

### GENERAL DESCRIPTION

The ft2145B is a high-efficiency, filterless Class-D audio power amplifier with automatic level control (ALC). It operates from 2.7V to 5.5V supply. When powered with 5V supply voltage, the ft2145B is capable of delivering 3.2W into 4Ω load or 1.8W into 8Ω load with 10% THD+D.

The ft2145B features ALC on the audio output signals, which detects the output clipping caused by the over-level input signal and automatically adjusts the voltage gain of the amplifier to eliminate the clipping while maintaining the maximally-allowed dynamic range of the audio output signals. The ALC also eliminates the output clipping due to low battery supply voltage.

As a Class-D power amplifier, the ft2145B features high efficiency (up to 90%) and high PSRR (75dB at 217Hz), which make the device an ideal audio solution for portable devices that are powered by a single-cell lithium battery.

### APPLICATIONS

- Cellular handsets
- Portable navigation devices
- Multimedia internet devices

### APPLICATION CIRCUIT

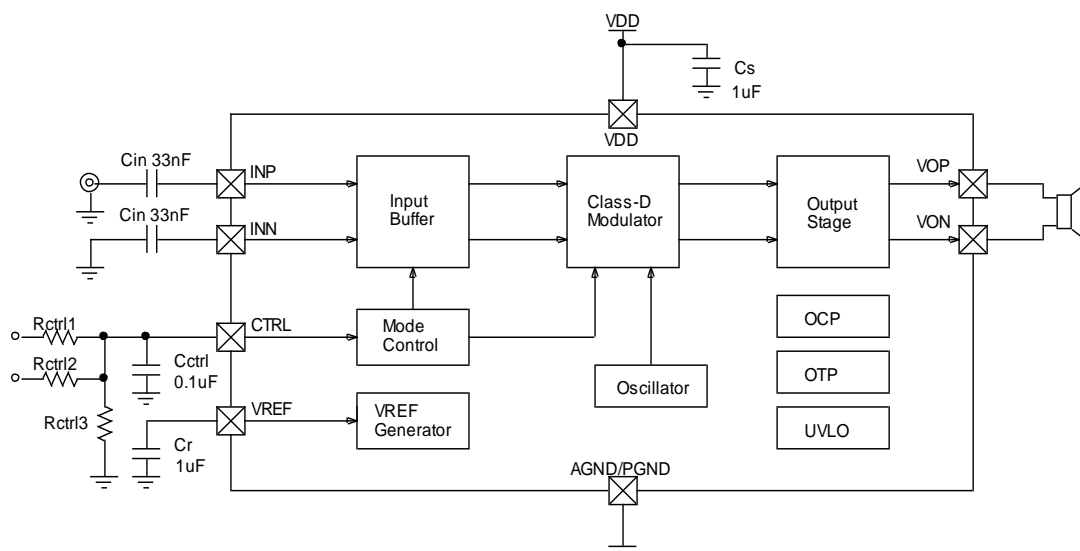
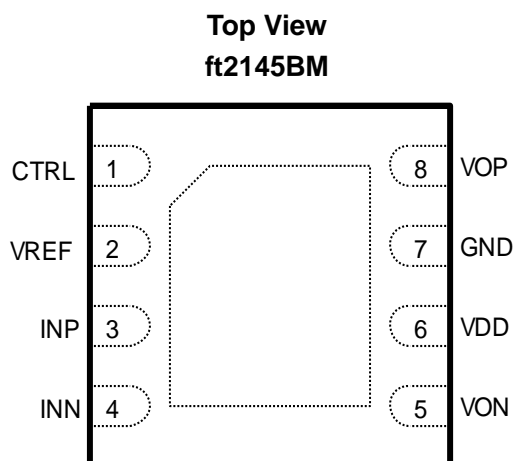


Figure 1: Typical Application Circuit Diagram

### FEATURES

- Filterless Class-D operation
- Automatic level control to eliminate output clipping
- High efficiency up to 90%
- Maximum output power at 5V supply (ALC Off)  
3.2W (4Ω load, 10% THD+N)  
1.8W (8Ω load, 10% THD+N)
- Constant output power at 5V supply (ALC On)  
2.4W (4Ω load, THD+N < 0.6%)  
1.35W (8Ω load, THD+N < 0.6%)
- Constant output power at 3.6V supply (ALC On)  
1.2W (4Ω load, THD+N < 0.6%)  
0.7W (8Ω load, THD+N < 0.6%)
- Low THD+N < 0.05%  
(VDD=3.6V, f=1kHz, RL=8Ω, PO=0.5W)
- Low quiescent current: 2.2mA @ VDD=3.6V
- Low shutdown current < 0.1μA
- High PSRR: 75dB @ 217Hz
- Short-circuit & thermal overload protection
- Fast startup time: 4ms
- Available in MSOP-8L package

## PIN CONFIGURATION AND DESCRIPTION



SYMBOL	MSOP-8L	DESCRIPTION
CTRL	1	Mode control input for ALC and Shutdown.
VREF	2	Analog reference at VDD/2, the common-mode bias for audio inputs.
INP	3	Positive audio input terminal.
INN	4	Negative audio input terminal.
VON	5	Negative BTL output terminal.
VDD	6	Power supply.
GND	7	Power ground.
VOP	8	Positive BTL output terminal.

## ORDERING INFORMATION

PART NUMBER	TEMPERATURE RANGE	PACKAGE
ft2145BM	-40°C to +85°C	MSOP-8L