1024 Notes Dual Tone Melody Generator

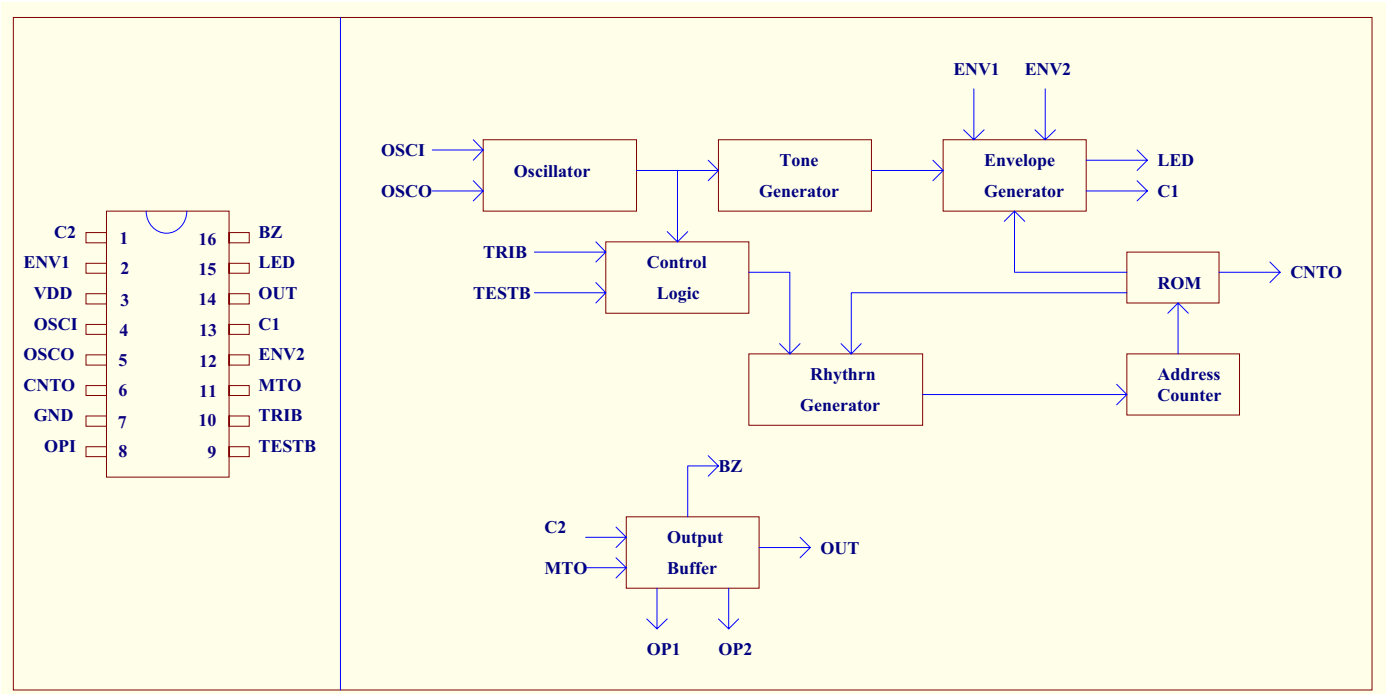
Features:

- 1024-note ROM memory
- 2.5v to 5v power supply
- Low power consumption
- 14 tempos available through mask setting
- 15 beats available
- 27 notes (including rest) available
- 1 sequence trigger key
- Natural sound effect; two individual external envelope circuits
- Dynamic speaker can be driven with an external NPN transistor
- Power on reset; melody begins from the first note
- Typical oscillator frequency 160 KHZ

General Description:

This chip is a CMOS LSI designed for use in toys, doorbell, music boxed, melody clock/timers and telephone .it is designed to play the melody according to previously programmed information and is capable of generating songs with piano effect. By pushing the sequence trigger key,all songs can be sequentially selected and played with auto-stop function..

PIN Configuration:



Pin Description:

Pin No	Symbol	Description
1	C2	Preamplify input
2	ENV1	Envelope circuit terminal 1
3	VDD	Positive power supply
4	OSCI	Oscillator input pin
5	OSCO	Oscillator output pin
6	CNTO	Control output pin
7	GND	Negative power supply
8	OP1	Output buffer output pin1
9	TESTB	For testing
10	TRIB	Sequence trigger pin for sequentially selecting the songs
11	MTO	Modulated tone signal input to the output buffer
12	ENV2	Envelope circuit terminal 2
13	C1	Modulated tone signal output from the envelope generator
14	OUT	Output buffer output pin3
15	LED	Led drive pin
16	BZ	Buzzer drive pin
--	OP2	Output buffer output pin2

Function Description:

Oscillator circuit:

The oscillation frequency is used as a time base for tone and tempo generators, the accuracy of which affects the quality of the melody generator.

Tempo generator:

There are 14 tempos available in this embodinment: 82,88,95,103,112,123,137,154,176,205, 246,308,410 and 615 nots per minute.

