

SD501 3 Sec. Voice Synthesizer

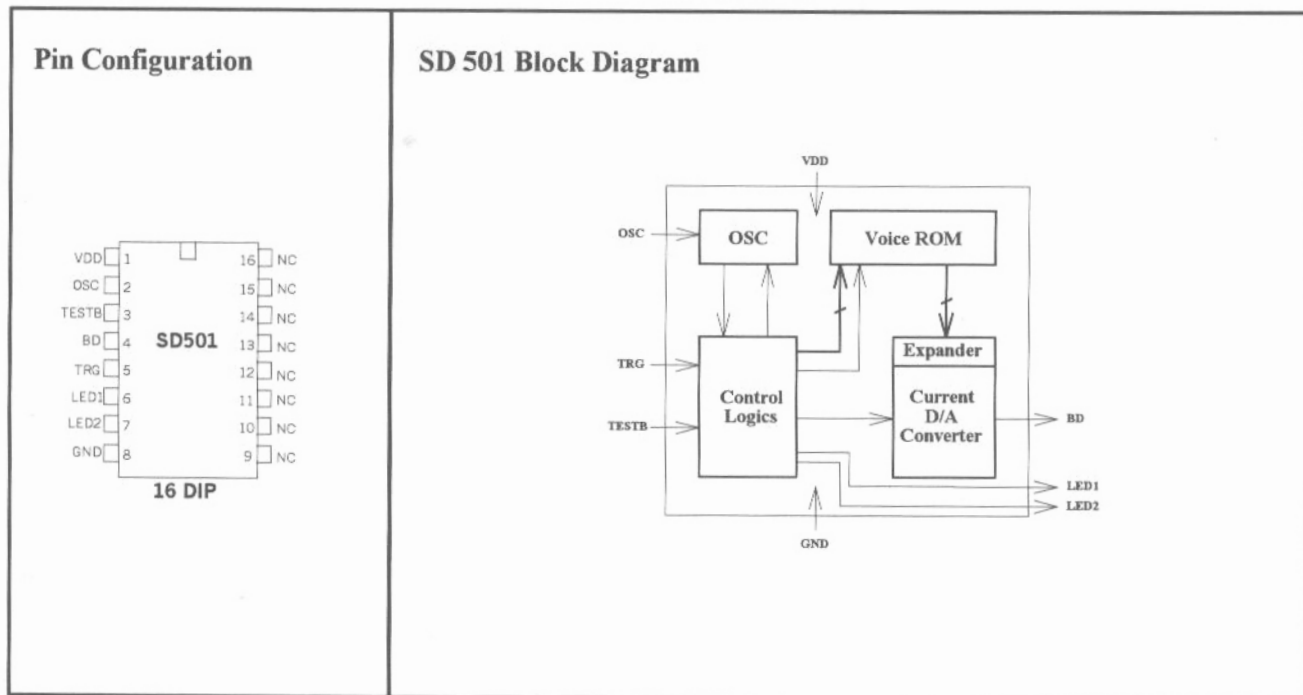
Features

- Power supply range : 2.5V to 5.5V.
- 3 seconds voice length and could play 1 to 7 times.
- One trigger input with CDS capability.
- Two current output full scale options, could drive 8 Ω speaker with an NPN transistor.
 - Medium : 3mA, 3.0V.
 - Large : 5mA, 3.0V.
- Triggering mode selection by mask options :
 1. Oneshot(Unhold)/Level_Hold/On_Off.
 2. Re-triggerable/Nonre-triggerable.
- LED1 flash modes selection by mask option :
 1. DC output during playing.
 2. 4Hz flash during playing.
 3. Flashes according to voice amplitude.
- LED2 DC output high/low selection by GND bonding option . (Default: driving high)
- 20ms debounce time.

General Description

SD501 is a 3 seconds voice synthesizer using SD qualified coding algorithm. It plays speech according to previously programmed informations and provides various triggering mode selection to satisfy customer's

request. It is dedicated to the applications such as rhythm box, toys, ... etc., and is easy for you to design your consumer products.



Pin Description

Pin No.	Symbol	Description
1	VDD	Positive power supply.
2	OSC	Oscillator input pin.
3	TESTB	Test pin.
4	BD	Audio output pin.
5	TRG	Trigger input pin, high active.
6	LED1	LED driver output pin.
7	LED2	LED driver output pin.
8	GND	Negative power supply.
9~16	NC	No connection.

Absolute Maximum Ratings

RATING	VALUE
DC Supply Voltage	< 6.5V
Input/Output Voltage	GND-0.3VtoVDD+0.3V
Operating Temperature	-10° C to 60° C
Storage Temperature	-25° C to 125° C

