



S10040200P

CATV Push Pull Hybrid 1000MHz 20dB

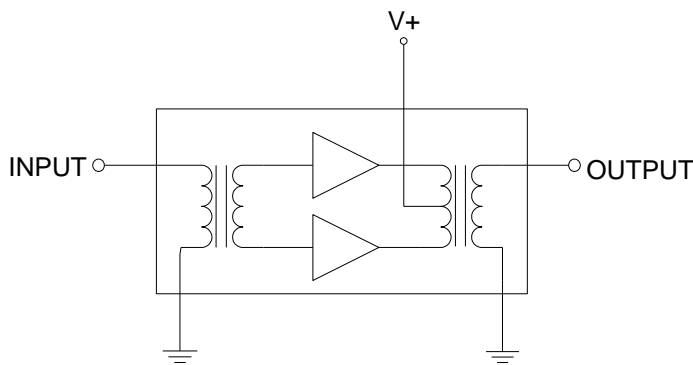
Product Description

The S10040200P is a Hybrid Push Pull amplifier module. The part employs GaAs/GaN die and is operated from 40 MHz to 1000 MHz. It provides excellent linearity and superior return loss performance with low noise and optimal reliability.



Package: SOT-115J

Functional Block Diagram



Product Features

- Excellent Linearity
- Superior Return Loss Performance
- Extremely Low Distortion
- Optimal Reliability
- Extremely Low Noise
- Unconditionally Stable Under all Terminations
- 20.0 dB Min Gain at 1000 MHz
- 260 mA Max. at 24 VDC

Applications

- 40 – 1000 MHz CATV Amplifier Systems

Ordering Information

| Part No. | Description |
|------------|-----------------|
| S10040200P | Box with 50 pcs |
| | |
| | |
| | |
| | |
| | |

S10040200P Absolute Maximum Ratings

| Parameter | Value / Range |
|-------------------------------------|---------------|
| RF Input Voltage (single tone) | 75 dBmV |
| DC Supply over-voltage (5 minutes) | +30 V |
| Storage Temperature | -40 to 100 °C |
| Operating Mounting Base Temperature | -30 to 100 °C |

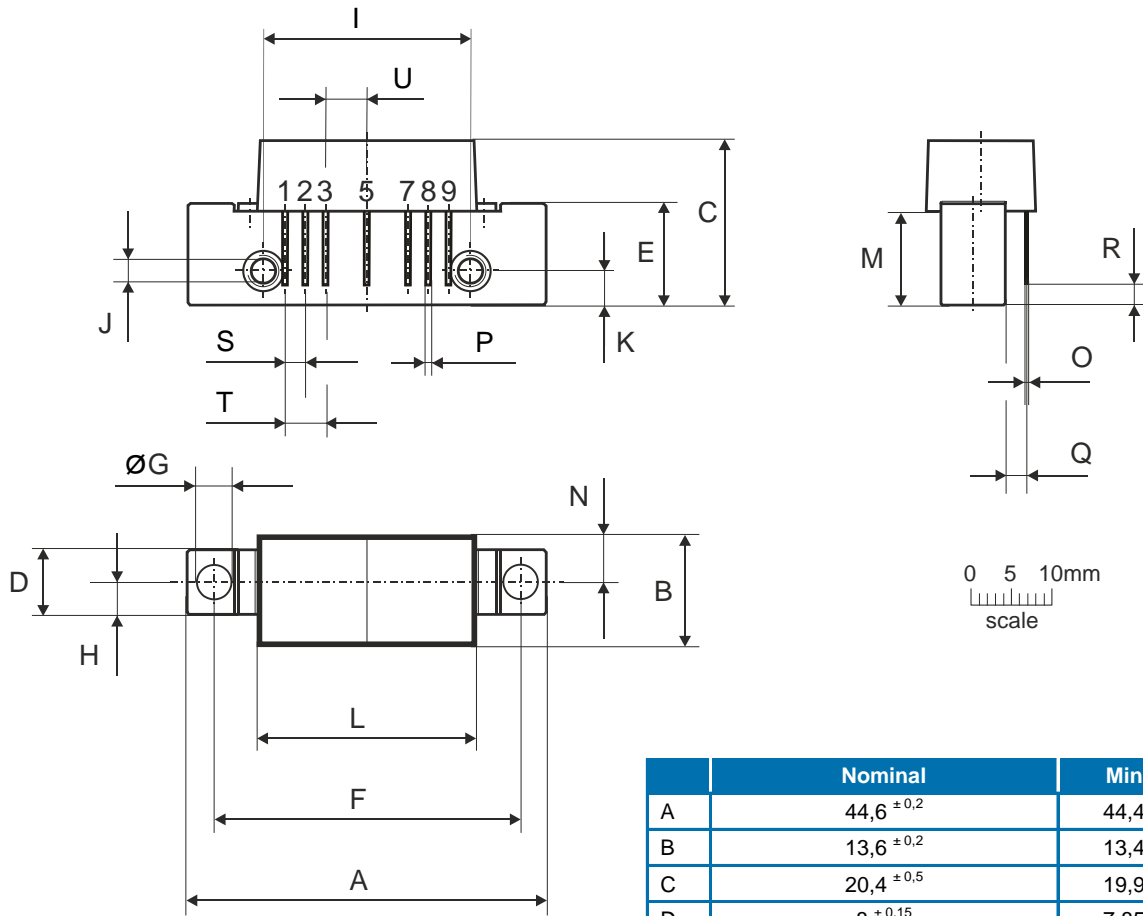
Operation of this device outside the parameter ranges given above may cause permanent damage.

