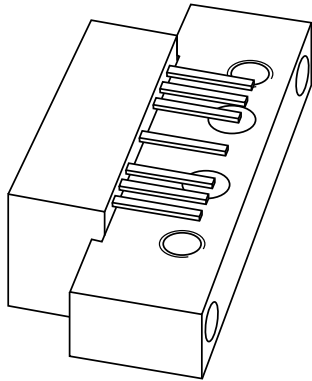


DATA SHEET



BGY883

860 MHz, 15 dB gain push-pull
amplifier

Product specification
Supersedes data of 1997 Apr 14

2001 Oct 31



860 MHz, 15 dB gain push-pull amplifier

BGY883

FEATURES

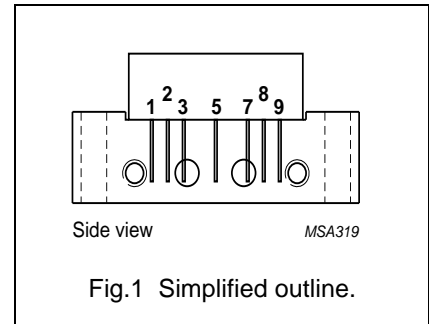
- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- Gold metallization ensures excellent reliability.

DESCRIPTION

Hybrid amplifier module designed for CATV systems operating over a frequency range of 40 to 860 MHz at 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 |



QUICK REFERENCE DATA

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|------------------|--------------------------------|-----------------------|------|------|------|
| G _p | power gain | f = 50 MHz | 14.5 | 15.5 | dB |
| | | f = 860 MHz | 15 | – | dB |
| I _{tot} | total current consumption (DC) | V _B = 24 V | – | 235 | 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 _{stg} | storage temperature | –40 | +100 | °C |
| T _{mb} | operating mounting base temperature | –20 | +100 | °C |

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CHARACTERISTICS

Table 1 Bandwidth 40 to 860 MHz; $V_B = 24$ V; $T_{case} = 30$ °C; $Z_S = Z_L = 75$ Ω

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-----------|-----------------------------------|--|------|------|-----------|------|
| G_p | power gain | f = 50 MHz | 14.5 | – | 15.5 | dB |
| | | f = 860 MHz | 15 | – | – | dB |
| SL | slope cable equivalent | f = 40 to 860 MHz | 0 | – | 2 | dB |
| FL | flatness of frequency response | f = 40 to 860 MHz | – | – | ± 0.3 | dB |
| S_{11} | input return losses | f = 40 to 80 MHz | 20 | – | – | dB |
| | | f = 80 to 160 MHz | 18.5 | – | – | dB |
| | | f = 160 to 320 MHz | 17 | – | – | dB |
| | | f = 320 to 640 MHz | 15.5 | – | – | dB |
| | | f = 640 to 860 MHz | 14 | – | – | dB |
| S_{22} | output return losses | f = 40 to 80 MHz | 20 | – | – | dB |
| | | f = 80 to 160 MHz | 18.5 | – | – | dB |
| | | f = 160 to 320 MHz | 17 | – | – | dB |
| | | f = 320 to 640 MHz | 15.5 | – | – | dB |
| | | f = 640 to 860 MHz | 14 | – | – | dB |
| S_{21} | phase response | f = 50 MHz | –45 | – | +45 | deg |
| CTB | composite triple beat | 49 channels flat; $V_o = 44$ dBmV; measured at 859.25 MHz | – | – | –61 | dB |
| X_{mod} | cross modulation | 49 channels flat; $V_o = 44$ dBmV; measured at 55.25 MHz | – | – | –61 | dB |
| CSO | composite second order distortion | 49 channels flat; $V_o = 44$ dBmV; measured at 860.5 MHz | – | – | –61 | dB |
| d_2 | second order distortion | note 1 | – | – | –68 | dB |
| V_o | output voltage | $d_{im} = -60$ dB; note 2 | 58.5 | 60 | – | dBmV |
| F | noise figure | f = 50 MHz | – | – | 6 | dB |
| | | f = 550 MHz | – | – | 7 | dB |
| | | f = 650 MHz | – | – | 7.5 | dB |
| | | f = 750 MHz | – | – | 8 | dB |
| | | f = 860 MHz | – | – | 8.5 | dB |
| I_{tot} | total current consumption (DC) | note 3 | – | – | 235 | mA |

Notes

- $f_p = 55.25$ MHz; $V_p = 44$ dBmV;
 $f_q = 805.25$ MHz; $V_q = 44$ dBmV;
measured at $f_p + f_q = 860.5$ MHz.
- Measured according to DIN45004B:
 $f_p = 851.25$ MHz; $V_p = V_o$;
 $f_q = 858.25$ MHz; $V_q = V_o - 6$ dB;
 $f_r = 860.25$ MHz; $V_r = V_o - 6$ dB;
measured at $f_p + f_q - f_r = 849.25$ MHz.
- The module normally operates at $V_B = 24$ V, but is able to withstand supply transients up to 30 V.

