



Class D Audio Amplifier IC Market Report, 2007-2008

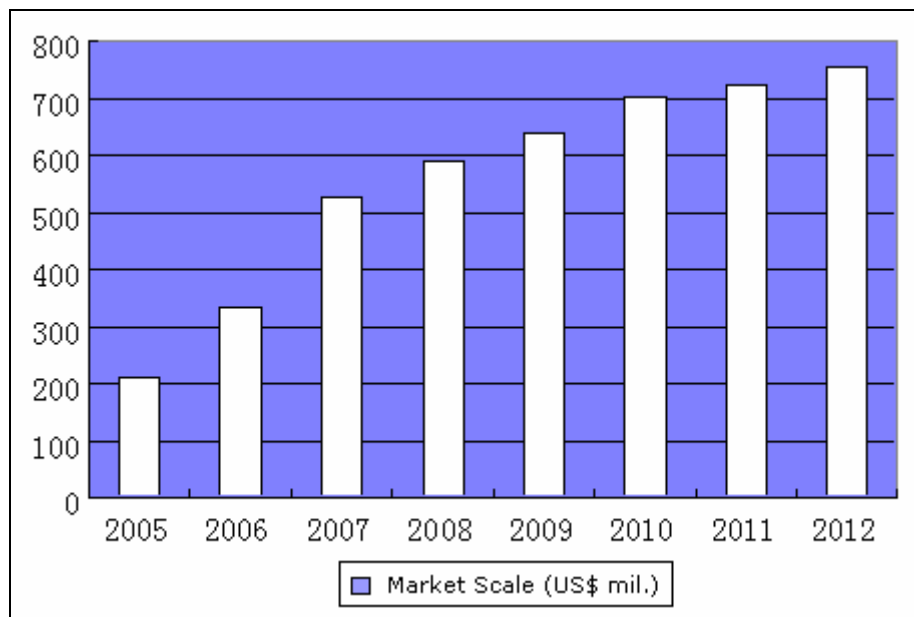
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Development of Class D Audio IC

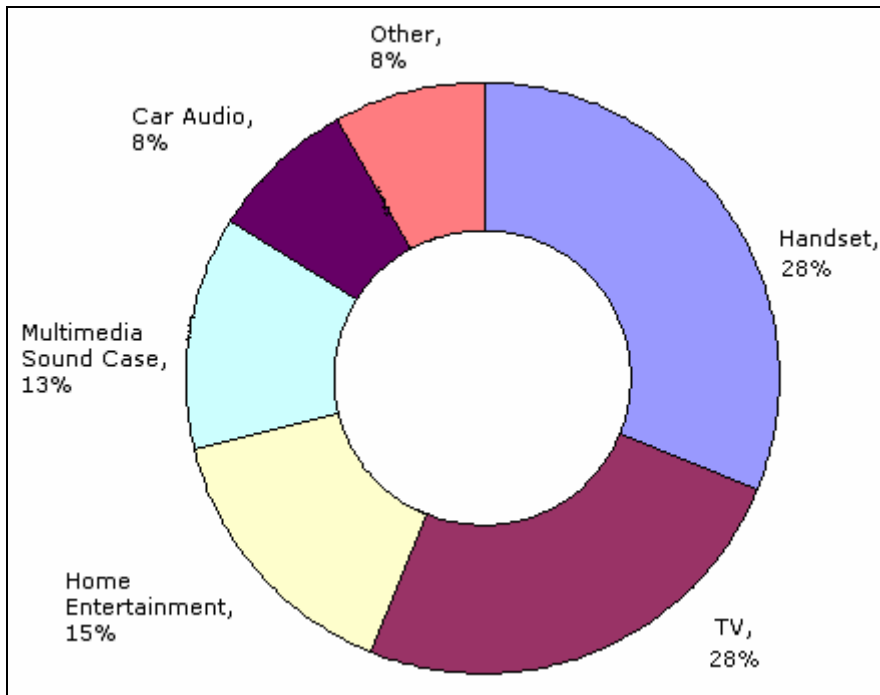
Nowadays, most of portable electronics, home audio/video device and the more and more car audio systems all start using class-D audio amplifier. The market of Class-D audio amplifier is growing at a rate of over 50 percent.

