

#### INTRODUCTION

SN67030 is a 30 seconds single chip voice synthesizer IC which contains I/O pins and a tiny controller. By programming through the tiny controller, user's applications including section combination, trigger modes, output status, and other logic functions can then be easily implemented.

#### **■ FEATURES**

- Single power supply 2.4V 5.1V
- Built in a tiny controller
- 30 seconds voice capacity are provided
- One 4-bit input ports and two 4-bit I/O ports are provided
- ◆ 64\*4 bits RAM are provided
- Maximum 16k program ROM is provided
- Readable ROM code data
- Built in a high quality speech synthesizer
- Adaptive playing speed from 2.5k-20kHz is provided
- Fixed current D/A output is provided to drive external connected transistor for sound output
- Low Voltage Reset



# ■ PIN ASSIGNMENT

Symbol	I/O	Function Description				
P10	Ι	Bit0 of input port 1				
P11	Ι	Bit1 of input port 1				
P12	Ι	Bit2 of input port 1				
P13	_	Bit3 of input port 1				
P20	I/O	Bit0 of I/O port 2				
P21	I/O	Bit1 of I/O port 2				
P22	I/O	Bit2 of I/O port 2				
P23	I/O	Bit3 of I/O port 2				
P30	I/O	Bit0 of I/O port 3				
P31	I/O	Bit1 of I/O port 3				
P32	I/O	Bit2 of I/O port 3				
P33	I/O	Bit3 of I/O port 3				
$V_{DD}$	_	Positive power supply				
OSC	Ι	Oscillation component connection pin				
TEST	I	For testing only				
$V_{SS}$	- 1	Negative power supply				
Vo	0	D/A current output				



## ■ ABSOLUTE MAXIMUM RATING

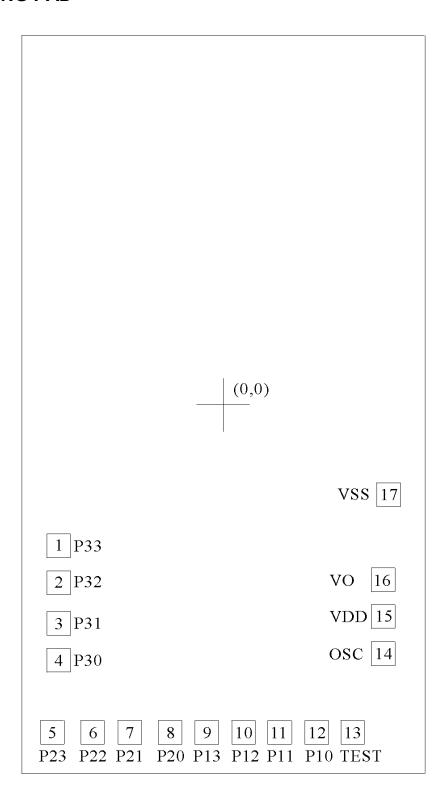
Items	Symbol	Min	Max	Unit.
Supply Voltage	$V_{DD}$	-0.3	6.0	V
Input Voltage	V <sub>IN</sub>	V <sub>SS</sub> -0.3	V <sub>DD</sub> +0.3	V
Operating Temperature	T <sub>OP</sub>	-20.0	70.0	°C
Storage Temperature	T <sub>STG</sub>	-55.0	125.0	°C

# **■ ELECTRICAL CHARACTERISTICS**

Item	Sym.	Min.	Тур.	Max.	Unit	Condition
Operating Voltage	$V_{DD}$	2.4	3.0	5.1	V	
Standby Current	I <sub>SBY</sub>	1	-	2.0	иA	V <sub>DD</sub> =3V, no load
Operating Current	I <sub>OPR</sub>	1	-	250	иA	V <sub>DD</sub> =3V, no load
Input Current of P1	li	-	3	-	uA	V <sub>DD</sub> =3V
Drive Current of P2,P3	I <sub>OD</sub>	1.5	2	-	mΑ	$V_{DD}$ =3V, $V_{O}$ =2.4V
Sink Current of P2,P3	Ios	2.0	3	-	mΑ	$V_{DD}$ =3V, $V_{O}$ =0.4V
D/A Output Current	I <sub>VO</sub>	2.0	3.0	4.0	mA	$V_{DD}$ =3V, $V_{O}$ =0.7V
Oscillation Freq.	Fosc	-	1.0	-	MHz	V <sub>DD</sub> =3V



### BONDING PAD



**SN67030** 

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



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