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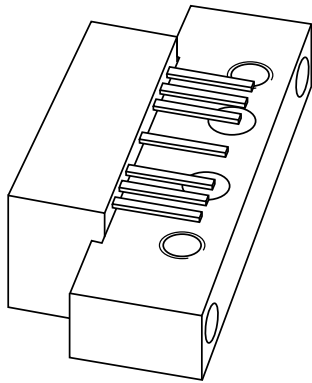
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



DATA SHEET



BGY588N

550 MHz, 34.5 dB gain push-pull
amplifier

Product specification
Supersedes data of 2000 Feb 14

2001 Oct 22



550 MHz, 34.5 dB gain push-pull amplifier

BGY588N

FEATURES

- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- TiPtAu metallized crystals ensure optimal reliability.

APPLICATIONS

CATV systems in the 40 to 550 MHz frequency range and intended for use as a line-extender.

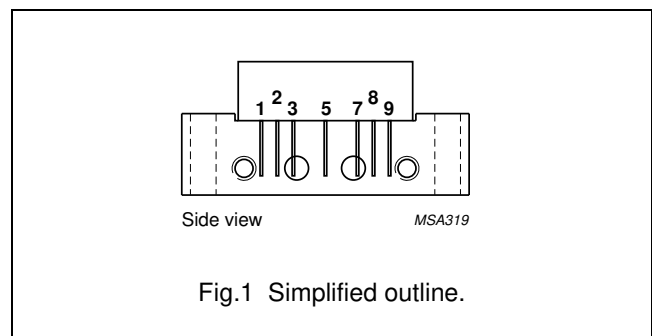
DESCRIPTION

Hybrid amplifier module in a SOT115J package operating with a voltage supply of 24 V (DC).

PINNING - SOT115J

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

PIN CONFIGURATION



QUICK REFERENCE DATA

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|------------------|--------------------------------|-----------------------|------|------|------|------|
| G _p | power gain | f = 50 MHz | 34 | 34.5 | 35 | dB |
| | | f = 550 MHz | 35 | 35.5 | 36 | dB |
| I _{tot} | total current consumption (DC) | V _B = 24 V | 310 | 325 | 340 | mA |

LIMITING VALUES

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

| SYMBOL | PARAMETER | MIN. | MAX. | UNIT |
|------------------|-------------------------------------|------|------|------|
| V _i | RF input voltage | – | 55 | dBmV |
| T _{stg} | storage temperature | –40 | +100 | °C |
| T _{mb} | operating mounting base temperature | –20 | +100 | °C |

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CHARACTERISTICSBandwidth 40 to 550 MHz; $V_B = 24$ V; $T_{\text{case}} = 35$ °C; $Z_S = Z_L = 75$ Ω

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|------------------|-----------------------------------|---|------|------|-----------|------|
| G_p | power gain | $f = 50$ MHz | 34 | 34.5 | 35 | dB |
| | | $f = 550$ MHz | 35 | 35.5 | 36 | dB |
| SL | slope cable equivalent | $f = 40$ to 550 MHz | 0.5 | 1 | 1.5 | dB |
| FL | flatness of frequency response | $f = 40$ to 550 MHz | – | – | ± 0.3 | dB |
| S_{11} | input return losses | $f = 40$ to 80 MHz | 20 | – | – | dB |
| | | $f = 80$ to 160 MHz | 19 | – | – | dB |
| | | $f = 160$ to 550 MHz | 18 | – | – | dB |
| S_{22} | output return losses | $f = 40$ to 80 MHz | 20 | – | – | dB |
| | | $f = 80$ to 160 MHz | 19 | – | – | dB |
| | | $f = 160$ to 550 MHz | 18 | – | – | dB |
| CTB | composite triple beat | 77 channels flat; $V_o = 44$ dBmV; measured at 547.25 MHz | – | – | –57 | dB |
| X_{mod} | cross modulation | 77 channels flat; $V_o = 44$ dBmV; measured at 55.25 MHz | – | – | –59 | dB |
| CSO | composite second order distortion | 77 channels flat; $V_o = 44$ dBmV; measured at 548.5 MHz | – | – | –62 | dB |
| d_2 | second order distortion | note 1 | – | – | –74 | dB |
| V_o | output voltage | $d_{\text{im}} = -60$ dB; note 2 | 61 | – | – | dBmV |
| F | noise figure | $f = 50$ MHz | – | – | 5 | dB |
| | | $f = 550$ MHz | – | – | 6 | dB |
| I_{tot} | total current consumption (DC) | value; $V_B = 24$ V; note 3 | 310 | 325 | 340 | mA |

Notes

- $f_p = 55.25$ MHz; $V_p = 44$ dBmV;
 $f_q = 493.25$ MHz; $V_q = 44$ dBmV;
measured at $f_p + f_q = 548.5$ MHz.
- Measured according to DIN45004B;
 $f_p = 540.25$ MHz; $V_p = V_o$;
 $f_q = 547.25$ MHz; $V_q = V_o - 6$ dB;
 $f_r = 549.25$ MHz; $V_r = V_o - 6$ dB;
measured at $f_p + f_q - f_r = 538.25$ MHz.
- The module normally operates at $V_B = 24$ V, but is able to withstand supply transients up to 30 V.

