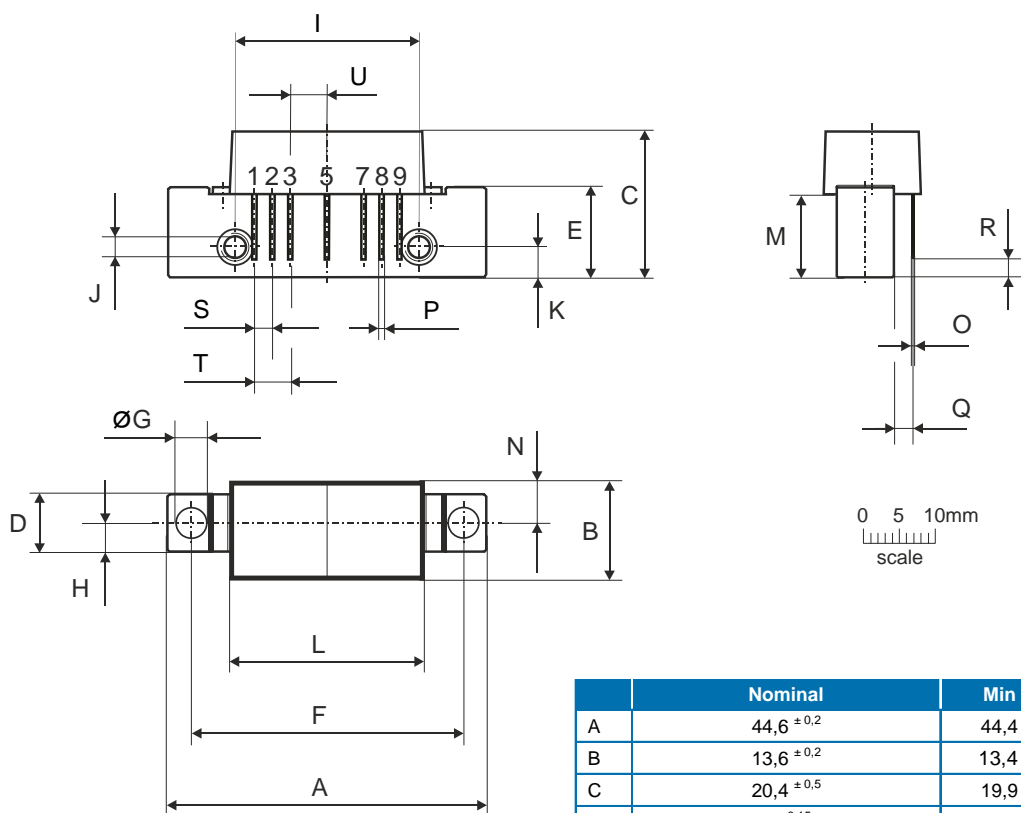
2. 7 channels, NTSC frequency raster: T7 - T13 (7.0MHz to 43.0MHz), +50dBmV flat output level.

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.

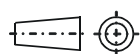
Cross Modulation (XMOD) - Cross modulation (XMOD) is measured at baseband (selective voltmeter method), referenced to 100% modulation of the carrier being tested.

# 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 <sup>+0,2 / -0,05</sup> | 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  |