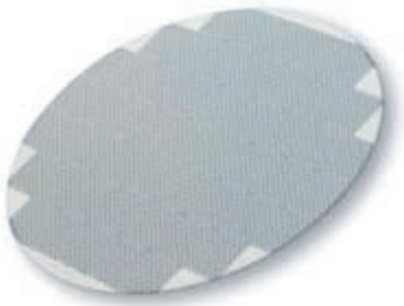
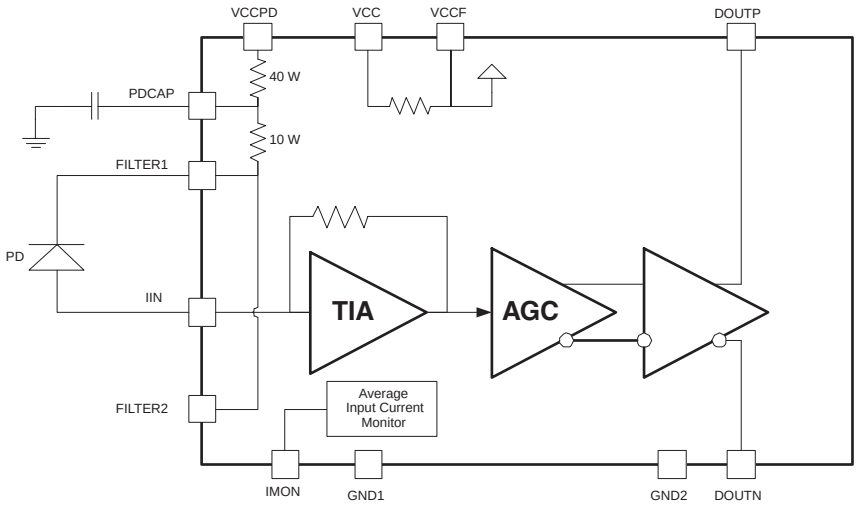
VSC7878

VITESSE®

10 Gbps Linear Transimpedance Amplifier



BLOCK DIAGRAM:



FEATURES:	BENEFITS:
Integrated AGC	Linear operation over the input power range of the device
TO-46 can die size	Enables high volume ROSA assembly
Integrated photo detector bias circuit	Provides the best RF match to the photo detector and reduces the component count inside the ROSA
Integrated photo current monitor	Used for fiber alignment and diagnostic capabilities
Available in bare die	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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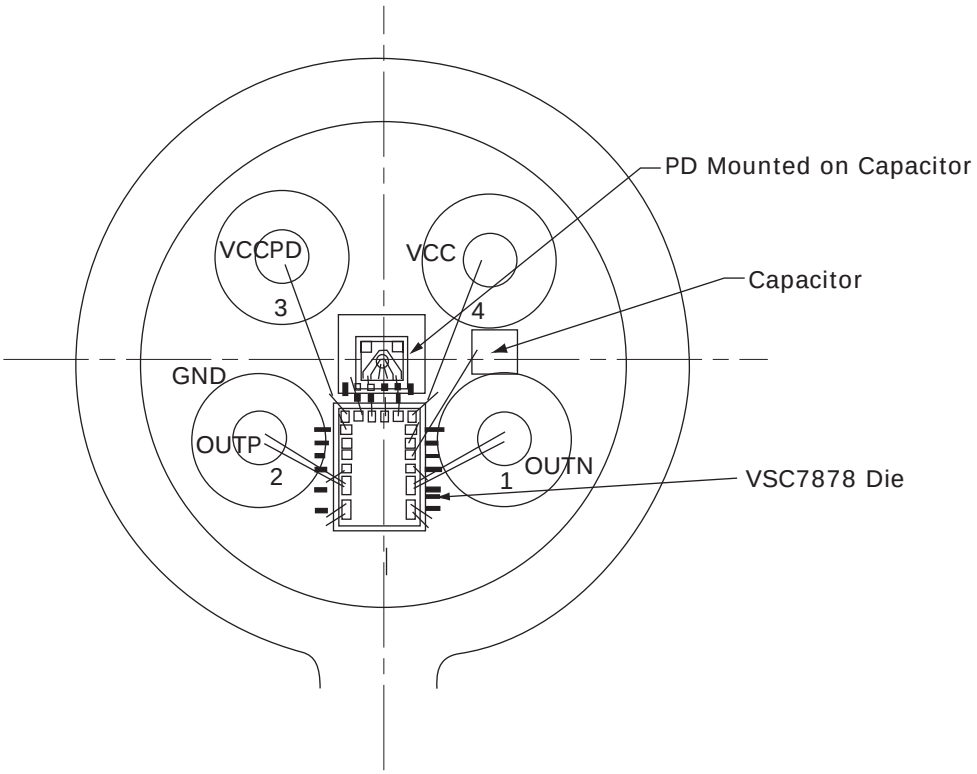
GENERAL DESCRIPTION:

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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