

IRS2052M 2-Channel Class D Audio Driver IC

IR Advantages:

- 2 channel
- Integrated analog input
- Advanced start and stop click noise reduction
- Versatile protection control enabling latched, non-latched, or host controlled shutdown function
- Clipping detection
- External thermal sensor input
- On-chip thermal shutdown with warning
- Programmable dead-time generation
- Under voltage protection
- High noise immunity



The IRS2052M 2-Channel Class D Audio IC is specifically designed for high performance home theater systems and car audio amplifiers requiring a compact solution. The 200V device integrates two channels into a single IC.

The 200 V device integrates two channels into a single IC. Features include selectable deadtime and programmable bi-directional over-current protection, integrated clock oscillator and click-less start and stop.

The IRS2052M is optimized to work with IR's extensive range of digital audio MOSFETs addressing output power from 50W to 300W to reduce component count and PCB space while achieving improved performance, efficiency, THD and EMI.



Digital Audio MOSFETs

The IRS2053 audio IC may be paired with an extensive range of IR digital audio MOSFETs addressing output power from 50W to 150W. These MOSFETs, have been optimized around parameters critical to audio performance such as efficiency, THD, and EMI. For detailed performance information, please refer to the MOSFET data sheets available online at www.irf.com.

The chipset forms a Class D audio solution that is much smaller than a comparable Class AB design. In a 100W application, for example, the IRS2053 IC and IRF6665 DirectFET® MOSFETs reduce board size by 50% to the previous offerings.

IC Specification:

Part Number	Package	Offset Voltage	Sink/Source Current	VCC Range (with UVLO)	Min/Max Output Voltage	Propagation Delay TON/OFF
IRS2052M	MLPQ	200V~+ / -100V	0.6 / 0.5A	10-15V	10-15V	325/350ns

Companion Digital Audio MOSFETs

DirectFET®				
Clipping Power	Without Heatsink		With Heatsink	
	4 Ohms	8 Ohms	4 Ohms	8 Ohms
50W - 100W	IRF6645	IRF6665	IRF6665	IRF6665
100W - 120W	IRF6645		IRF6645	IRF6775M
120W - 200W			IRF6645	IRF6775M



Reference Design:

IRAUDAMP10

Two-channel 300 W (4mOhms) Half-bridge Class-D Audio Power Amplifier

- 300 W x 2 channels, (THD=1%, 1kHz, 4 Ohms)
- 0.008% THD+N distortion @ 100W, 4 Ohms
- Residual noise 220 μ V, IHF-A weighted, AES-17 filter
- 90% Efficiency @ 300W, 4 Ohms, Class-D Stage
- OCP, OVP, UVP & OTP
- Self-oscillating half-bridge topology with optional clock synchronization
- Featuring IRS2052M Controller and Gate Driver IC and IRF6775 DirectFET MOSFETs

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