Statistics and Forecast of Global Class-D Audio Amplifier Market Size, 2005-2012

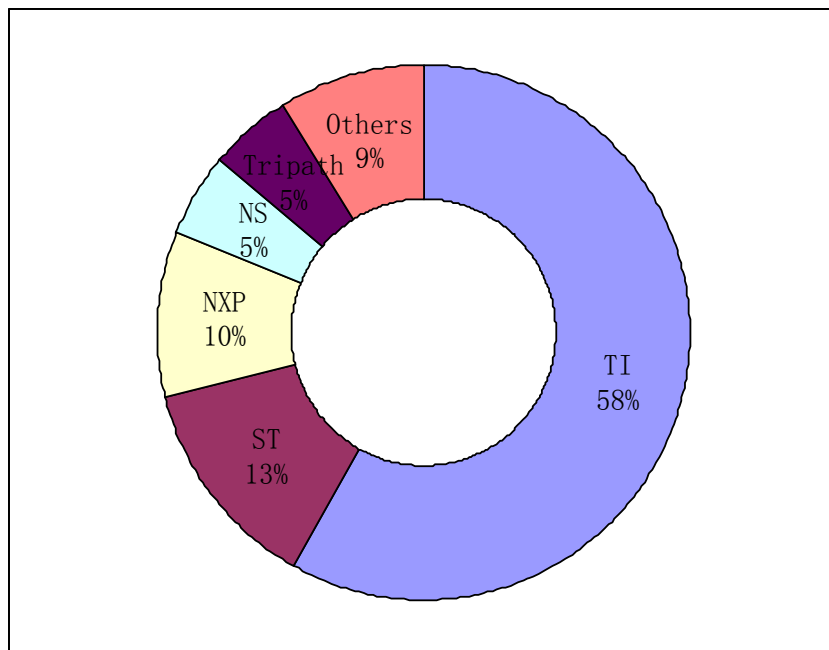
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|--------------------------|------|------|------|------|------|------|------|------|
| Market Scale (US\$ mil.) | 210 | 332 | 525 | 591 | 639 | 702 | 723 | 756 |



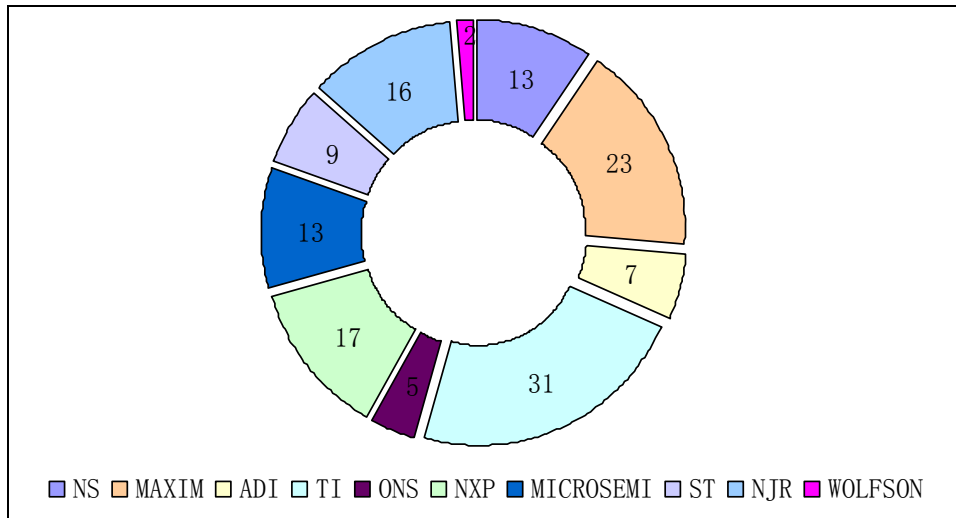
Revenue from Class-D Audio Amplifier by Application, 2008



Forecasted Market Shares of World's Major Class-D Audio Amplifier IC Manufacturers, 2008



Statistics on Released Amount of Global Main Class-D Audio IC



Source: ResearchInChina

Currently, ST, Philips, ADI, Tripath and TI are the leading manufacturers in flat panel display audio field.

Features of Class D Audio IC Applied to Flat Screen TV

| | TI | MAXIM | ADI | Tripath |
|--|-----------|-----------|-----------|---------|
| Model | TPA3005D2 | MAX9704 | AD1990 | TA2024 |
| Input Voltage | 8-18V | 10-25V | 5-12V | 6-16V |
| THD | 0.2% | 0.07% | 0.005% | 0.03% |
| S/R(dB) | 97 | | 101.5 | |
| Area | | 7mm x 7mm | 9mm x 9mm | |
| Package | QFP | TQFN | LFCSP | PSOP |
| Output Power | 12W | 15W | 10W | 15W |
| Price (min. order quantity: 1000 units, US\$/unit) | 3 | 4 | 2.9 | |

TI, National Semiconductor, MAXIAM and NJR are the leading manufacturers in portable devices audio filed.

Examples of Class D Audio Amplifier IC Applied to Mobile Phone

TI TPA2012D2 is a kind of stereo class D audio amplifier. It can easily realize special sound effects, while its timbre is not good and the price is relatively high.

National Semiconductor LM4670 has super power, with the lowest price, highest price performance ratio, minimum package area and good timbre.

MAXIM MAX9700 has good timbre. Its S/R reaches 90 db with 94% efficiency. It is mainly applied to music mobile phones, with advantages of reasonable price and small package area. However, its output power is not high. The internal frame of MAXIM MAX9700 adopts fixed frequency FEM mode and spread spectrum mode, which can not only reduce distortion, but also reduce electromagnetic interference (EMI)

ONS NCP2820 has good timbre and high output power, which is mainly applied to music mobile phone and handfree phone. As its package area is small, it is also applied to folding handset. But its price is on the high side.

LG mobile phones (LG-KV1300, LG-SV130, LG-SV140 and LG-SV9140) have already adopted TI TPA2005D1 chip. TI TPA2005D1 has good timbre and high price performance ration. However, it has some disadvantages, such as low output power and large package area.