

## 2650A/B Broadband Photodiode

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### Description

The 2650A/B provides the proven high performance of our photodiode technology in a very practical, cost-effective package. The 2650-series features high linearity and low capacitance over a 1 GHz bandwidth. These broadband photodiodes are housed in a small, environmentally rugged coaxial package.

The 2650A/B broadband photodetector is designed to provide the performance and flexibility needed to meet the expanding applications of two-way communications networks. This photodiode is used today in forward- and return-path applications, including AM-VSB CATV, QAM 64/256, PON, FTTC, and FTTH receivers.

### Features

- Low capacitance,  $\leq 0.6$  pF
- 1 GHz flat response,  $\pm 0.5$  dB
- High responsivity:
  - $\geq 0.85$  at 1310 nm
  - $\geq 0.95$  at 1550 nm

### Applications

- Forward-path and return-path broadband video transport
- EDFA/network monitors

## Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

| Parameter                   | Symbol | Min | Max  | Unit |
|-----------------------------|--------|-----|------|------|
| Operating Temperature Range | TOP    | -40 | 85   | °C   |
| Storage Temperature Range   | Tstg   | -40 | 85   | °C   |
| Input Power Saturation      | PIN    | —   | 10   | mW   |
| Reverse Voltage             | VR     | —   | 30   | V    |
| Forward Current             | IF     | —   | 10   | mA   |
| Power Dissipation           | PDISS  | —   | <100 | mW   |

## Characteristics

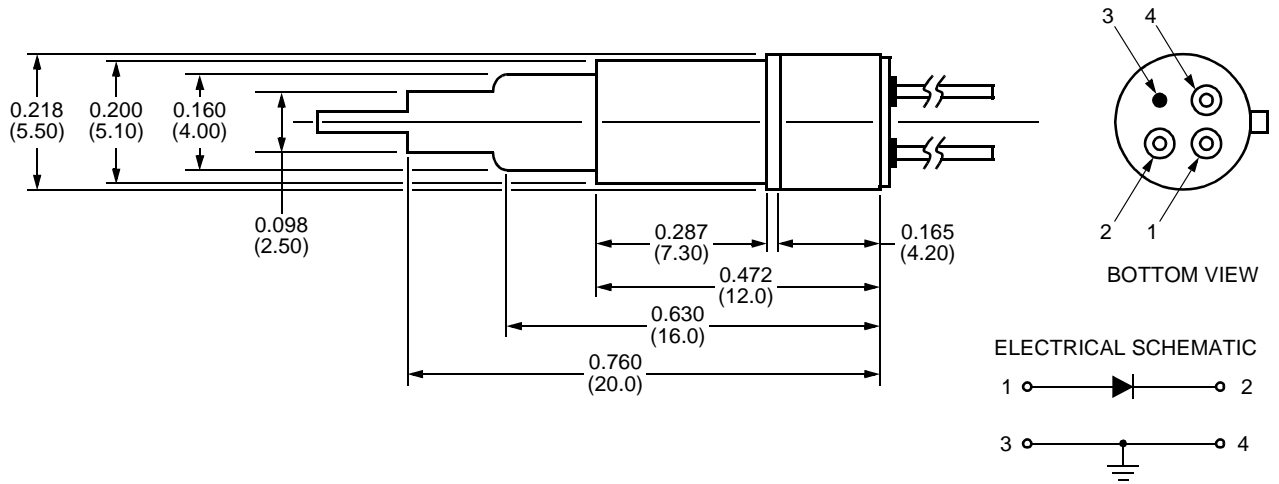
Table 1. Electrical/Optical Characteristics

| Parameter                         | Symbol    | Min  | Typ                                   | Max  | Unit           |
|-----------------------------------|-----------|------|---------------------------------------|------|----------------|
| Optical Wavelength Range          | $\lambda$ | 1100 | —                                     | 1600 | nm             |
| Responsivity                      | —         | —    | >0.85 at 1310 nm,<br>>0.95 at 1550 nm | —    | mA/mW<br>mA/mW |
| Frequency Range                   | F         | 1    | —                                     | 1000 | MHz            |
| Frequency Response                | —         | —    | $\pm 0.5$                             | —    | dB             |
| Distortion Products: <sup>1</sup> |           |      |                                       |      |                |
| Composite Second Order            | CSO       | —    | $\leq -75$                            | —    | dBc            |
| Composite Triple Beat             | CTB       | —    | $\leq -85$                            | —    | dBc            |
| Back Reflection                   | RL        | —    | $\leq -40$                            | —    | dB             |
| Dark Current                      | ID        | —    | $\leq 5$ at 25 °C                     | —    | nA             |
| Capacitance                       | —         | —    | $\leq 0.6$                            | —    | pF             |
| Bandwidth                         | BW        | —    | 1.0                                   | —    | GHz            |

1. Two laser test at 1310 nm. Each laser has 40% modulation index. Total received power is 0 dBm. Distortion products measured at 80 MHz, 450 MHz, 600 MHz, 850 MHz, and 1000 MHz.

