

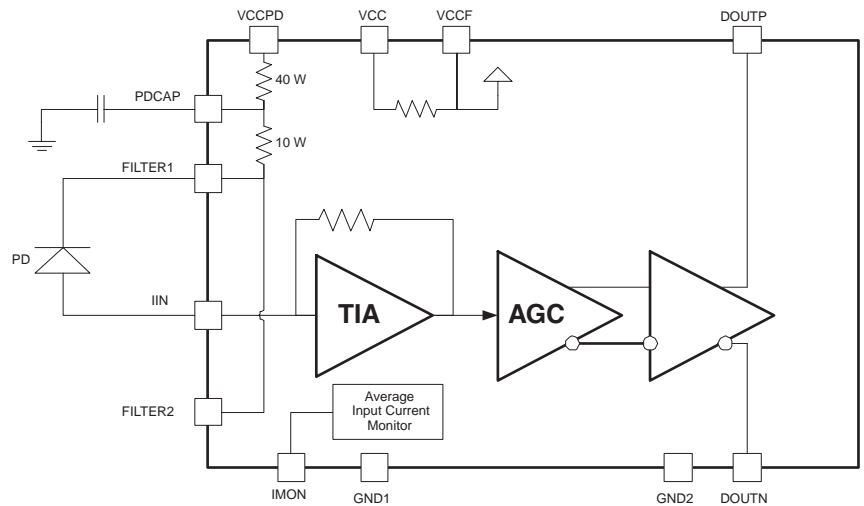
VSC7878

VITESSE®

10 Gbps Linear Transimpedance Amplifier



BLOCK DIAGRAM:



FEATURES:

- ▶ Integrated AGC
- ▶ TO-46 can die size
- ▶ Integrated photo detector bias circuit
- ▶ Integrated photo current monitor
- ▶ Available in bare die

BENEFITS:

- ▶ Linear operation over the input power range of the device
- ▶ Enables high volume ROSA assembly
- ▶ Provides the best RF match to the photo detector and reduces the component count inside the ROSA
- ▶ Used for fiber alignment and diagnostic capabilities
- ▶ Fully tested, known good die

APPLICATIONS:

- ▶ 10 G receiver optical sub-assemblies:
 - 9.983 Gbps SONET OC-192/SDH STM-64
 - 10.3 Gbps Ethernet
 - 10.5 Gbps Fibre Channel
 - 10.7 Gbps OTN G.709/G.975
 - 12.5 Gbps SONET with FEC
 - DWDM SONET/SDH
- ▶ Transponders:
 - XENPAK, X2, XPAK modules
 - 300-pin MSA modules
- ▶ Transceivers:
 - XFP modules

SPECIFICATIONS:

- ▶ Supply voltage: 3.3 V +/- 10%
- ▶ Total harmonic distortion: 3% (typical)
- ▶ Differential output swing: 500 mV (linear operation)
- ▶ Bandwidth: 8 GHz (typical)
- ▶ Sensitivity: -18 dBm OMA (typical)
- ▶ Max input current for linear operation: 2 mA p-p (typical)
- ▶ Operating temperature from -30° to 105° C die backside

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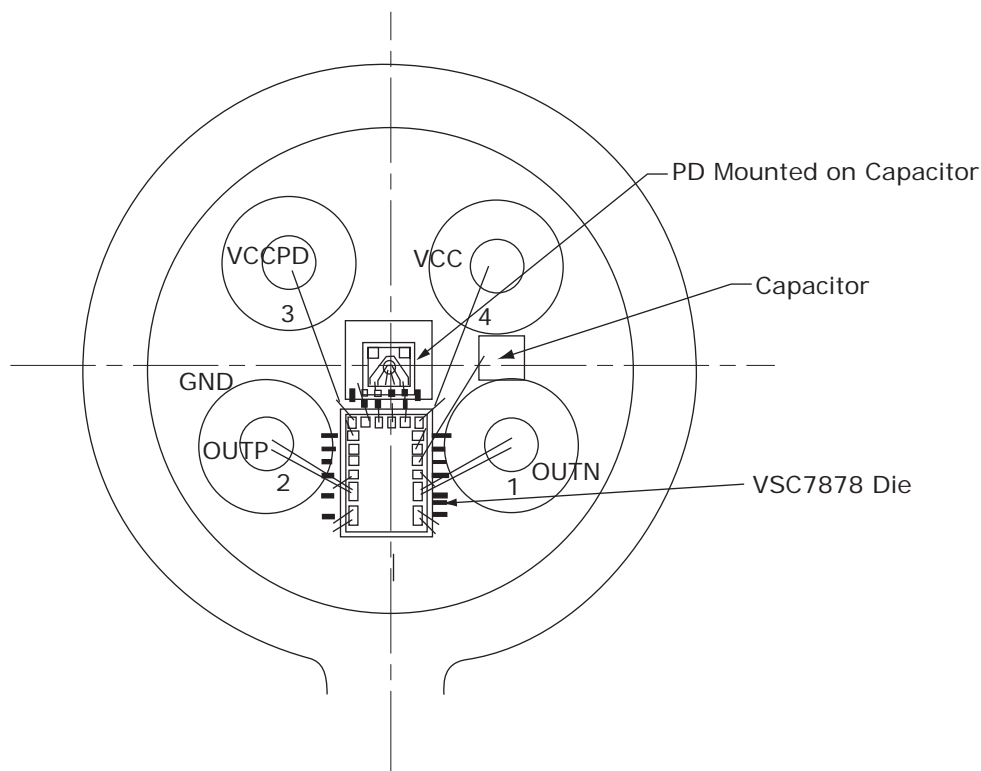
10 Gbps Linear Transimpedance Amplifier

GENERAL DESCRIPTION:

The VSC7878 is a 10.3 Gbps transimpedance amplifier (TIA) designed for use in 10GBASE-LRM optical communication networks. The VSC7878 is intended for use with a PIN or APD photodetector and operates over a wide dynamic input range while maintaining excellent linearity. The gain varies to maintain linear

amplification for input signals up to 2 mA maximum. A DC compensation circuit reduces the penalty of low extinction ratio signals. The VSC7878 also provides photodetector power supply filter components and has a photocurrent monitor output.

WIRE BONDING DIAGRAM:



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