Texas Instruments, Inc.
High Speed Interface Products

ONET8551T APD Bonding

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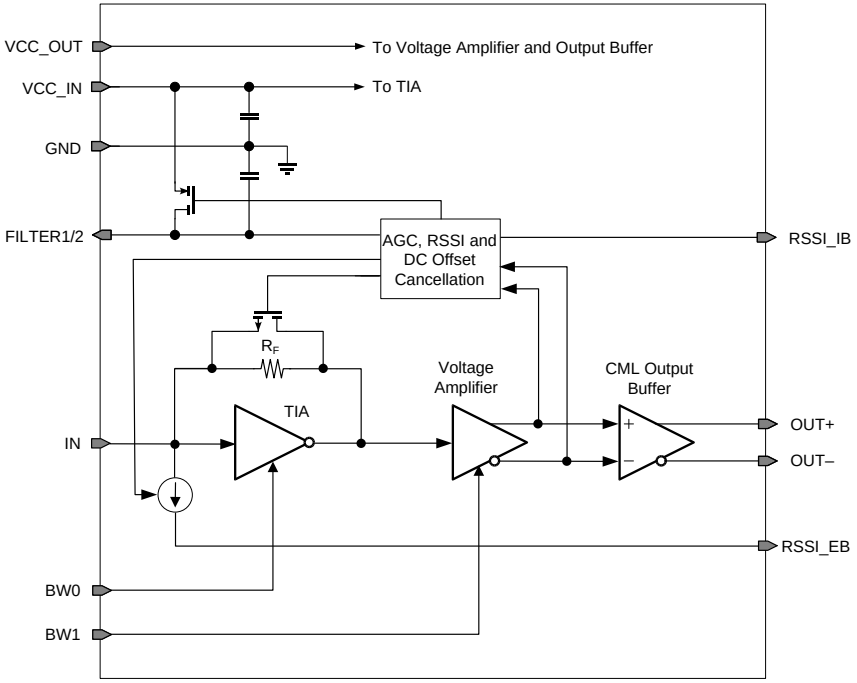
ONET8551T

11.3Gb/s High Gain Limiting TIA with RSSI



Features

- 9GHz Bandwidth
- 10kΩ Differential Transimpedance
- 0.9μA$_{RMS}$ Input Referred noise
- -20dBm Sensitivity
- 2.5mApp Input Overload Current
- Received Signal Strength Indicator
- 92mW Typical Power Dissipation
- Single +3.3V Supply
- -40°C to 100°C Ambient Operation
- On Chip Supply Filter Capacitor
- Die size: 870μm x 1036μm

Applications

- 10 Gigabit Ethernet Optical Receivers
- 8x and 10x Fibre Channel Optical Receivers
- SONET OC-192 Optical Receivers
- 10G PON
- 6G & 10G CPRI and OBSAI
- PIN and APD Preamplifiers

