

Compact PowlRaudio™ Modules for Class D Amplifier Design

Advantages:

- Over current protection
- Thermal shutdown
- Floating differential Input
- Clip detection
- Best-in-class power efficiency and audio performance
- Reduce component count, simplify design
- Compatible with single supply or split rail configuration



The PowlRaudio™ family of devices integrates PWM controller and 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 PowlRaudio™ 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.

The single channel IR4301M and IR4311M and dual channel IR4302M and IR4312M devices 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.

IC SPECIFICATION:

| Part Number | No. of channels | Power Supply Voltage | Peak Output Power (RMS per CH) | Package |
|-------------|-----------------|----------------------|--------------------------------|------------|
| IR4301MPbF | 1 | 80V or +/-40V | 130W | PQFN 5x6mm |
| IR4311MPbF | 1 | 40V or +/-20V | 35W | PQFN 5x6mm |
| IR4302MPbF | 2 | 80V or +/-40V | 70W | PQFN 7x7mm |
| IR4312MPbF | 2 | 40V or +/-20V | 35W | PQFN 7x7mm |

REFERENCE DESIGNS:

| Reference Design | Featured Part | Descriptions | Output Power |
|------------------|---------------|----------------------------|-----------------------------------|
| IRAUDAMP12 | IR4301M | IR4301 split power supply | 130W*2ch 40hms load/no heatsink |
| IRAUDAMP15 | IR4311M | IR4311 single power supply | 35W*2ch 40hms load/no heatsink |
| IRAUDAMP16 | IR4302M | IR4302 split power supply | 70W*2ch 40hms load/no heatsink |
| IRAUDAMP17 | IR4302M | IR4302 single power supply | 100W*2ch 40hms load/with heatsink |
| IRAUDAMP18 | IR4312M | IR4312 single power supply | 35W*2ch 40hms load/no heatsink |
| IRAUDAMP19 | IR4301M | IR4301 single power supply | 130W*2ch 40hms load/with heatsink |
| IRAUDPS3 | IRS27952S | Audio AC/DC power supply | 200W +/-30V |



IRAUDAMP12



IRAUDAMP16



IRAUDAMP18



IRAUDAMP15



IRAUDAMP19



IRAUDAMP17



IRAUDPS3