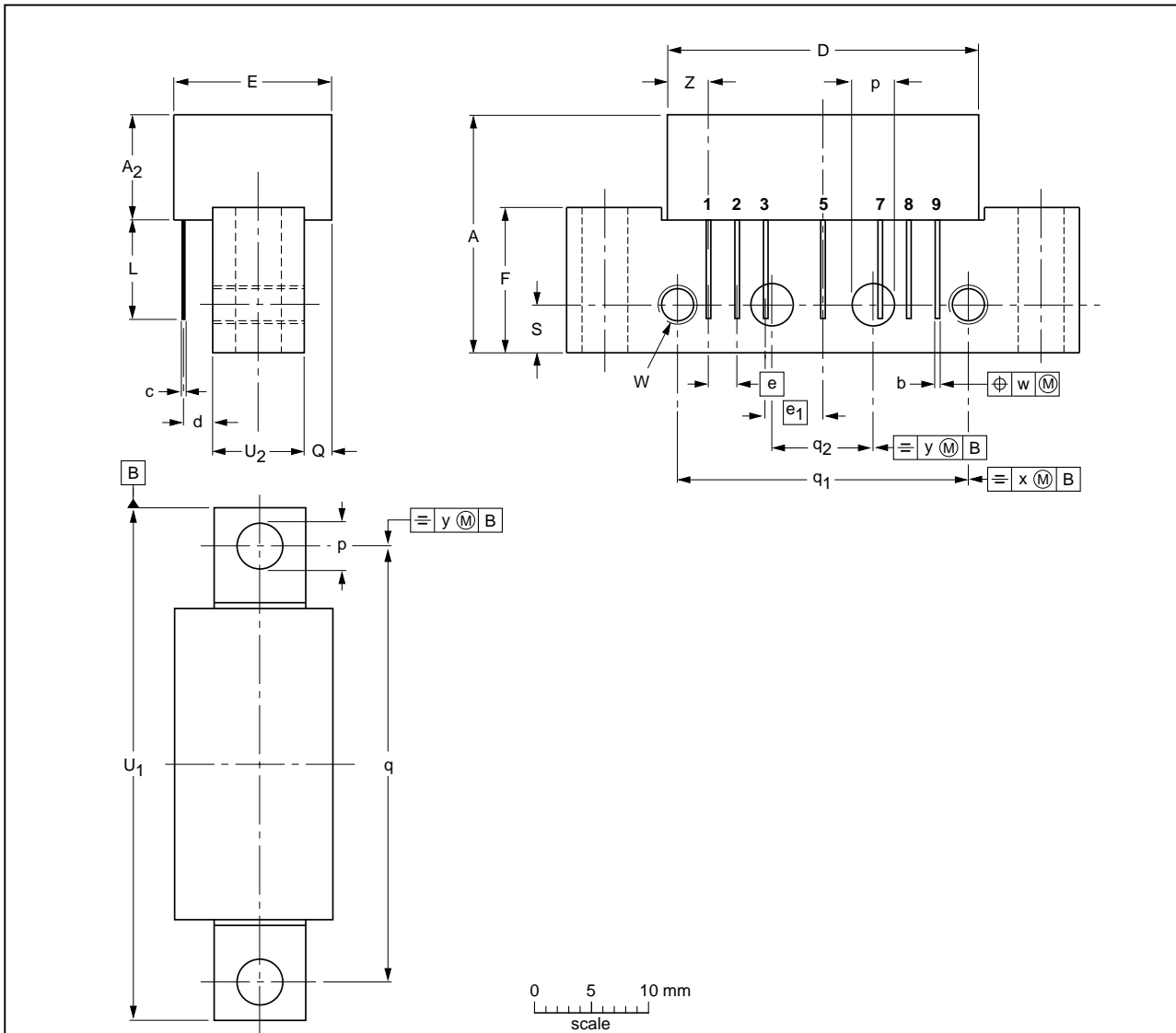
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PACKAGE OUTLINE

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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