Compact modules reduce component count, shrink PCB size up to 70 percent

International Rectifier introduced the PowIRaudio family of integrated power modules for high performance home theater systems and car audio amplifiers. The new devices integrate a PWM controller and two digital audio power MOSFETs in a single package to offer a highly efficient, compact solution that reduces component count, shrinks PCB size up to 70 percent and simplifies Class D amplifier design.

The combination of an advanced audio controller IC with MOSFETs fully optimized for audio performance results in improved efficiency, THD, and EMI, allowing the IR43xxM family to operate without a mechanical heatsink over a wide power supply range on either a single or split power supply. High voltage ratings and noise immunity ensure reliable operation over various environmental conditions.

“IR’s existing Class D solutions are proven to offer equivalent audio performance to Class AB amplifiers while providing the additional benefits of higher efficiency and smaller size,” said Jun Honda, Director of Audio Systems Engineering, IR’s Energy Saving Products Business Unit. “The high level of integration of our new PowIRaudio modules enables customers to quickly and easily design their high performance Class D Audio systems.”

The single channel IR4301M and dual channel IR4302M offer the flexibility and convenience of building stereo amplifier and multi-channel designs in various channel configurations, while the devices’ 5x6 mm and 7x7 mm PQFN packages

enhance the benefit of utilizing a smaller size of Class D topology.

Other key features common to the family include over-current protection, thermal shutdown, internal/external shutdown and floating differential input. The IR4302M also offers clip detection.

A wide range of reference designs are available to further simplify the design of systems using these devices.

Module Specifications

Part Number	No. of channels	Power Supply Voltage	Peak Output Power (RMS per CH)	Package
IR4301MPbF	1	80V or +/-40V	130W	PQFN 5x6
IR4302MPbF	2	80V or+/-40V	70W	PQFN 7x7

Reference designs

Reference Design	Featured Part	Descriptions	Output Power
IRAUDAMP12	IR4301M	IR4301 split power supply	130W*2ch 4? load/no heatsink
IRAUDAMP16	IR4302M	IR4302 split power supply	70W*2ch 4? load/no heatsink
IRAUDAMP17	IR4302M	IR4302 single power supply	100W*2ch 4? load/with heatsink
IRAUDAMP19	IR4301M	IR4301 single power supply	100W*2ch 4? load/with heatsink
IRAUDPS3	IRS27952S	Audio AC/DC power supply	200W +/-30V

Datasheets and an application note are available on the International Rectifier website at www.irf.com [1]

Availability and Pricing

Pricing for the IR43xxM begins at US $2.00 in 10,000-unit quantities. Pricing is subject to change without notice. Production orders are available immediately. The new devices are MSL2 industrial-qualified and RoHS compliant.

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[1] http://www.irf.com/