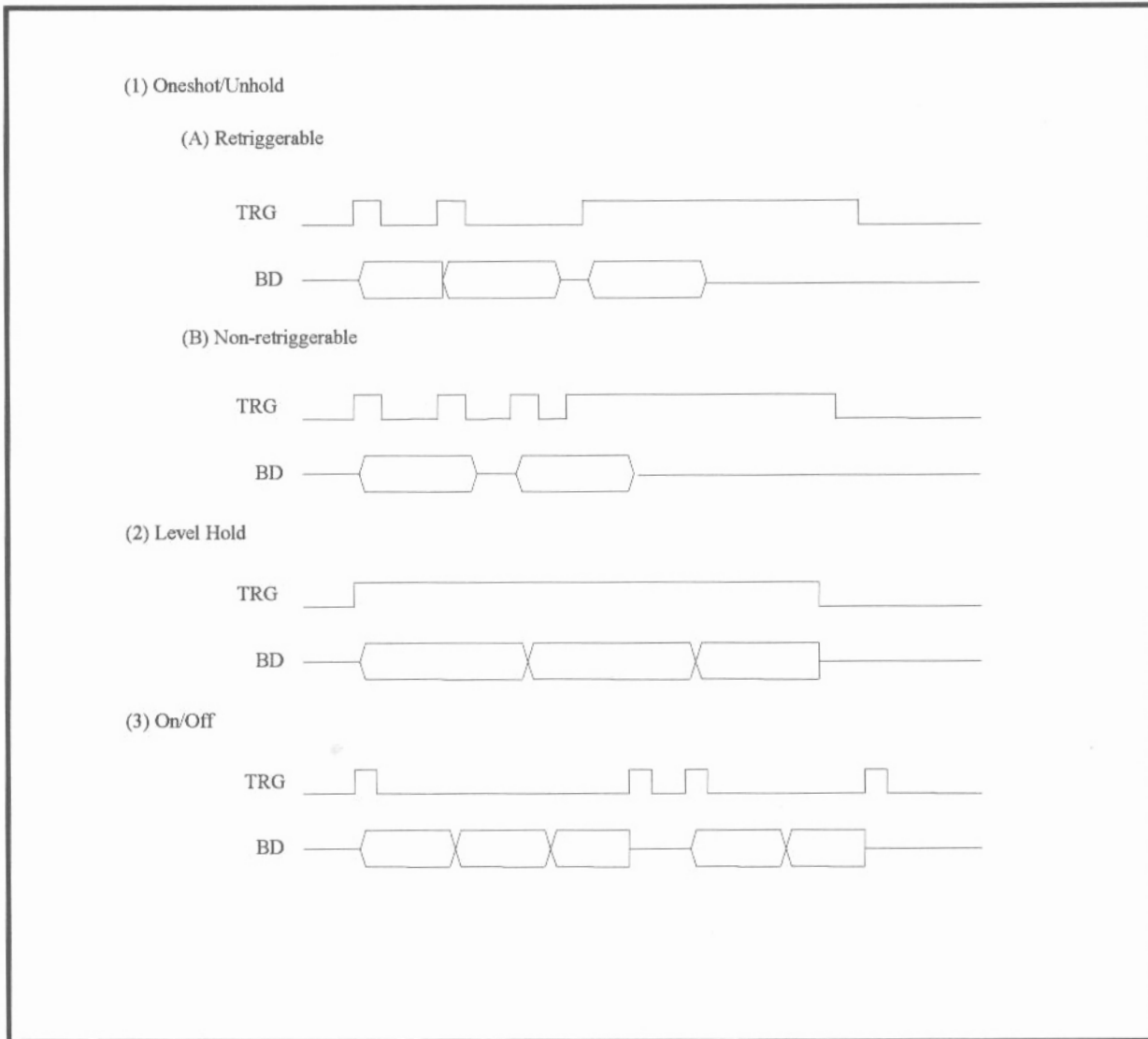
Notice: Stress greater than those listed under **Absolute Maximum Ratings** may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied, Exposure to absolute maximum rating conditions for extended period may affect reliability.

Electrical Characteristics

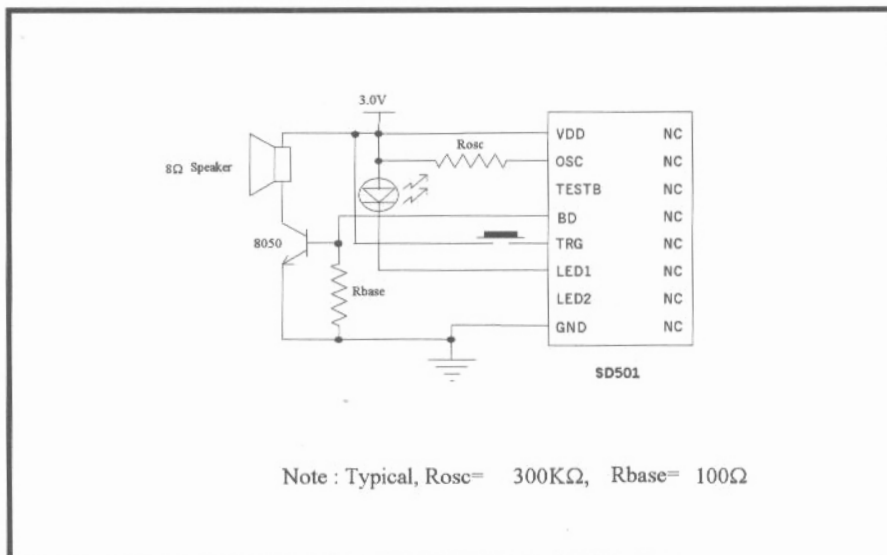
(VDD = 3.0V, GND = 0V, Ta = 25°C, unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Condition
Operating Voltage	Vdd	2.5V	3.0V	5.5V	
Standby Current	Istb	---	---	0.5μA	Vdd = 3V, I/O open
Operating Current	Iop	---	---	200μA	Vdd = 3V, I/O open
BD Output Drive Current	Ibd	---	3.0mA	---	Vdd = 3.0V, Vbd = 0.7V
			5.0mA		
LED Pin Drive Current	I _{LED}	---	7.0mA	---	Vdd = 3.0V, V _{LED} = 1.5V
Frequency Stability	ΔF/F	-15%	---	15%	$\frac{F_{osc(3.0)} - F_{osc(2.7)}}{F_{osc(3.0)}}$

Trigger Modes



Application Circuit



Bonding Diagram
