

SD7012

Triple Tone Medoly Generator

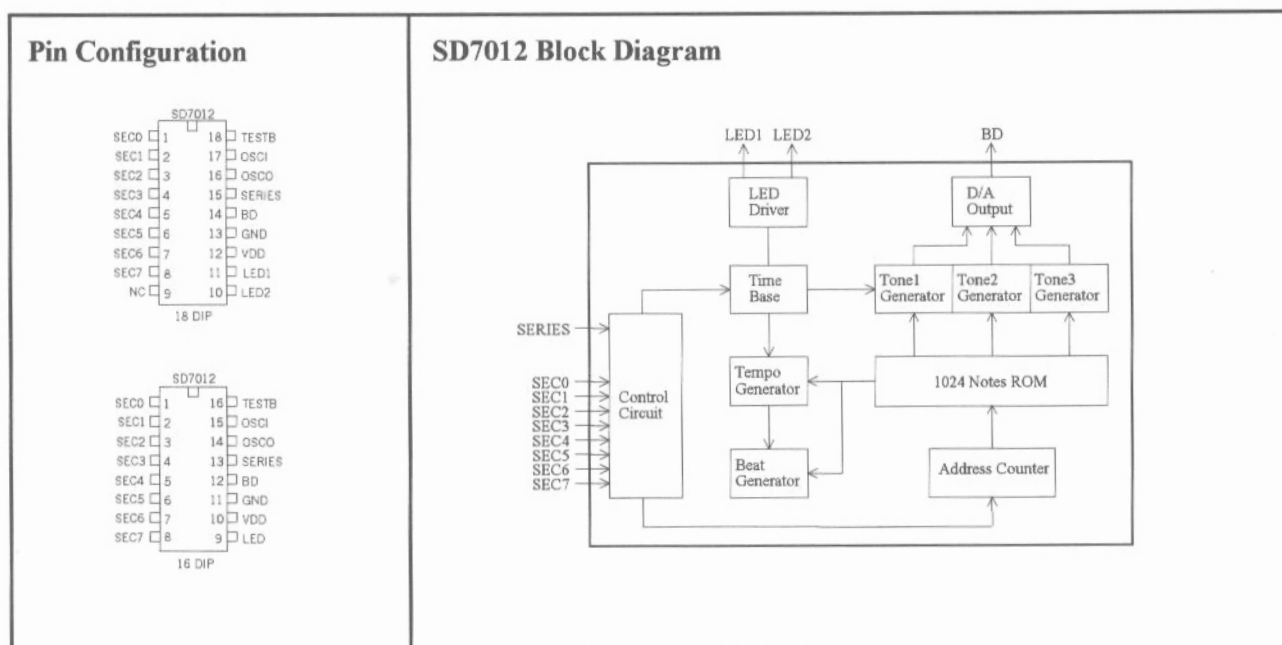
Features

- Composite 3 sound generators.
- 4 modes for simultaneous combination of 3 timbre and 2 beats.
- 1024 notes memory.
- 3 kinds of sound generator (Piano, Vibraphone, Drum).
- Power supply range : 1.8V to 5.0V.
- D/A converter output.
- One series trigger pin, CDS capability, retriggerable or nonretriggerable by code option.
- 8 sections trigger pins with first priority.
- 2 LED flash with main rhythm and accompaniment.
- Drive speaker directly with an NPN transistor.

General Description

SD7012 is a new type of CMOS sound generator designed with sound composite system using minimum application circuits. This allows for the production of a wide variety of high quality sounds. There are level hold mode and oneshot mode for series trigger and

oneshot mode for section trigger. 2 LEDs are flashing with main rhythm and accompaniment for various applications.



Pin Description

Pin No.	Symbol	Description
1	SEC0	Section 0 trigger pin, low active.
2	SEC1	Section 1 trigger pin, low active.
3	SEC2	Section 2 trigger pin, low active.
4	SEC3	Section 3 trigger pin, low active.
5	SEC4	Section 4 trigger pin, low active.
6	SEC5	Section 5 trigger pin, low active.
7	SEC6	Section 6 trigger pin, low active.
8	SEC7	Section 7 trigger pin, low active.
9	NC	No connection.

10	LED2	LED2 flash output (main rhythm).
11	LED1	LED1 flash output (accompaniment).
12	VDD	Positive power supply.
13	GND	Negative power supply.
14	BD	Sound output.
15	SERIES	Series trigger input, low active, CDS capability. Sequentially trigger without sections limit.
16	OSCO	Oscillator output pin.
17	OSCI	Oscillator input pin.
18	TESTB	Test pin.

