

GENERAL DESCRIPTION

The ft2012 is a high efficiency stereo, filterless, Class-D audio power amplifier. The ft2012 can operate from 2.7V to 5.5V supply. When powered with 5V voltage, the ft2012 can deliver 2.8W/channel (with 4Ω load) or 1.65W/channel (with 8Ω load). When packaged in WCSP, the output power of the ft2012 will be thermally limited to a lower value.

As a Class-D audio amplifier, the ft2012 features 90% efficiency and 75dB PSRR at 217Hz which make the device ideal for use in battery-supplied portable electronic devices. The ft2012 also features independent shutdown control for each channel. The gain can be selected to 6, 12, 18, or 24dB utilizing the G0 and G1 gain-select pins. Furthermore, the ft2012 minimizes click and pop noise during the turn-on and shutdown.

The ft2012 is available in WCSP-16 and QFN4X4-20 packages.

APPLICATIONS

- Mobile phone
- Portable digital assistant (PDA)
- Mini sound box

APPLICATION CIRCUIT

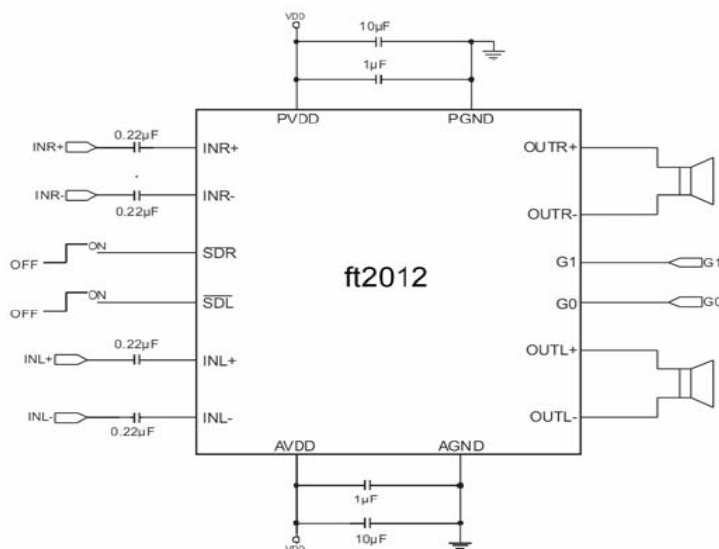
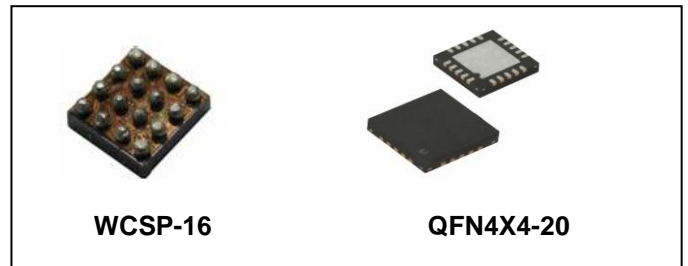


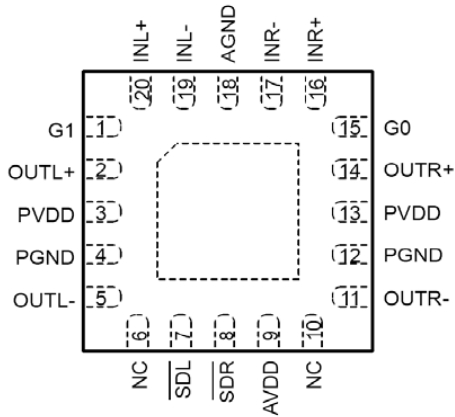
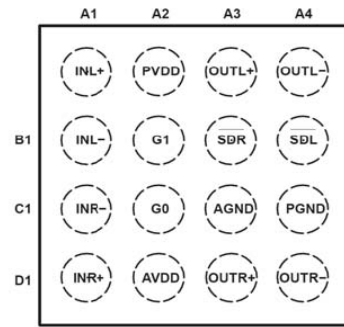
Figure 1: Typical Audio Amplifier Application Circuit

FEATURES

- Output Power at 5V
 - 2.8W/CH into 4Ω load at 10% THD
 - 1.65W/CH into 8Ω load at 10% THD
- High efficiency up to 90%
- High PSRR: 75dB (typical) at 217Hz
- Low THD+N: 0.10% at 1KHz (3.6V/8Ω/0.5W)
- Low quiescent current: 3.5mA at 3.6V with no load
- Shutdown current: 0.1µA (typical)
- Available in WCSP-16 and QFN4X4-20 packages



PIN CONFIGURATION AND DESCRIPTION


QFN 20 Top View

WCSP 16 Top View

NAME	QFN2X2-20	WCSP-16	I/O	DESCRIPTION
INR+	16	D1	I	Right channel positive input.
INR-	17	C1	I	Right channel negative input.
INL+	20	A1	I	Left channel positive input.
INL-	19	B1	I	Left channel negative input.
SDR	8	B3	I	Right channel active low shutdown control.
SDL	7	B4	I	Left channel active low shutdown control.
G0	15	C2	I	Gain select (LSB).
G1	1	B2	I	Gain select (MSB).
PVDD	3,13	A2	I	Power supply (must be same voltage as AVDD).
AVDD	9	D2	I	Analog supply (must be same voltage as PVDD).
PGND	4,12	C4	I	Power ground.
AGND	18	C3	I	Power ground.
OUTR+	14	D3	O	Right channel positive differential output.
OUTR-	11	D4	O	Right channel negative differential output.
OUTL+	2	A3	O	Left channel positive differential output.
OUTL-	5	A4	O	Left channel negative differential output.
NC	6,10	-	-	No internal connection.
Thermal Pad				Connect the thermal pad of QFN or WCSP package to PCB ground.

ORDERING INFORMATION

PART NUMBER	TEMPERATURE RANGE	PACKAGE
ft2012W	-40°C to +85°C	WCSP-16
ft2012Q	-40°C to +85°C	QFN4X4-20