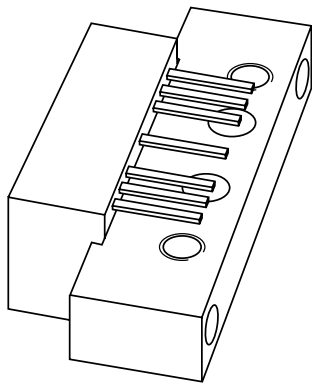


DATA SHEET



BGY84; BGY85 CATV amplifier modules

Product specification
Supersedes data of 1999 Mar 22

1999 Mar 26

CATV amplifier modules

BGY84; BGY85

FEATURES

- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- Optimal reliability ensured by TiPtAu metallized crystals.

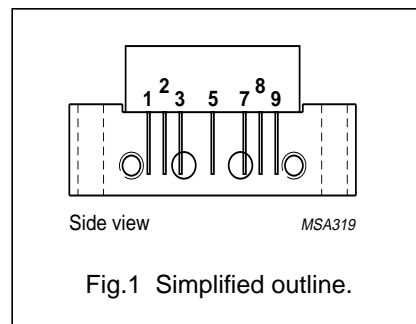
DESCRIPTION

Hybrid amplifier modules for CATV systems operating over a frequency range of 40 to 450 MHz at a voltage supply of 24 V (DC). The BGY84 is intended for use as an input amplifier module and BGY85 as an output amplifier module.

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 | 16.5 | – | 17.5 | dB |
| | | f = 450 MHz | 17.3 | – | 18.8 | dB |
| I _{tot} | total current consumption (DC) | V _B = 24 V | | | | |
| | | | BGY84 | – | 180 | 200 |
| | BGY85 | – | 220 | 240 | mA | |

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

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

CATV amplifier modules

BGY84; BGY85

CHARACTERISTICS

Table 1 Bandwidth 40 to 450 MHz; $T_{mb} = 30\text{ }^{\circ}\text{C}$; $Z_S = Z_L = 75\ \Omega$

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-----------|--|--|------|------|-----------|------|
| G_p | power gain | $f = 50\text{ MHz}$ | 16.5 | – | 17.5 | dB |
| | | $f = 450\text{ MHz}$ | 17.3 | – | 18.8 | dB |
| SL | slope cable equivalent | $f = 40\text{ to }450\text{ MHz}$ | 0.5 | – | 1.5 | dB |
| FL | flatness of frequency response | $f = 40\text{ to }450\text{ MHz}$ | – | – | ± 0.2 | dB |
| S_{11} | input return losses | $f = 40\text{ to }80\text{ MHz}$ | 20 | – | – | dB |
| | | $f = 80\text{ to }160\text{ MHz}$ | 19 | – | – | dB |
| | | $f = 160\text{ to }450\text{ MHz}$ | 18 | – | – | dB |
| S_{22} | output return losses | $f = 40\text{ to }80\text{ MHz}$ | 20 | – | – | dB |
| | | $f = 80\text{ to }160\text{ MHz}$ | 19 | – | – | dB |
| | | $f = 160\text{ to }450\text{ MHz}$ | 18 | – | – | dB |
| CTB | composite triple beat BGY84 BGY85 | 60 channels flat; $V_o = 46\text{ dBmV}$; measured at 445.25 MHz | – | – | –55 | dB |
| | | | – | – | –58 | dB |
| X_{mod} | cross modulation BGY84 BGY85 | 60 channels flat; $V_o = 46\text{ dBmV}$; measured at 55.25 MHz | – | – | –57 | dB |
| | | | – | – | –60 | dB |
| d_2 | second order distortion | note 1 | – | – | –70 | dB |
| V_o | output voltage BGY84 BGY85 | $d_{im} = -60\text{ dB}$; note 2 | 60 | – | – | dBmV |
| | | | 62.5 | – | – | dBmV |
| F | noise figure BGY84 BGY85 | $f = 450\text{ MHz}$ | – | – | 6.5 | dB |
| | | | – | – | 7 | dB |
| I_{tot} | total current consumption (DC) BGY84 BGY85 | $V_B = 24\text{ V}$; note 3 | – | 180 | 200 | mA |
| | | | – | 220 | 240 | mA |

Notes

- $f_p = 55.25\text{ MHz}$; $V_p = 46\text{ dBmV}$;
 $f_q = 343.25\text{ MHz}$; $V_q = 46\text{ dBmV}$;
measured at $f_p + f_q = 398.5\text{ MHz}$.
- Measured according to DIN45004B;
 $f_p = 440.25\text{ MHz}$; $V_p = V_o$;
 $f_q = 447.25\text{ MHz}$; $V_q = V_o - 6\text{ dB}$;
 $f_r = 449.25\text{ MHz}$; $V_r = V_o - 6\text{ dB}$;
measured at $f_p + f_q - f_r = 438.25\text{ MHz}$.
- The modules normally operate at $V_B = 24\text{ V}$, but are able to withstand supply transients up to 30 V.

