## INTRODUCTION

SN67d03 Series is a 3 seconds one-channel single chip voice synthesizer IC which contains a PWM Direct Drive Circuit. There are two IO pins (one input, one IO), which can be configured as two trigger pins, or one trigger and one output. By filling a coding form, users' applications, including section combination, trigger modes, and different output status, can be easily implemented.

## FEATURES

- Single power supply 2.4V – 5.1V
- 3 seconds voice capacity is provided
- 1-bit input port (P1) and 1-bit I/O port (P2) are provided
- 16*1 bits RAM are provided
- Built in a high quality speech synthesizer
- Two different playing rate, 6KHz and 8KHz.
- Built in a PWM Direct Drive circuit output BUO1 and BUO2 directly connected to Speaker for sound output
- System clock: 2MHZ
- Low Voltage Reset

## PIN ASSIGNMENT

| Symbol | I/O | Function Description |
|---|---|---|
| P1 | I | Input port |
| P2 | I/O | I/O port |
| VDD | I | Positive power supply |
| OSC | I | Oscillation component connection pin |
| GND | I | Negative power supply |
| BUO1 | O | PWM output 1 |
| BUO2 | O | PWM output 2 |

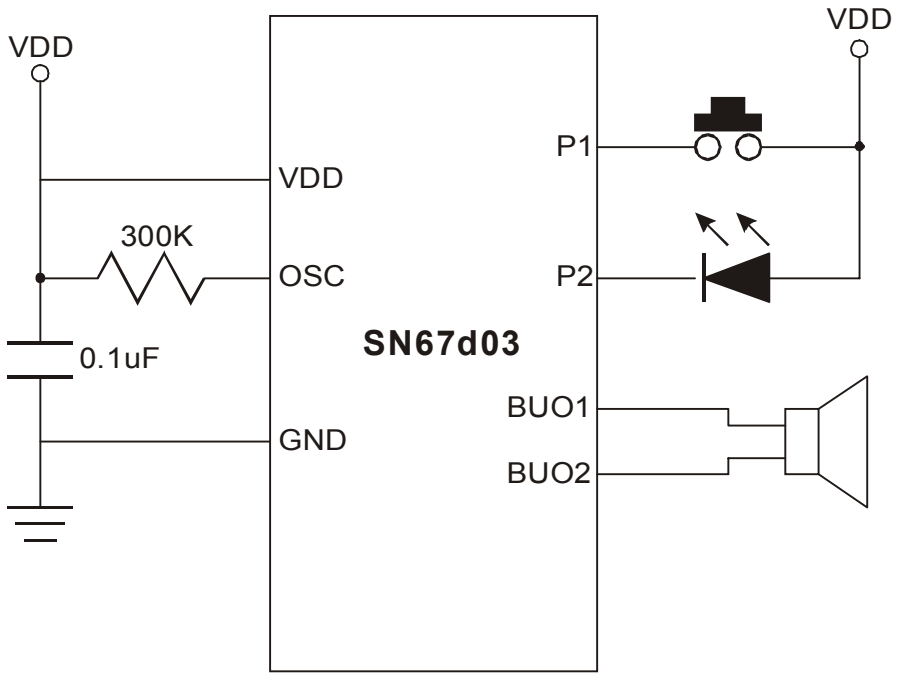
## ■ ABSOLUTE MAXIMUM RATINGS

| Items | Symbol | Min | Max | Unit. |
|---|---|---|---|---|
| Supply Voltage | $V_{DD}$-V | -0.3 | 6.0 | V |
| Input Voltage | $V_{IN}$ | GND-0.3 | $V_{DD}$+0.3 | V |
| Operating Temperature | $T_{OP}$ | -20.0 | 70.0 | °C |
| Storage Temperature | $T_{STG}$ | -55.0 | 125.0 | °C |

