

■ INTRODUCTION

SN67090 is a 90 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
- 90 seconds voice capacity are provided
- Two 4-bit I/O ports and two 4-bit output 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				
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				
P40	0	Bit0 of output port 4				
P41	0	Bit1 of output port 4				
P42	0	Bit2 of output port 4				
P43	0	Bit3 of output port 4				
P50	0	Bit0 of output port 5				
P51	0	Bit1 of output port 5				
P52	0	Bit2 of output port 5				
P53	0	Bit3 of output port 5				
V_{DD}	I	Positive power supply				
OSC	I	Oscillation component connection pin				
TEST	I	For testing only				
RESET	I	Reset pin				
GND	I	Negative power supply				
V_{o}	0	D/A current output				



■ ABSOLUTE MAXIMUM RATING

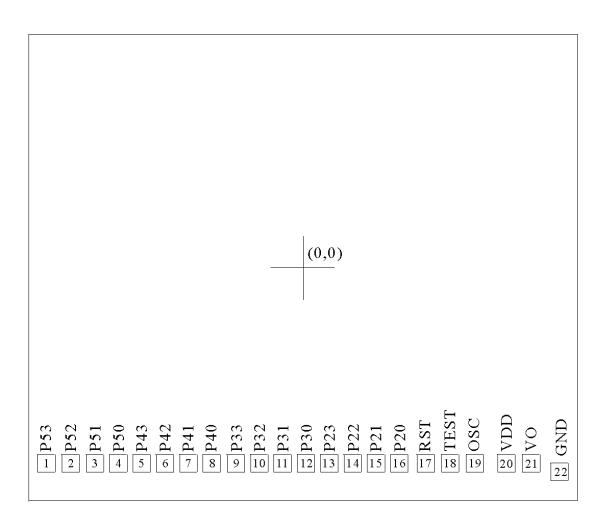
Items	Symbol	Min	Max	Unit.
Supply Voltage	V_{DD}	-0.3	6.0	V
Input Voltage	V _{IN}	V_{SS} -0.3	V _{DD} +0.3	V
Operating Temperature	T _{OP}	-20.0	70.0	°C
Storage Temperature	T _{STG}	-55.0	125.0	°C

■ ELECTRICAL CHARACTERISTICS

Item	Sym.	Min.	Тур.	Max.	Unit	Condition
Operating Voltage	V_{DD}	2.4	3.0	5.1	V	
Standby Current	I _{SBY}	ı	-	2.0	иA	V _{DD} =3V, no load
Operating Current	I _{OPR}	ı	-	250	иA	V _{DD} =3V, no load
Input Current of P1	li	1	3	-	uA	V _{DD} =3V
Drive Current of P2,P3	I _{OD}	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 _{vo}	2.0	3.0	4.0	mA	$V_{DD} = 3V, V_{O} = 0.7V$
Oscillation Freq.	Fosc	ı	1.0	-	MHz	V _{DD} =3V



BONDING PAD



SN67090

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



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