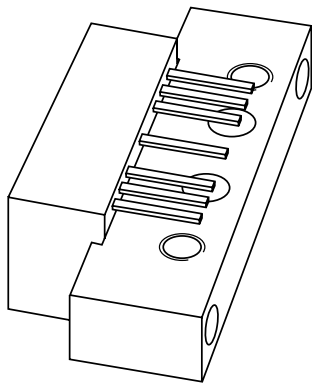


DATA SHEET



BGR69

Hybrid CATV amplifier module

Objective specification

2000 Apr 26

Hybrid CATV amplifier module

BGR69

FEATURES

- Extremely low noise
- Excellent linearity
- Silicon nitride passivation
- Rugged construction
- Gold metallization ensures excellent reliability.

APPLICATIONS

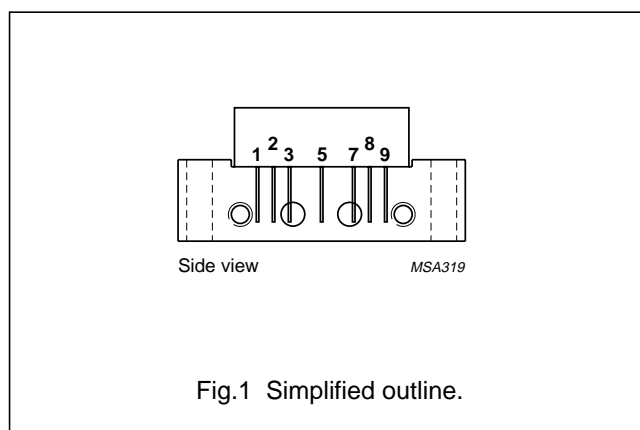
- Reverse amplifier in two-way CATV systems operating in the frequency range of 5 to 65 MHz.

DESCRIPTION

The BGR69 is a high performance amplifier operating at a voltage supply of 24 V in a SOT115J package.

PINNING SOT115J

| PIN | DESCRIPTION |
|-----|-----------------|
| 1 | input |
| 2 | common |
| 3 | common |
| 5 | +V _B |
| 7 | common |
| 8 | common |
| 9 | output |



QUICK REFERENCE DATA

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|------------------|---------------------------|---------------------------------|------|------|------|------|
| G _p | power gain | f = 5 MHz | 34.5 | 35 | 35.5 | dB |
| I _{tot} | total current consumption | DC value; V _B = 24 V | – | – | 220 | mA |

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

| SYMBOL | PARAMETER | MIN. | MAX. | UNIT |
|------------------|-------------------------------------|------|------|------|
| V _i | RF input voltage | – | 65 | dBmV |
| T _{mb} | operating mounting base temperature | –20 | +100 | °C |
| T _{stg} | storage temperature | –40 | +100 | °C |

Hybrid CATV amplifier module

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CHARACTERISTICSBandwidth 5 to 65 MHz; $V_B = 24$ V; $T_{mb} = 30$ °C; $Z_S = Z_L = 75$ Ω .

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-----------|-----------------------------------|---|------|------|-----------|------|
| G_p | power gain | $f = 5$ MHz | 34.5 | 35 | 35.5 | dB |
| SL | slope straight line | $f = 5$ to 65 MHz | 0 | – | 0.5 | dB |
| FL | flatness of frequency response | $f = 5$ to 65 MHz | – | – | ± 0.2 | dB |
| S_{11} | input return losses | $f = 5$ to 65 MHz | 20 | – | – | dB |
| S_{22} | output return losses | $f = 5$ to 65 MHz | 20 | – | – | dB |
| CTB | composite triple beat | 6 chs flat; $V_o = 50$ dBmV; measured at 37.25 MHz | – | – | –73 | dB |
| | | 10 chs flat; $V_o = 50$ dBmV; measured at 61.25 MHz | – | – | –57 | dB |
| X_{mod} | cross modulation | 6 chs flat; $V_o = 50$ dBmV; measured at 37.25 MHz | – | – | –66 | dB |
| | | 10 chs flat; $V_o = 50$ dBmV; measured at 61.25 MHz | – | – | –57 | dB |
| CSO | composite second order distortion | 6 chs flat; $V_o = 50$ dBmV; measured at 24 or 38.5 MHz | – | – | –68 | dB |
| | | 10 chs flat; $V_o = 50$ dBmV; measured at 24 or 62.5 MHz | – | – | –65 | dB |
| d_2 | second order distortion | note 1 | – | – | –70 | dB |
| d_3 | third order distortion | note 2 | – | – | –80 | dB |
| F | noise figure | $f = 65$ MHz | – | – | 4 | dB |
| I_{tot} | total current consumption | note 3 | – | – | 220 | mA |

Notes

- $f_p = 25.25$ MHz; $V_p = 50$ dBmV; $f_q = 37.25$ MHz; $V_q = 50$ dBmV; measured at $f_{(p+q)} = 62.5$ MHz.
- $f_p = 7.25$ MHz; $V_p = 50$ dBmV; $f_q = 19.25$ MHz; $V_q = 50$ dBmV; $f_r = 37.25$ MHz; $V_r = 50$ dBmV; measured at $f_p + f_q + f_r = 63.75$ MHz.
- The module normally operates at $V_B = 24$ V, but is able to withstand supply transients up to 30 V.