Absolute Maximum Ratings

RATING	VALUE
DC Supply Voltage	< 6.5 V
Input/Output Voltage	GND-0.3V to VDD+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	1.8V	3.0V	5.0V	
Standby Current	Istb	---	10μA	35μA	No load
Operating Current	Iop	---	2mA	8mA	No load
LED Current	I _{LED}	10mA	---	---	Vout(LED)=1.5V



Trigger Modes

(1) Series Trigger

(Retriggerable/Non-retriggerable by code option)

(A) Oneshot mode



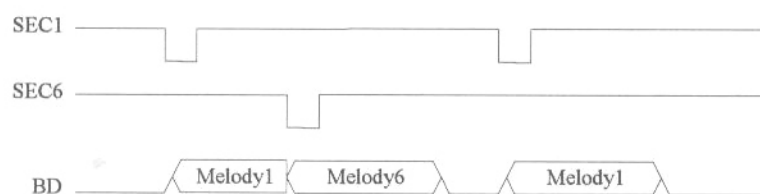
(B) Level-hold mode



(2) Section Trigger

(Retriggerable with key priority)

(A) Oneshot mode



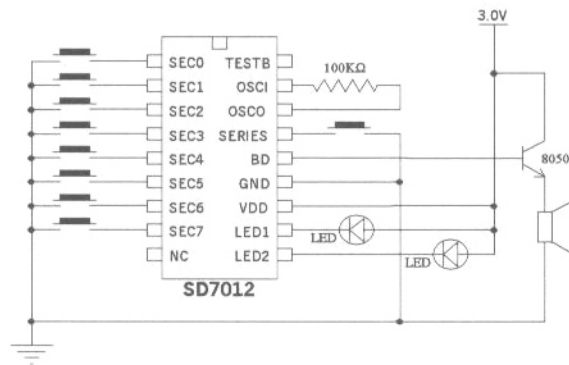
(B) Level-hold mode



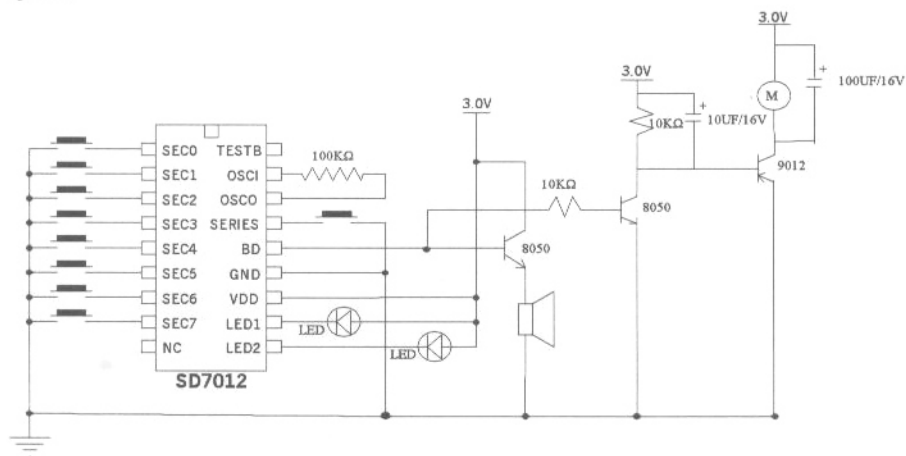


Application Circuit

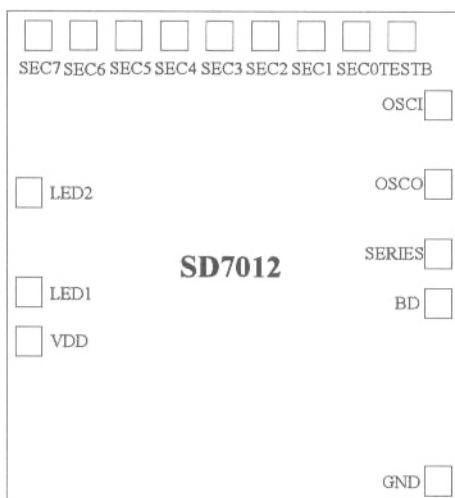
(1) Drive speaker



(2) Drive motor & speaker



Bonding Diagram



Pad No.	Pad Name	X	Y
1	SEC0	1128.9	1431.2
2	SEC1	978.9	1431.2
3	SEC2	828.9	1431.2
4	SEC3	678.9	1431.2
5	SEC4	528.9	1431.2
6	SEC5	378.9	1431.2
7	SEC6	228.9	1431.2
8	SEC7	78.9	1431.2
9	LED2	60.0	931.8
10	LED1	60.0	668.8
11	VDD	60.0	518.8
12	GND	1396.3	60.0
13	BD	1396.3	627.7
14	SERIES	1396.3	777.7
15	OSCO	1396.3	996.7
16	OSCI	1396.3	1227.2
17	TESTB	1278.9	1431.2

Unit: μm

Notes: Substrate is connected to GND



Song Lists

7012-01

1. It's A Small World
2. Little Star
3. London Bridge Is Falling Down
4. Do Re Me
5. Home Sweet Home
6. Music Box Dancer
7. Down The Mountain Side We Go
8. Toy Symphony

7012-02

1. Jingle Bell
Santa Claus Is Coming Down
We Wish You A Merry Christmas
2. White Christmas
The First Noel
3. O Come All Ye Faithful
Hark! The Herald Angels Sing
4. It Come Upon The Midnight Clear
O Little Town Of Bethelen
5. Silver Bells
The Twelve Days Of Christmas
Up On The Housetop
6. Silent Night
Away In A Manger
7. Angels We Have Heard On High
Deck The Hall
8. Joy To The World
O Christmas Tree

7012-03B

1. Love Story
2. Yesterday
3. Green Sleeves
4. Love Me Tender
5. Love Is Blue
6. Unchain Melody
7. Some Where In Time
8. Feelings