

SS1004 6Sec POWER SPEECH

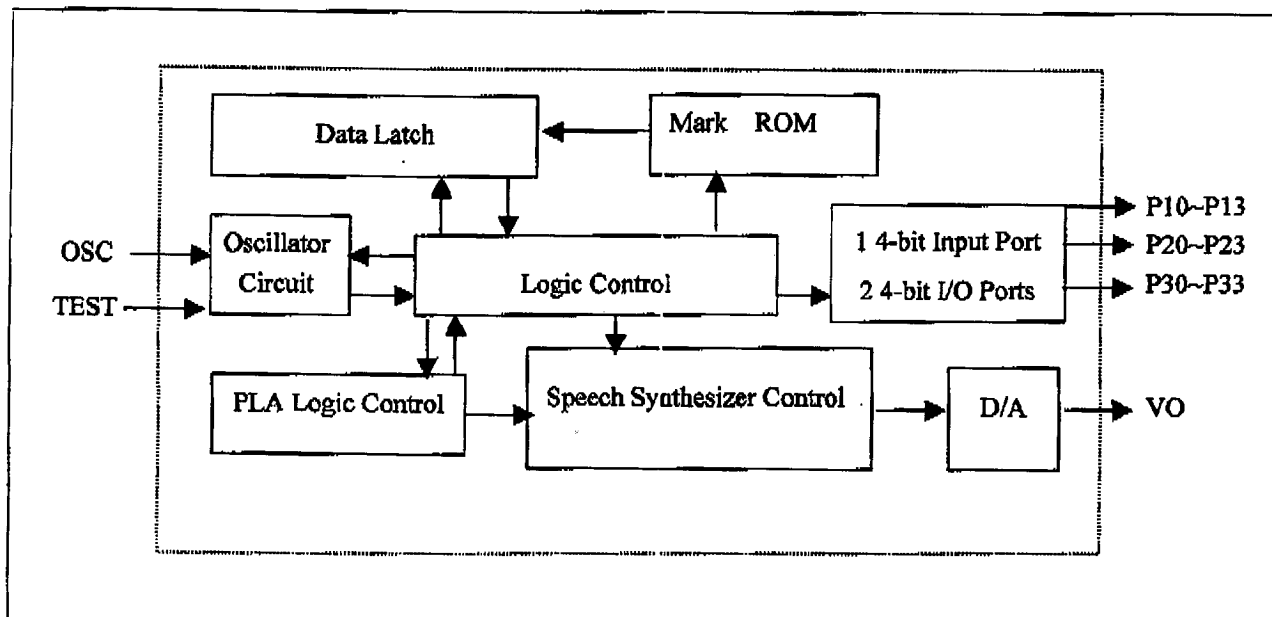
General Description

SS1004 is a 6 seconds single chip voice synthesizer IC that 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.

2. Features

- ◆ Single power supply 2.4V - 5.1V
- ◆ Built in a tiny controller
- ◆ 6 seconds voice capacity are provided (6KHz sample rate)
- ◆ One 4-bit input port 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
- ◆ Built in a dual tone melody generator
- ◆ Speech/Dual tone melody mixer is provided
- ◆ Fixed current D/A output is provided to drive external connected transistor for sound output
- ◆ Low Voltage Reset

3. Function Block Diagram



4. Pin Descriptions

1	P33	I/O	Bit3 of I/O port 3
2	P32	I/O	Bit2 of I/O port 3
3	P31	I/O	Bit1 of I/O port 3
4	P30	I/O	Bit0 of I/O port 3
5	P23	I/O	Bit3 of I/O port 2
6	P22	I/O	Bit2 of I/O port 2
7	P21	I/O	Bit1 of I/O port 2
8	P20	I/O	Bit0 of I/O port 2
9	P13	I	Bit3 of Input port 1
10	P12	I	Bit2 of Input port 1
11	P11	I	Bit1 of Input port 1
12	P10	I	Bit0 of Input port 1
13	TEST	I	For testing only
14	OSC	I	Oscillation component connection pin
15	VDD	I	Positive power supply
16	VO	O	D/A current output
17	GND	I	Negative Power supply

5. Absolute Maximum Ratings

(All voltage referenced to GND)

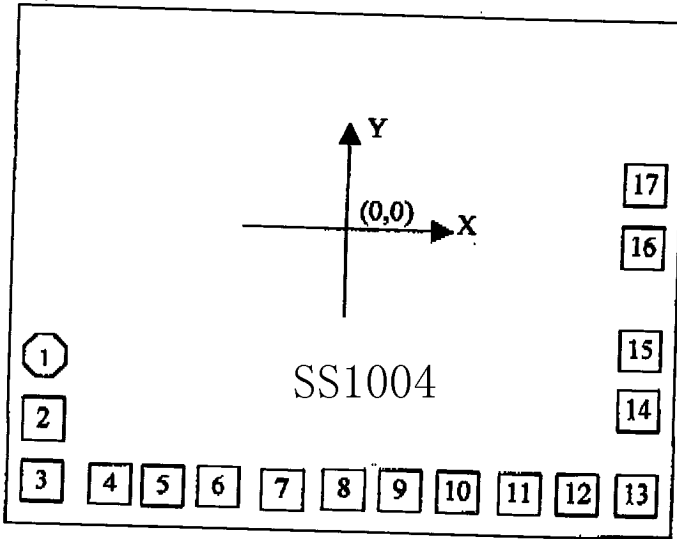
Supply Voltage	V_{DD}	0 ~ 6.0	V
Input / Output Voltage	V_I / V_O	GND-0.3 ~ VDD+0.3	V
Operating Temperature	T_{DD}	0 ~ 70	°C
Storage Temperature	T_{ST}	-20 ~ 125	°C

