



PA164 - PA165

4A/10A PEAK, 200V Multi-Purpose Power Amplifier ICs



**SURFACE MOUNT WITH HEAT SLUG ON TOP
52-PIN QFP PACKAGE STYLE**

Footprint: 22mm x 22mm

FEATURES

- Low cost, monolithic (single chip) design
- High continuous output current – 1A/4A (PA164/PA165)
- High PEAK output current – 4A/10A (PA164/PA165)
- High supply voltage 200V
- Internal power dissipation 28W
- Temperature compensated current limit with over-current flag
- Package
 - Surface mount with heat slug on top for efficient heat sinking of multiple devices

Product Overview

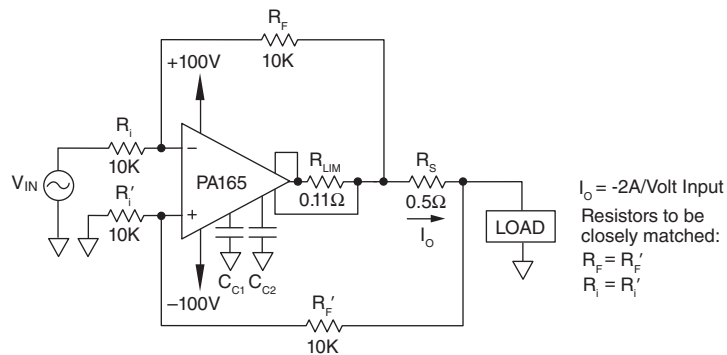
The PA164, PA165 are high density, multi-purpose power amplifier ICs that utilize a proprietary monolithic MOSFET technology and silicon design to deliver new benchmarks in performance and thermal management for single-chip power amplifiers. With a footprint measuring just 22mm x 22mm, these devices are capable of providing 1A (PA164) and 4A (PA165) output current continuously, and up to 4A (PA164) and 10A (PA165) PEAK on voltage supplies up to 200V, while dissipating up to 28W of internally generated power.

The PA164/PA165 uses separate supplies for the amplifier core and the output stage to help optimize overall power dissipation capabilities. Thermal efficiency is further enhanced by the QFP style package that features a heat slug on top, allowing for the mounting of a single heatsink over a single IC or an “array” pattern of these devices.

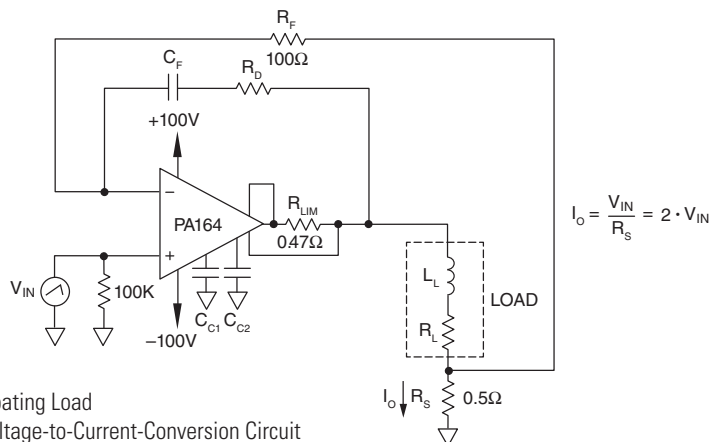
Onboard protection for these devices includes a user-defined, temperature compensated current limit and a temperature sensor output. The addition of an output disable function and an over current flag simplify the implementation of robust failure protections on the system level.

Typical Applications

Designers can maximize the real estate saving size advantage offered by the PA164/PA165 by using multiple devices in circuit designs with high power requirements. A wide range of target applications include adjustable voltage and current sources, test equipment, piezo electric positioning, electrostatic transducers, electrostatic deflection, and focusing for deformable mirrors.



Improved Howland Current Pump for Grounded Load



Floating Load
Voltage-to-Current-Conversion Circuit

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4A/10A PEAK, 200V Multi-Purpose Power Amplifier ICs

Product Specifications - Key Parameters

Specification Parameter	PA164	PA165	PA441
Output Current Continuous	1A	4A	60mA
Output Current PEAK	4A	10A	120mA
Supply Voltage Operation	200V	200V	350V
Internal Power Dissipation	28W	28W	12W
Onboard Over Current Protection	Yes	Yes	Yes
Overcurrent Flag and Output Disable	Yes	Yes	No
Built-in Temperature Sensor	Yes	Yes	No
Gain Bandwidth Product @ 1MHz	10.3MHz	10.3MHz	10MHz
Slew Rate	36V/ μ s	36V/ μ s	32V/ μ s
RoHS Compliant	Yes	Yes	Yes
Package Style	QFP style, heat slug on top	QFP style, heat slug on top	Plastic, surface-mount PSOP with heat slug – or – plastic, thru-hole, hermetic PIP with alumina ceramic substrate
Package Footprint Measurement	22mm x 22mm	22mm x 22mm	16mm x 14.8mm – PSOP 25.4mm x 4.72mm – PIP

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