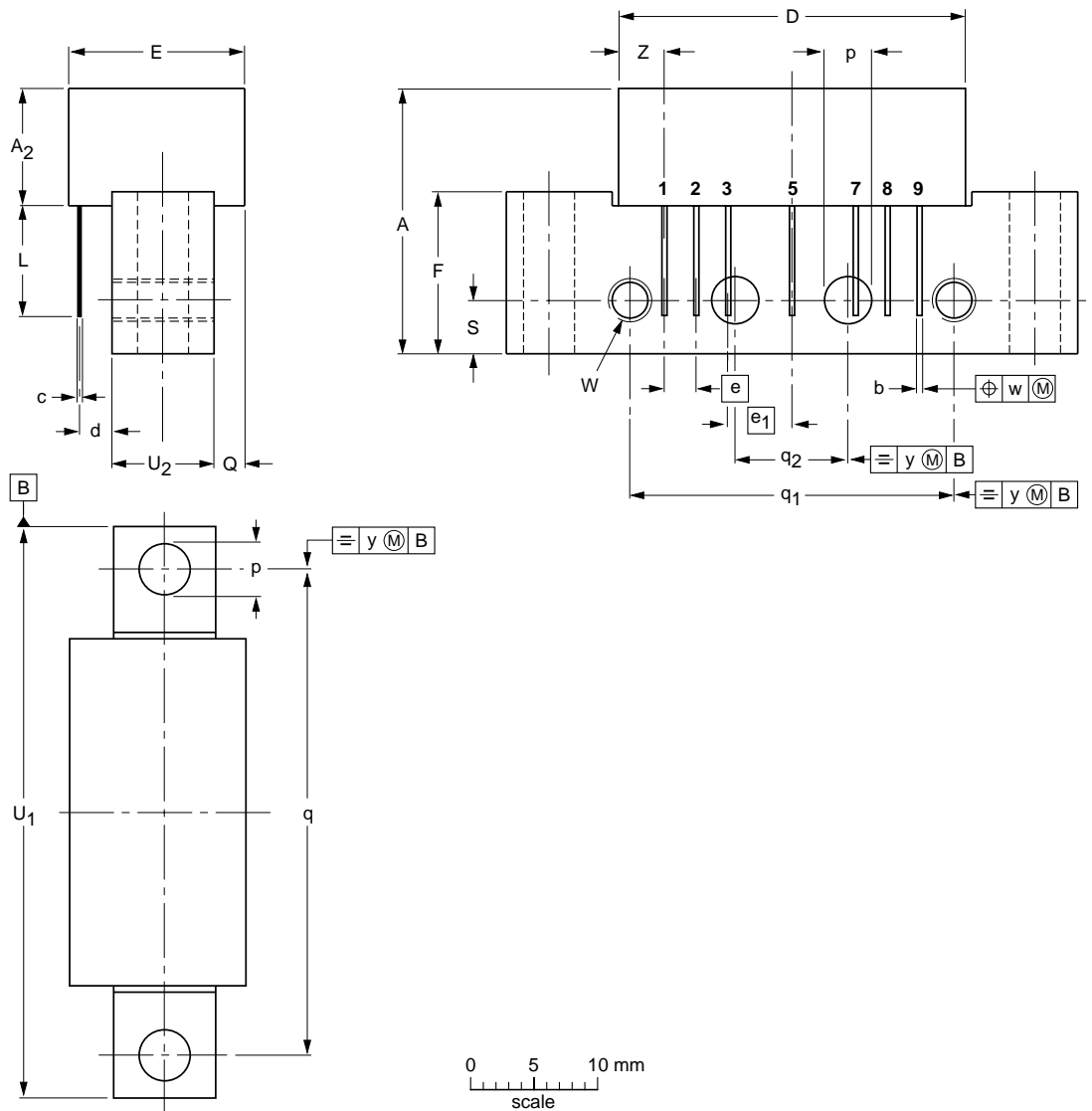
CATV amplifier modules

BGY84; BGY85

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 |

CATV amplifier modules

BGY84; BGY85

DEFINITIONS

| | |
|---|---|
| Data Sheet Status | |
| Objective specification | This data sheet contains target or goal specifications for product development. |
| Preliminary specification | This data sheet contains preliminary data; supplementary data may be published later. |
| Product specification | This data sheet contains final product specifications. |
| Limiting values | |
| Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). 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. | |
| Application information | |
| Where application information is given, it is advisory and does not form part of the specification. | |

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CATV amplifier modules

BGY84; BGY85

NOTES

CATV amplifier modules

BGY84; BGY85

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