6. Electrical Characteristics

(All voltage referenced to GND, Ambient temperature=25 °C)

Operation Voltage	V_{DD}		2.4	3.0	5.1	V
Stand-by Current	I_{SB}	VDD = 3V, No load			1.0	μA
Operation Current	I_{DD}	VDD = 3V, No load			250	μA
Input Current of P1	I_I	VDD = 3V		3.0		μA
Drive Current of P2, P3	I_{OD}	VDD = 3V, $V_O = 2.4V$	1.5	2	-	mA
Sink Current of P2, P3	I_{OS}	VDD = 3V, $V_O = 0.4V$	2.0	3	-	mA
D/A Output Current	I_{VO}	VDD = 3V, $V_O = 0.7V$	2.0	3.0	4.0	mA
Oscillator Freq.	F_{OSC}	VDD = 3V		1.0		MHz

7. Pad Diagram



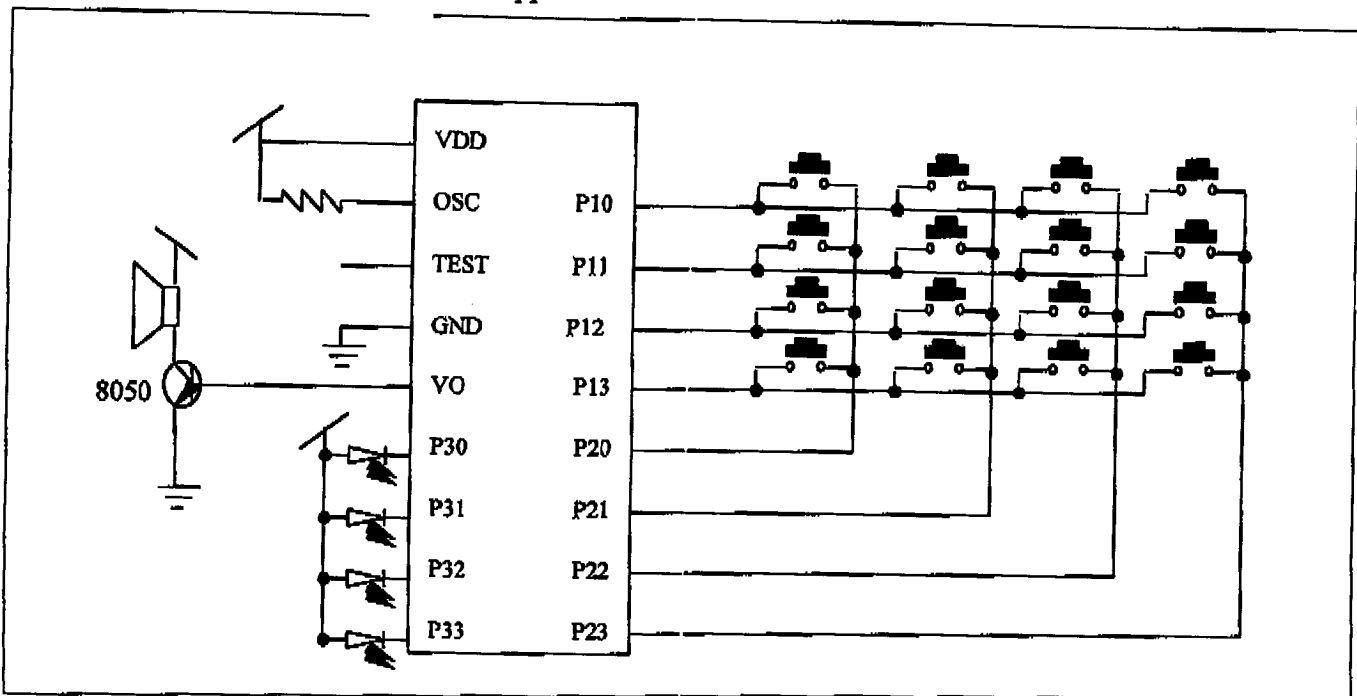
1	P33	-1219	-255
2	P32	-1219	-488
3	P31	-1219	-721
4	P30	-1031	-785
5	P23	-715	-785
6	P22	-490	-785
7	P21	-267	-785
8	P20	-42	-785
9	P13	174	-785
10	P12	383	-785
11	P11	591	-785
12	P10	800	-785
13	TEST	1007	-785
14	OSC	1212	-425
15	VDD	1212	-240
16	VO	1206	127
17	GND	1206	252

chip size: (2600,1730) Unit: μm

Note: The substrate must be connected to GND.

8. Application circuit

16 Inputs & 4 Outputs for SS1004 Application CKT.



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