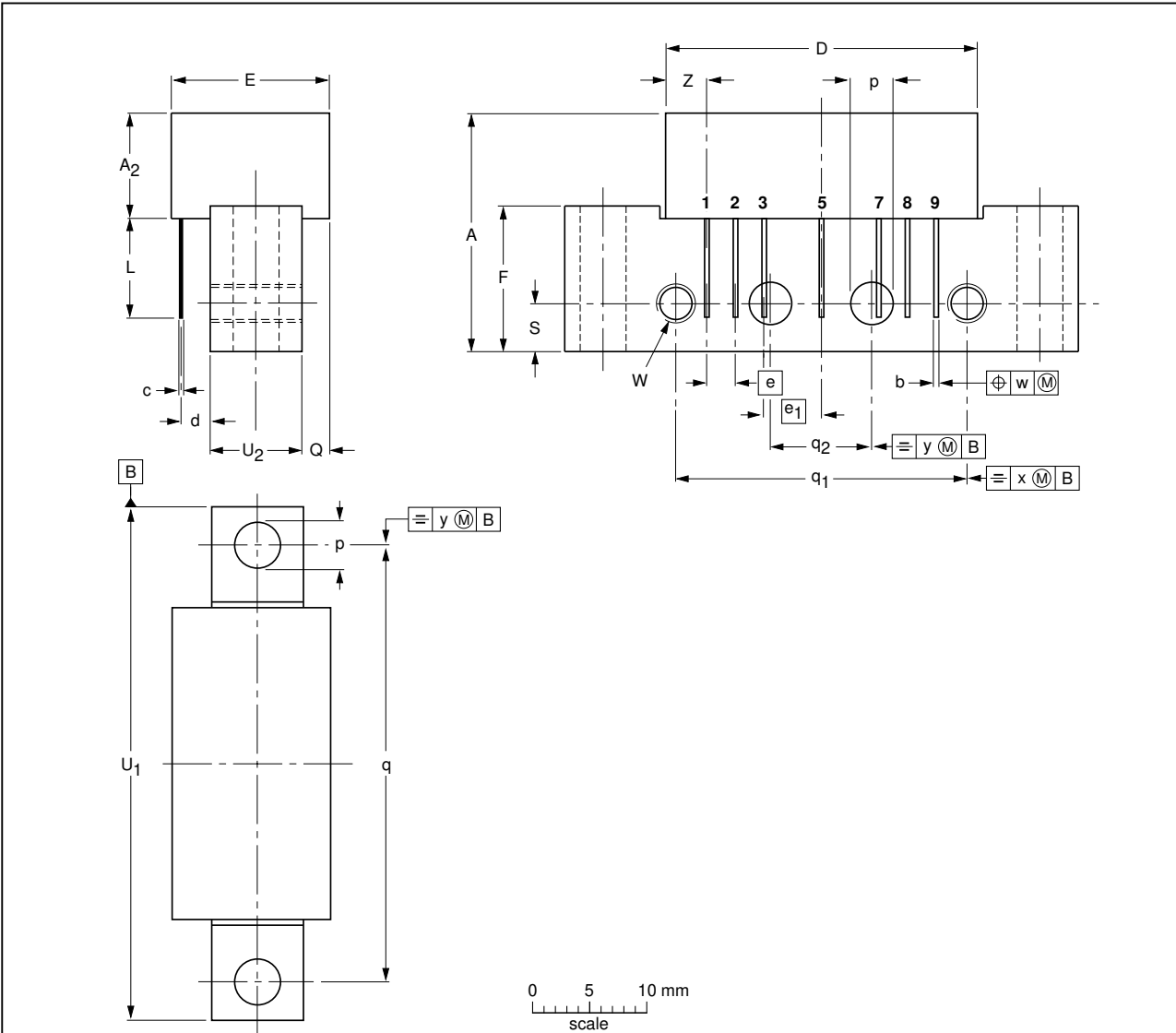
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PACKAGE OUTLINE

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 | E max. | e | e ₁ | F | L min. | p | Q max. | q | q ₁ | q ₂ | S | U ₁ | U ₂ | W | w | x | y | Z max. |
|------|--------|---------------------|--------------|------|--------|--------------|--------|------|----------------|------|--------|--------------|--------|------|----------------|----------------|-----|----------------|----------------|-------------|------|-----|-----|--------|
| mm | 20.8 | 9.5 | 0.51 0.38 | 0.25 | 27.2 | 2.04 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 44.25 | 8.2 7.8 | 6-32 UNC | 0.25 | 0.7 | 0.1 | 3.8 |

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|-------|--|---------------------|----------------------|
| | IEC | JEDEC | JEITA | | | |
| SOT115J | | | | | | 04-02-04 10-06-18 |

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DATA SHEET STATUS

| DOCUMENT STATUS ⁽¹⁾ | PRODUCT STATUS ⁽²⁾ | DEFINITION |
|--------------------------------|-------------------------------|---|
| Objective data sheet | Development | This document contains data from the objective specification for product development. |
| Preliminary data sheet | Qualification | This document contains data from the preliminary specification. |
| Product data sheet | Production | This document contains the product specification. |

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