

## ***Power Amplifier IC Delivers High Voltage And High Current***

[Apex Microtechnology's](#) PA164 is a high-voltage operational amplifier IC designed for high density power applications. Housed in a QFP style package, this monolithic (single die) amplifier delivers an output voltage of 200 V and provides 1 A of continuous current, 4 A peak. The new amplifier adds to the company's portfolio of IC- and hybrid-style power amps, offering higher power performance than existing IC power amps, while also incorporating features that were formerly only available in the hybrid products.

"The PA164 offers high voltage and high current simultaneously that other ICs we have previously introduced were unable to provide. Typically we have been able to achieve one or the other in our IC designs. For example, PA79 provides a high voltage of 350 V with 200 mA of current," says Apex's Ben Otto.

Describing the new features he adds, "Our engineers were also able to incorporate features (such as comprehensive system protection) into the PA164 that are typically seen in our hybrid product line." Otto also notes that the IC's QFP package includes a heat slug on top that allows for "greater versatility in heat management." Users can mount a heatsink over a single IC or an array of PA164 devices.

The PA164 targets a wide range of applications including adjustable voltage and current sources, test equipment, piezo electric positioning, electrostatic transduction, electrostatic deflection, and focusing for deformable mirrors.

Contributing to the amplifier's power performance is its use of separate supplies for the amplifier core and the output stage, which optimize power dissipation within the device. Other features include a temperature-compensated current limit, an output disable function, and an overcurrent flag which allows for a flexible system protection. External compensation provides the user options in choosing optimum gain and bandwidth for their application (see the figure).

Another member of the PA164's product family is due to be released soon. The new power amplifier IC, the PA165, will deliver even higher current (4 A continuous, 10-A peak), while incorporating the same features and housed in the same QFP package.

For more information on the PA164/165 see the PA164 product [page](#) and the [datasheet](#).

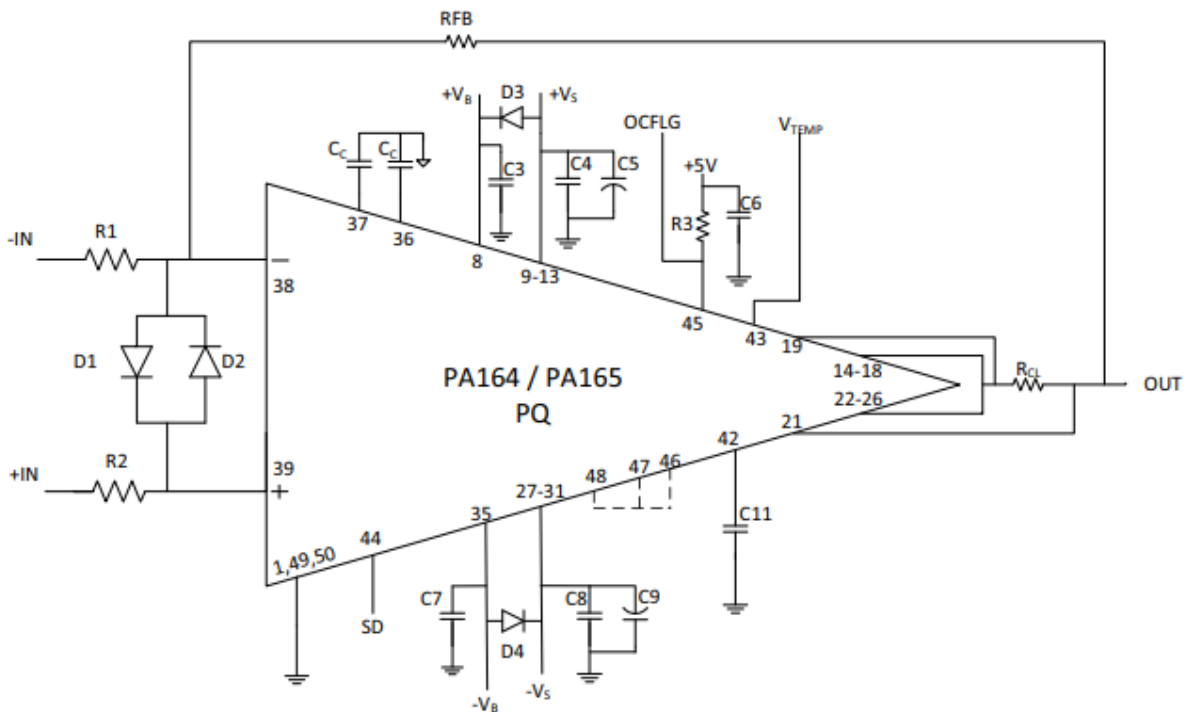
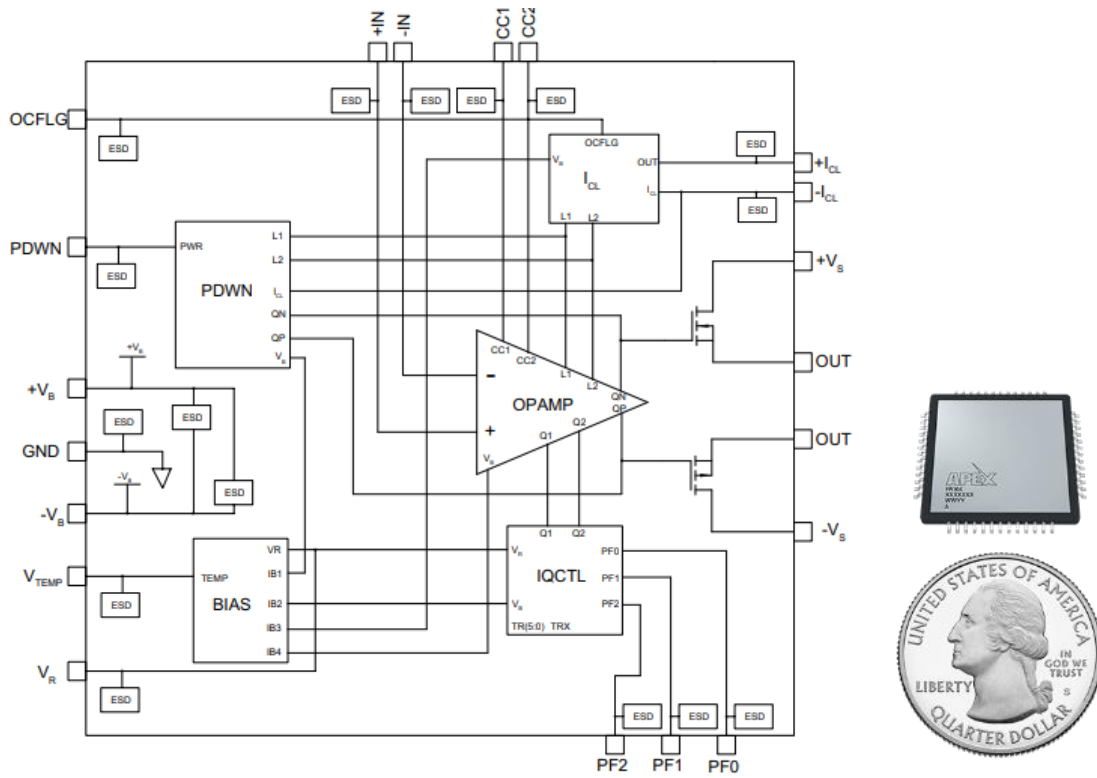


Figure. Internal block diagram, package photo and typical application circuit for the PA164 power amplifier IC (and soon to be released PA165).