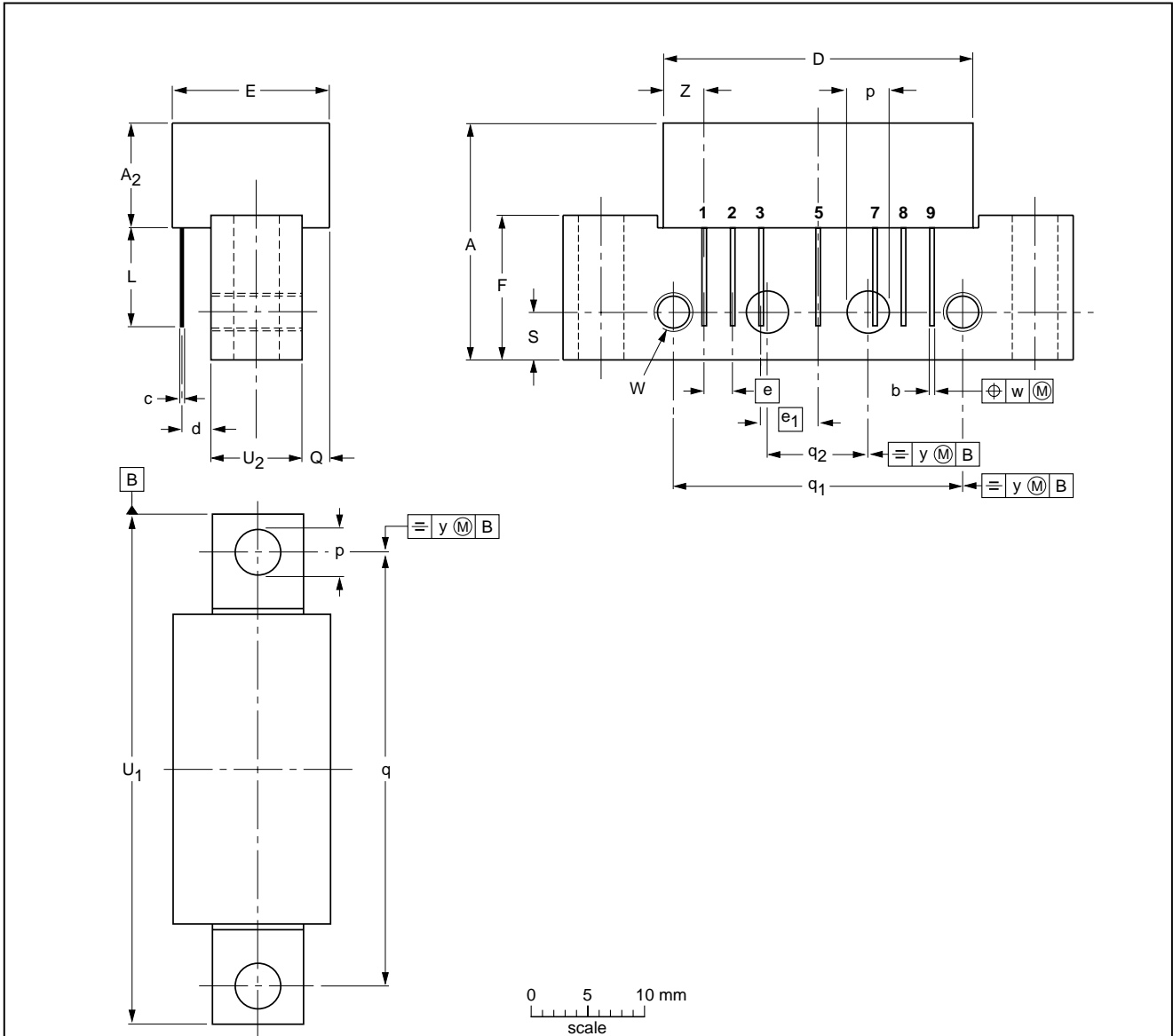
Hybrid CATV amplifier module

BGR69

PACKAGE OUTLINE

Rectangular single-ended package; aluminium flange; 2 vertical mounting holes; 2 x 6-32 UNC and 2 extra horizontal mounting holes; 7 gold-plated in-line leads

SOT115J



DIMENSIONS (mm are the original dimensions)

| UNIT | A max. | A ₂ max. | b | c | D max. | d max. | E max. | e | e ₁ | F | L min. | p | Q max. | q | q ₁ | q ₂ | S | U ₁ max. | U ₂ | W | w | y | Z max. |
|------|--------|---------------------|--------------|------|--------|--------|--------|------|----------------|------|--------|--------------|--------|------|----------------|----------------|-----|---------------------|----------------|-------------|------|-----|--------|
| mm | 20.8 | 9.1 | 0.51 0.38 | 0.25 | 27.2 | 2.54 | 13.75 | 2.54 | 5.08 | 12.7 | 8.8 | 4.15 3.85 | 2.4 | 38.1 | 25.4 | 10.2 | 4.2 | 44.75 | 8 | 6-32 UNC | 0.25 | 0.1 | 3.8 |

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|------|--|---------------------|------------|
| | IEC | JEDEC | EIAJ | | | |
| SOT115J | | | | | | 99-02-06 |

Hybrid CATV amplifier module

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DATA SHEET STATUS

| DATA SHEET STATUS | PRODUCT STATUS | DEFINITIONS ⁽¹⁾ |
|---------------------------|----------------|--|
| Objective specification | Development | This data sheet contains the design target or goal specifications for product development. Specification may change in any manner without notice. |
| Preliminary specification | Qualification | This data sheet contains preliminary data, and supplementary data will be published at a later date. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product. |
| Product specification | Production | This data sheet contains final specifications. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product. |

Note

1. Please consult the most recently issued data sheet before initiating or completing a design.

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Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

Limiting values definition — 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.

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CAUTION

This product is supplied in anti-static packing to prevent damage caused by electrostatic discharge during transport and handling. For further information, refer to Philips specs.: SNW-EQ-608, SNW-FQ-302A and SNW-FQ-302B.

Hybrid CATV amplifier module

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NOTES

Hybrid CATV amplifier module

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NOTES

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