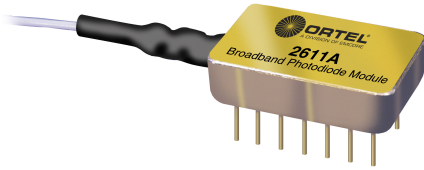


2611A Broadband Photodiode Module



The 2609C is a packaged impedance-matched photodiode module with internal gain designed for use in optical broadband receivers in fiberoptic networks. The patented impedance-match technology results in improved gain-bandwidth product compared to external circuits due to better control of parasitics between the photodiode and the impedance-matching circuit

Additionally, the 2611A is designed for superior distortion performance at up to 6 dBm (received) input power

Features

- Flat response, ± 0.5 dB
- Frequency response up to 1 GHz
- High Responsivity
 - >0.85 A/W at 1310 nm
 - >0.95 A/W at 1550 nm
- Internal current gain, 6 dB (typ.)
- Up to 3 dBm max. continuous received power (6 dBm max. peak power)
- 75 Ω impedance-matched

Applications

- Broadband CATV receivers requiring high input power for improved performance

PIN Information

Table 1. Pin Descriptions

| Pin No. | Description |
|---------|-------------|
| 1 | Ground |
| 2 | Ground |
| 3 | Ground |
| 4 | Ground |
| 5 | Ground |
| 6 | Ground |
| 7 | Open |
| 8 | Open |
| 9 | RF Out |
| 10 | Ground |
| 11 | Bias |
| 12 | Ground |
| 13 | Open |
| 14 | Ground |

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 case temperature range | T_C | -40 | 85 | °C |
| Storage temperature range | T_{stg} | -40 | 85 | °C |
| Optical Input Power | P_{IN} | -- | 4 | mW |
| Bias Voltage | V_{PD} | -- | 30 | V |
| Forward Current | I_F | -- | 10 | mA |

Characteristics

Note: These product specifications describe warranted performance. Typical values provide expected levels of performance but are not guaranteed.

Table 2. Electrical/Optical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|----------------------------------|-----------|------|--------------------------------------|------|----------------|
| Optical Wavelength Range | λ | 1280 | -- | 1580 | nm |
| Responsivity | -- | -- | >0.85 at 1310 nm >0.95 at 1550 nm | -- | mA/mW mA/mW |
| Optical Return Loss ¹ | RL | -- | >45 | -- | dB |
| Bias Voltage | -- | -- | 20 (nominal) | -- | V |
| Dark Current | I_D | -- | 200 at 20 °C | -- | nA |

1. Without connector

Table 3. RF Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|----------------------------------|--------|---------------|---|------|------------|
| Frequency Range | F | 40 | -- | 1000 | MHz |
| Gain ¹ | G | -- | >5 | -- | dB |
| Frequency Response | -- | -- | $<\pm 0.5$ | -- | dB |
| Receiver Noise | -- | See Figure 1. | | | |
| Distortion Products ² | | | | | |
| Second Order | CSO | -- | <-68 above 550 MHz <-70 below 55 MHz | -- | dBc dBc |
| Third Order | CTB | -- | <-80 | -- | |

1. Current gain of internal transformer circuit

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

Characteristics Curves

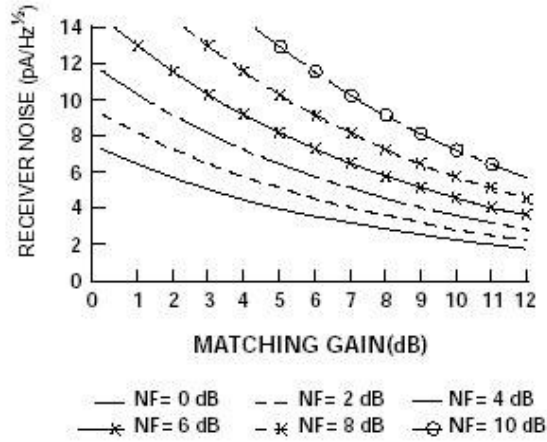


Figure 1. Receiver Noise

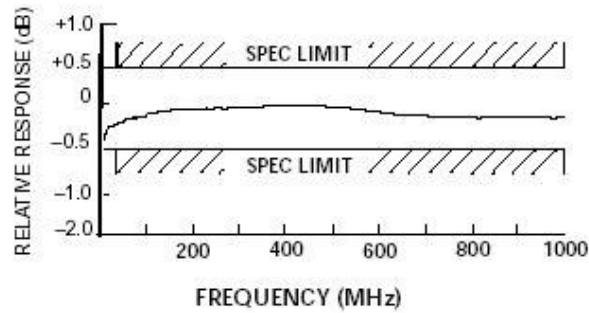
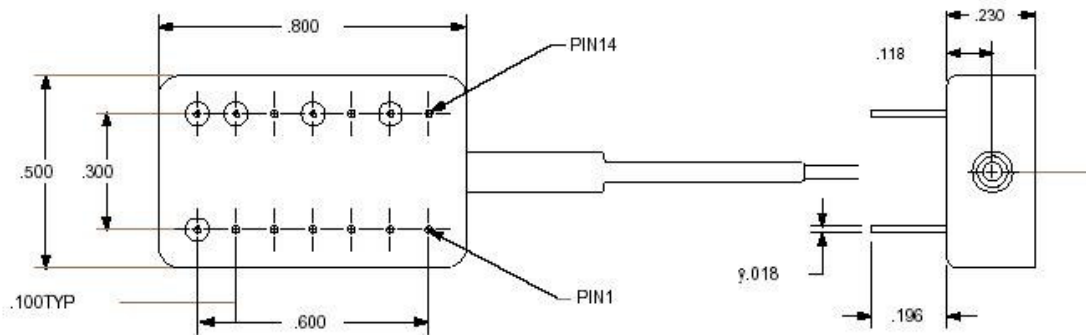


Figure 2. Typical Frequency Response Measured into 75 Ω Load, VSWR <1.5

Outline Diagram

Dimensions are in inches.



Ordering Information

Contact Ortel, a division of EMCORE, for ordering information on this or any other product at (626) 293-3400

Table 2. Ordering Information

| Device Code | Description | Connector | Pigtail |
|-------------|-----------------------------|-----------|---|
| 2611A | Broadband Photodiode Module | None | Singlemode, 9 μm /125 μm |

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