ML2213

Speech Synthesiser with 1.5MBit ROM & Melody Circuit
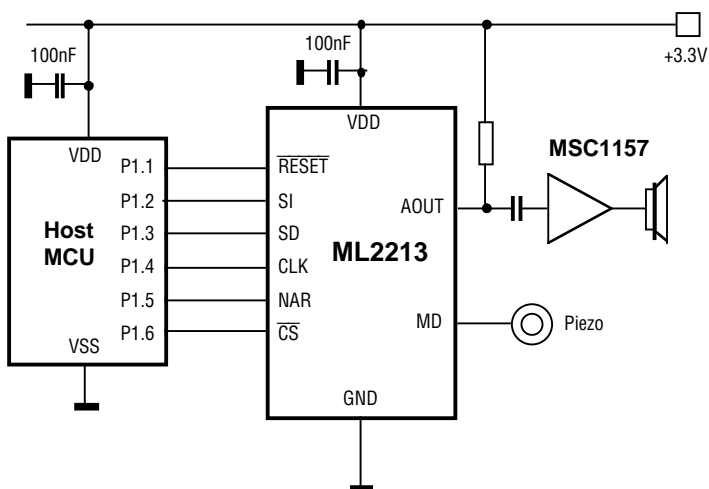
GENERAL DESCRIPTION

The ML2213 combines a Mask-ROM speech synthesiser with a melody circuit and comes with a simple serial interface to an microcontroller. It has an analog outputs for an amplifier (speech playback) and a built-in driver for a piezo-electric speaker (melody playback). ML2213 is primarily designed for application in portable cellular phones.

ML2213 will come in a very small, 6.4 x 5.0mm sized 14-pin SSOP package (0.5mm pitch) housing 1.5MBit mask ROM for speech and melody data. Selectable algorithms include 4-Bit OkiADPCM and linear and non-linear 8-Bit OkiPCM (the latter achieves quality equivalent to 10-Bit linear PCM). In ADPCM mode and 4kHz sampling provided (from 4 to 16kHz selectable), the device outputs 90 seconds speech plus melodies. For both, 247 channels can be defined. ML2213 comes in an ultra-small package, operates over a wide supply range from +2.2 ~ 5.5V and satisfies the industrial temperature range.
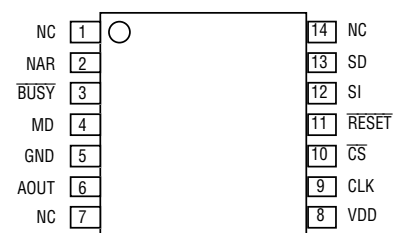
FEATURES

- Internal 1.5MBit ROM
- 4-Bit OkiADPCM algorithm
- 8-Bit linear OkiPCM, 8-Bit Oki non-linear PCM
- Sampling frequencies:
    4.0, 5.3, 6.4, 8.0, 10.7, 12.8, 16.0kHz
- Playback time :
    90 sec @ 4KHz, 60 sec @6.4kHz
- 12-bit D to A converter built-in
- Single tone output Melody circuit
    - musical scale: 31, note & rest: 63, tempo: 30
    - built-in piezo speaker driver

- Low-pass filter built-in
- Speech and melody phrases: 247
- Master clock: 4.096, 8.192, or 16.384MHz
    (by means of mask option)
- Power supply voltage: +2.2 ~ 5.5V
- Operating temperature -40 to +85°C
- 14-pin SSOP (SSOP14-P-44-0.50-K),
    6.4(W) x 5.0(L)mm
- Product name ML2213MB
- Typical application is for cellular phones

TYPICAL APPLICATION DIAGRAM

PIN ASSIGNMENT

PACKAGE DIMENSIONS

14-pin SSOP

Unit in millimeters, unless otherwise specified.