## ■ ELECTRICAL CHARACTERISTICS

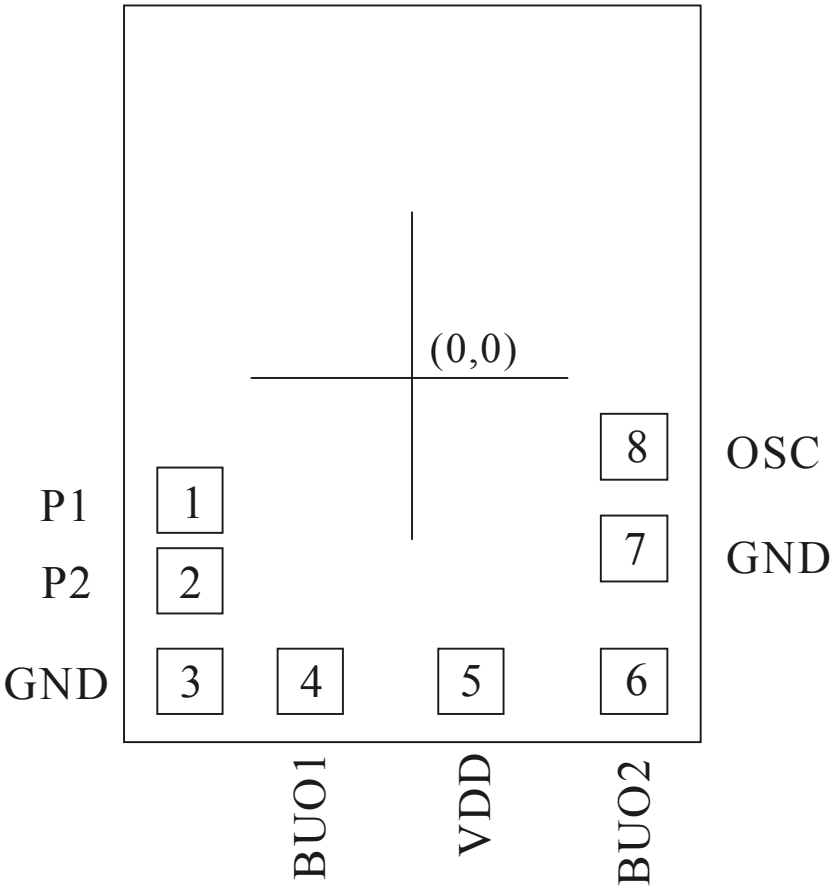
| Item | Sym. | Min. | Typ. | Max. | Unit | Condition |
|---|---|---|---|---|---|---|
| Operating Voltage | $V_{DD}$ | 2.4 | 3.0 | 5.1 | V | |
| Standby current | $I_{SBY}$ | - | - | 2.0 | *u*A | $V_{DD}$=3V, no load |
| Operating Current | $I_{OPR}$ | - | - | 250 | *u*A | $V_{DD}$=3V, no load |
| Input current of P1, P2 | $I_{IH}$ | - | 3.0 | 10.0 | *u*A | $V_{DD}$=3V,$V_{IN}$=3V |
| Drive current of P2 | $I_{OD}$ | 1.5 | 2 | - | *m*A | $V_{DD}$=3V,$V_O$=2.4V |
| Sink Current of P2 | $I_{OS}$ | 2.0 | 3 | - | *m*A | $V_{DD}$=3V,$V_O$=0.4V |
| Drive current of Buo1 | $I_{OD}$ | 100 | 120 | - | *m*A | VDD=3V,Buo1=1.5V |
| Sink Current of Buo1 | $I_{OS}$ | 100 | 120 | - | *m*A | VDD=3V,Buo1=1.5V |
| Drive Current of Buo2 | $I_{OD}$ | 100 | 120 | - | *m*A | VDD=3V,Buo2=1.5V |
| Sink Current of Buo2 | $I_{OS}$ | 100 | 120 | - | *m*A | VDD=3V,Buo2=1.5V |
| Oscillation Freq. | $F_{OSC}$ | - | 2.0 | - | MHz | $V_{DD}$=3V |

## ■ APPLICATION CIRCUIT




Note: Please bond all of $V_{DD}$ and $V_{SS}$ pins.

## ■ BONDING PAD




**SN67d03**

Note: The substrate MUST be connected to Vss in PCB layout.

**DISCLAIMER**

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