Benefits

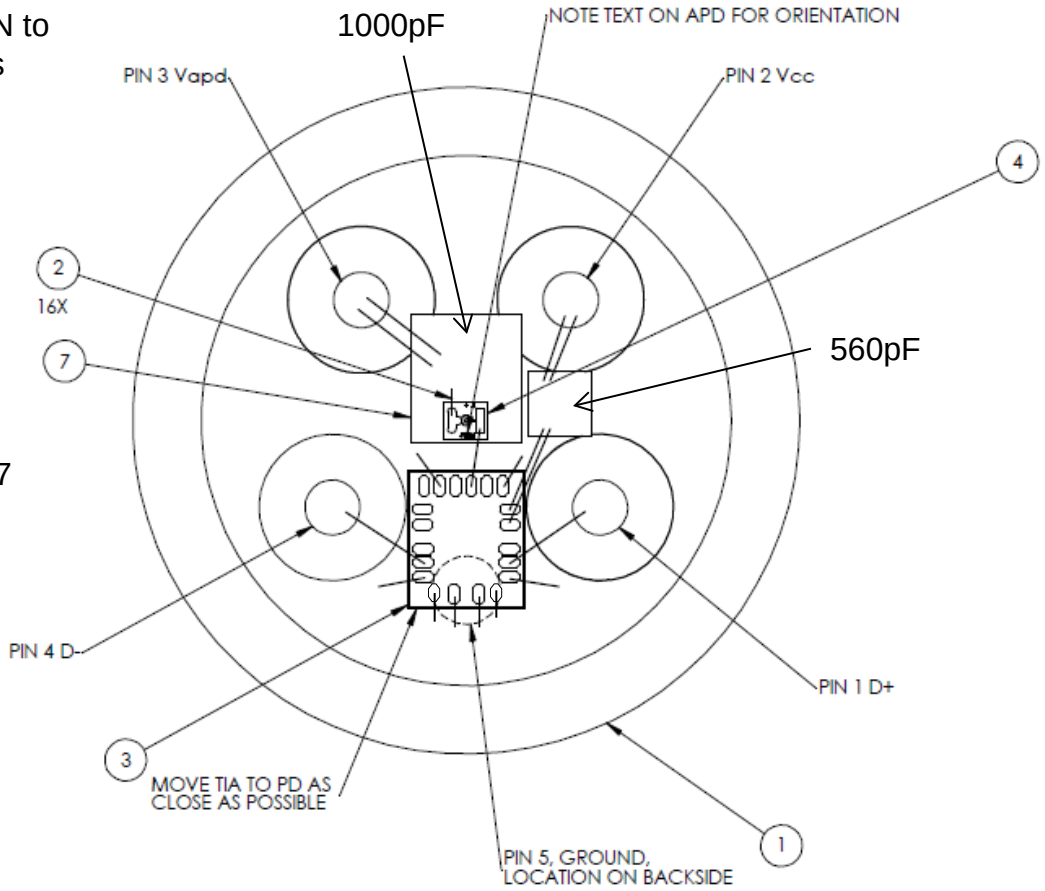
- One TIA for PIN and APD applications
- High Gain for reduced crosstalk
- Low Bandwidth and Transimpedance Variation over Temperature
- Low Power
- Bandwidth adjustment

ONET8551T
APD Bonding Recommendations

NOTE: MAKE ALL WIREBOND LENGTHS AS SHORT AS POSSIBLE USE A LOW LOOP HEIGHT.

Except wirebond from IN to PD: 0.3nH (300um) was used in simulations

Have 2 versions:
1. Ground both pads 17 and 20.
2. Ground only pad 17.



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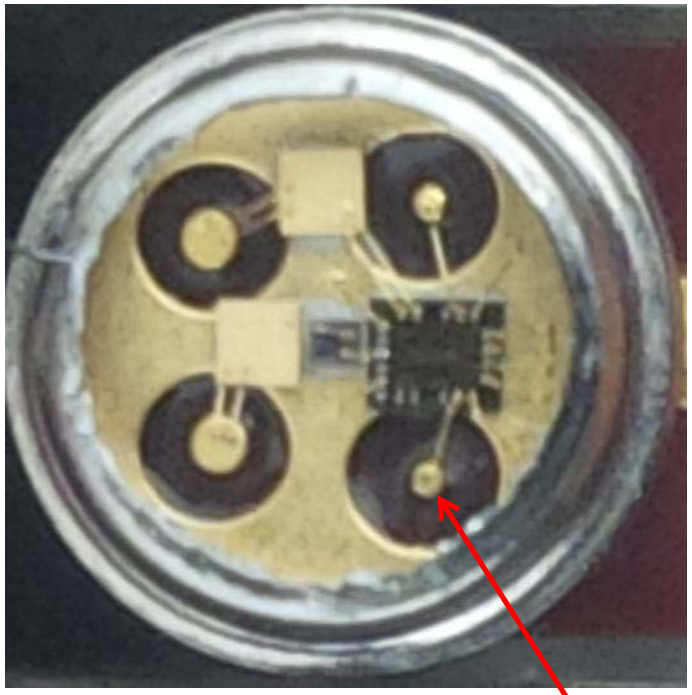
APD Bonding Example



Use a header with 50Ω pins