Electrical Specifications

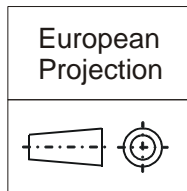
| Parameter | Test Conditions: $V_+ = 24V$, $T_{MB} = 30^\circ C$, $Z_S = Z_L = 75\Omega$ | Min | Typ | Max | Unit |
|-----------------------------|--|------|------|-----------|------|
| Operational Frequency Range | – | 40 | – | 1000 | MHz |
| Gain | $f_o = 50$ MHz | 19.5 | 20.0 | 20.5 | dB |
| Gain | $f_o = 1000$ MHz | 20.0 | | 21.5 | |
| Gain Slope | 40 to 1000 MHz ^[1] | 0.5 | | 2.0 | |
| Gain Flatness | 40 to 1000 MHz | | | ± 0.4 | |
| Input Return Loss | $f_o = 40$ to 160 MHz | 20.0 | | – | dB |
| | $f_o = 160$ to 1000 MHz | 18.0 | | – | |
| Output Return Loss | $f_o = 40$ to 160 MHz | 20.0 | | – | dB |
| | $f_o = 160$ to 870 MHz | 18.0 | | – | |
| | $f_o = 870$ to 1000 MHz | 15.0 | | | |
| Noise Figure | $f_o = 50$ to 1000 MHz | – | 2.5 | 3.5 | dB |
| IDC | | | 255 | 260 | mA |
| CTB | 112 analog channels, NTSC frequency raster: 55.25 MHz to 745.25 MHz, +46dBmV flat output level. ^[2] | | -60 | -57 | dBc |
| XMOD | | | -55 | -51 | dBc |
| CSO | | | -62 | -59 | dBc |
| CTB | 132 analog channels, NTSC frequency raster: 55.25 MHz to 865.25 MHz, +44dBmV flat output level. ^[2] | | -60 | -57 | dBc |
| XMOD | | | -55 | -51 | dBc |
| CSO | | | -62 | -59 | dBc |

- The slope is defined as the difference between the gain at the start frequency and the gain at the stop frequency.
- Composite Triple Beat (CTB) - The CTB parameter is defined by ANSI/SCTE 6.
Composite Second Order (CSO) - The CSO parameter (both sum and difference products) is defined by ANSI/SCTE 6.
Cross Modulation (XMOD) - Cross modulation (XMOD) is defined by ANSI/SCTE 58, measured at baseband (selective voltmeter method), referenced to 100% modulation of the carrier being tested.

Package Drawing (Dimensions in millimeters)



Notes:



Pinning:

| Pin | Name |
|-----|--------|
| 1 | Input |
| 2-3 | GND |
| 4 | |
| 5 | V+ |
| 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 |

Handling Precautions

| Parameter | Rating | Standard |
|----------------------------------|--------|----------------------------|
| ESD – Human Body Model (HBM) | 2 | ANSI/ESD/JEDEC JS-001-2012 |
| ESD – Charged Device Model (CDM) | C3 | JEDEC JS-002 |



Caution!
ESD-Sensitive Device

RoHS Compliance

This part is compliant with 2011/65/EU RoHS directive (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment) as amended by Directive 2015/863/EU.

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations:

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