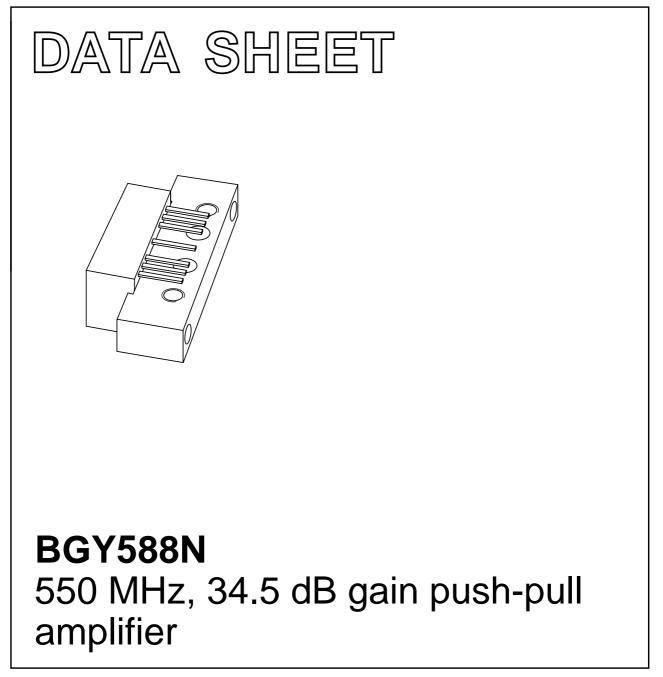
DISCRETE SEMICONDUCTORS



Product specification Supersedes data of 2000 Feb 14 2001 Oct 22



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

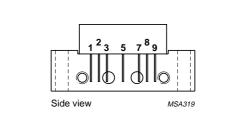


Fig.1 Simplified outline.

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 | | MAX. | UNIT |
|------------------|-------------------------------------|--|------|------|
| Vi | RF input voltage | | 55 | dBmV |
| T _{stg} | storage temperature | | +100 | °C |
| T _{mb} | operating mounting base temperature | | +100 | °C |

BGY588N

CHARACTERISTICS

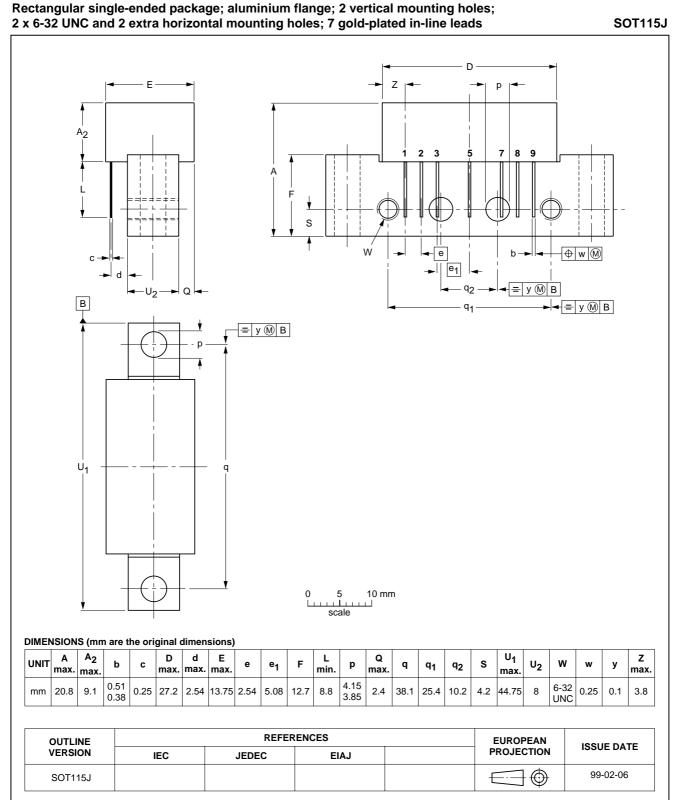
Bandwidth 40 to 550 MHz; V_B = 24 V; T_{case} = 35 °C; Z_S = Z_L = 75 Ω

| 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 |
| СТВ | composite triple beat | 77 channels flat; $V_o = 44 \text{ dBmV}$; measured at 547.25 MHz | - | - | -57 | dB |
| X _{mod} | cross modulation | 77 channels flat; $V_0 = 44 \text{ dBmV}$; measured at 55.25 MHz | - | - | -59 | dB |
| CSO | composite second order distortion | 77 channels flat; $V_o = 44 \text{ dBmV}$; measured at 548.5 MHz | - | - | -62 | dB |
| d ₂ | second order distortion | note 1 | _ | _ | -74 | dB |
| Vo | output voltage | d _{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

- 1. $f_p = 55.25 \text{ MHz}; V_p = 44 \text{ dBmV};$ $f_q = 493.25 \text{ MHz}; V_q = 44 \text{ dBmV};$ measured at $f_p + f_q = 548.5 \text{ MHz}.$
- 2. Measured according to DIN45004B; $f_p = 540.25 \text{ MHz}; V_p = V_0;$ $f_q = 547.25 \text{ MHz}; V_q = V_0 - 6 \text{ dB};$ $f_r = 549.25 \text{ MHz}; V_r = V_0 - 6 \text{ dB};$ measured at $f_p + f_q - f_r = 538.25 \text{ MHz}.$
- 3. The module normally operates at $V_B = 24$ V, but is able to withstand supply transients up to 30 V.

PACKAGE OUTLINE



BGY588N

BGY588N

DATA SHEET STATUS

| DATA SHEET STATUS ⁽¹⁾ | PRODUCT STATUS ⁽²⁾ | DEFINITIONS |
|----------------------------------|----------------------------------|--|
| Objective data | Development | This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice. |
| Preliminary data | Qualification | This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product. |
| Product data | Production | This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Changes will be communicated according to the Customer Product/Process Change Notification (CPCN) procedure SNW-SQ-650A. |

Notes

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- 2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL http://www.semiconductors.philips.com.

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BGY588N

550 MHz, 34.5 dB gain push-pull amplifier

NOTES

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550 MHz, 34.5 dB gain push-pull amplifier

NOTES

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Contact information

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Printed in The Netherlands

613518/04/pp8

Date of release: 2001 Oct 22

Document order number: 9397 750 08804

SCA73

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