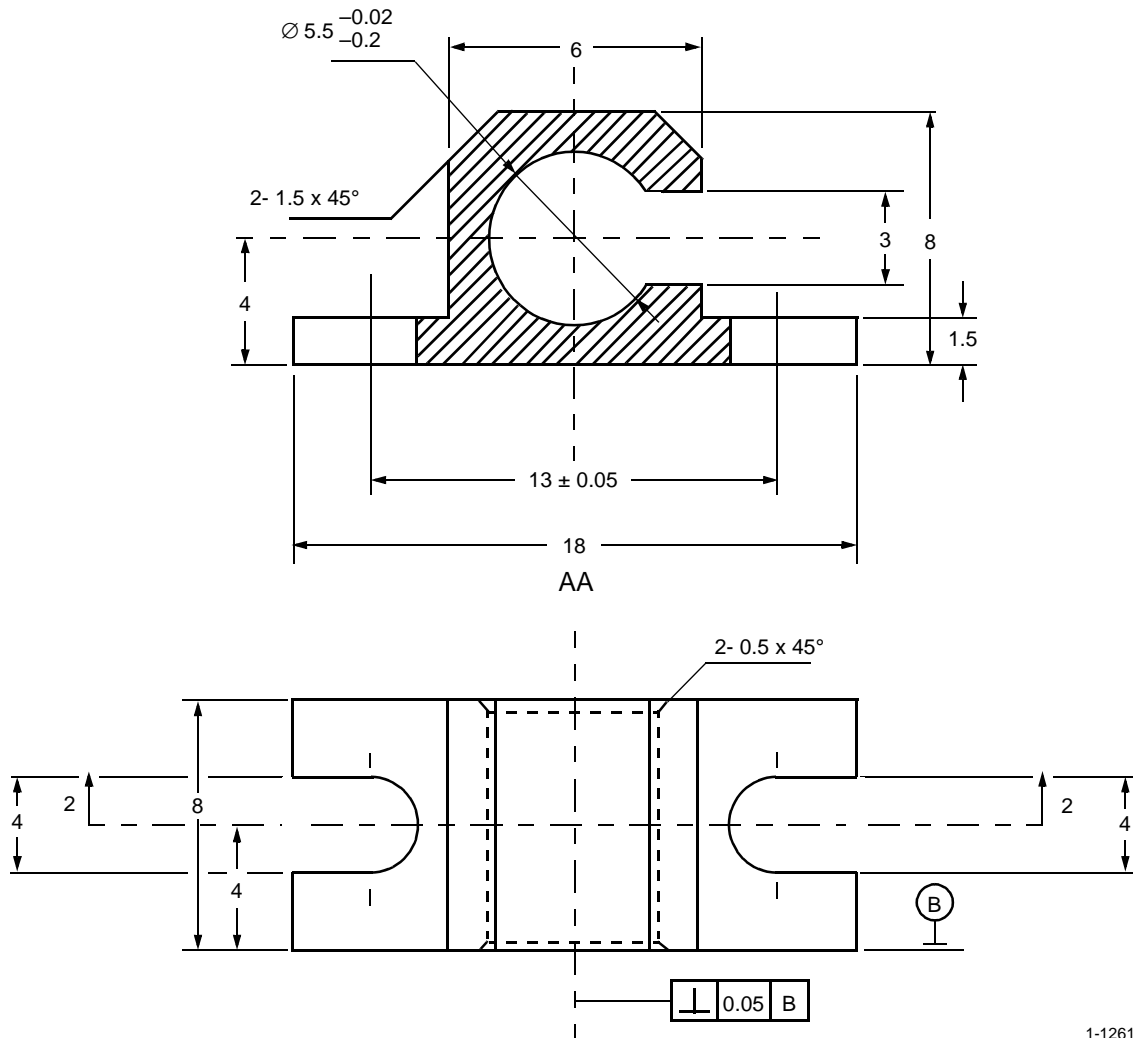
Outline Diagram

2650A/B Photodiode with Electrical Schematic (Dimensions are in inches and (millimeters.))



2650A/B Photodiode Bracket (Dimensions are in millimeters.)

1-1185 (F)



1-1261 (F)

## Ordering Information

Table 2. Ordering Information<sup>1</sup>

| Device Code | Description                                   | Fiber <sup>2</sup>  | Connector <sup>2</sup> | Comcode   |
|-------------|---|---------------------|------------------------|-----------|
| 2650A       | Broadband Photodiode without Mounting Bracket | Single-mode, 900 μm | —                      | 108866500 |
| 2650B       | Broadband Photodiode with Mounting Bracket    | Single-mode, 900 μm | —                      | 108866567 |

1. Other options available. For additional ordering information, please contact an account manager at OPTO West, Agere Systems Inc., 1-800-362-3891 (for sales staff, please press option 2).

2. Please specify fiber length and connector type when ordering.

For additional information, contact your Agere Systems Account Manager or the following:

INTERNET: <http://www.agere.com>

E-MAIL: [docmaster@micro.lucent.com](mailto:docmaster@micro.lucent.com)

N. AMERICA: Agere Systems Inc., 555 Union Boulevard, Room 30L-15P-BA, Allentown, PA 18109-3286

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