Tone generator:

The tone generator is a programmed divider. the tone frequencies are created by dividing the oscillator frequencies with M, where M is an integer from 32 to 127 tones selectable in this embodiment,including end code.

Rom:

The mask rom stores the tempo, tone and rhythm data, the rom sends these data to respective generators to control the tempo of each song, the tone codes and the rhythm codes.

Absolute Maximum Ratings:

RATING	VALUE
DC Supply Voltage	0V to 5V
Input/output Voltage	GND –0.2V to VDD +0.2V
Operating Temperature	-10℃to 60℃
Storage Temperature	-25℃ to 125℃

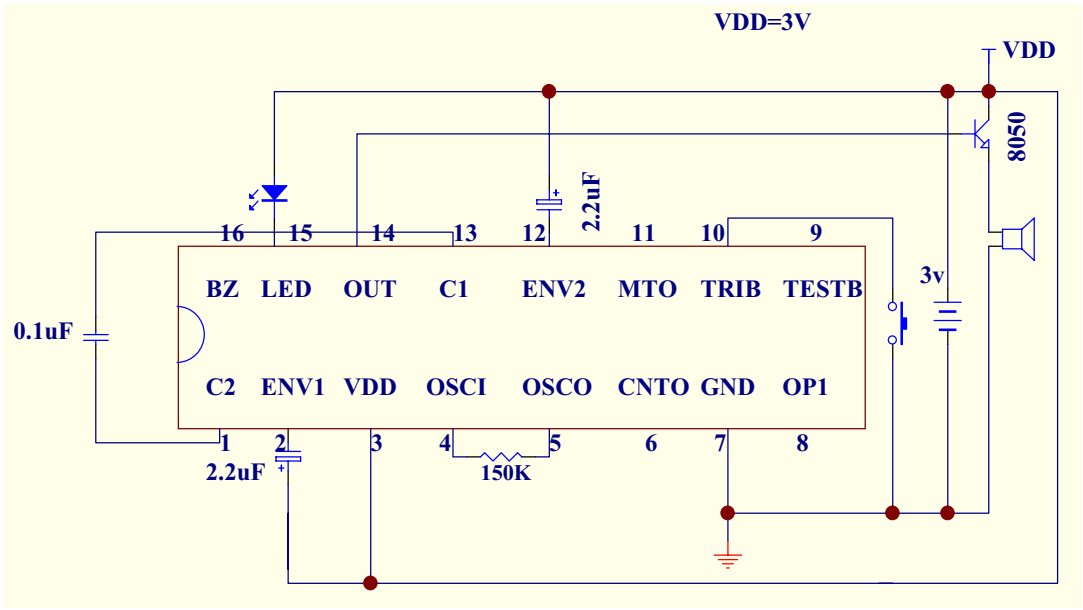
Electrical Characteristics

(VDD=3.0V,GND=0V,T_A=25℃,unless otherwise specified)

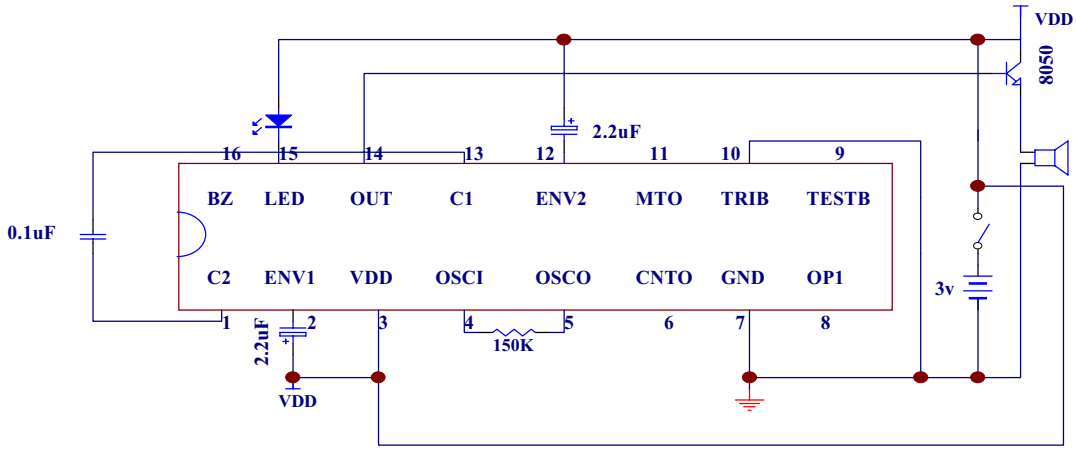
Parameter	Symbol	Min	Typ	Max	Unit
Operating Voltage	Vdd	2.5	3.0	5	V
Operating Current	Idd	--	3	10	mA
Standby Current	Istb	--	2	10	uA
OSC Frequency	Fosc	--	160k	±15%	

Application Circuit:

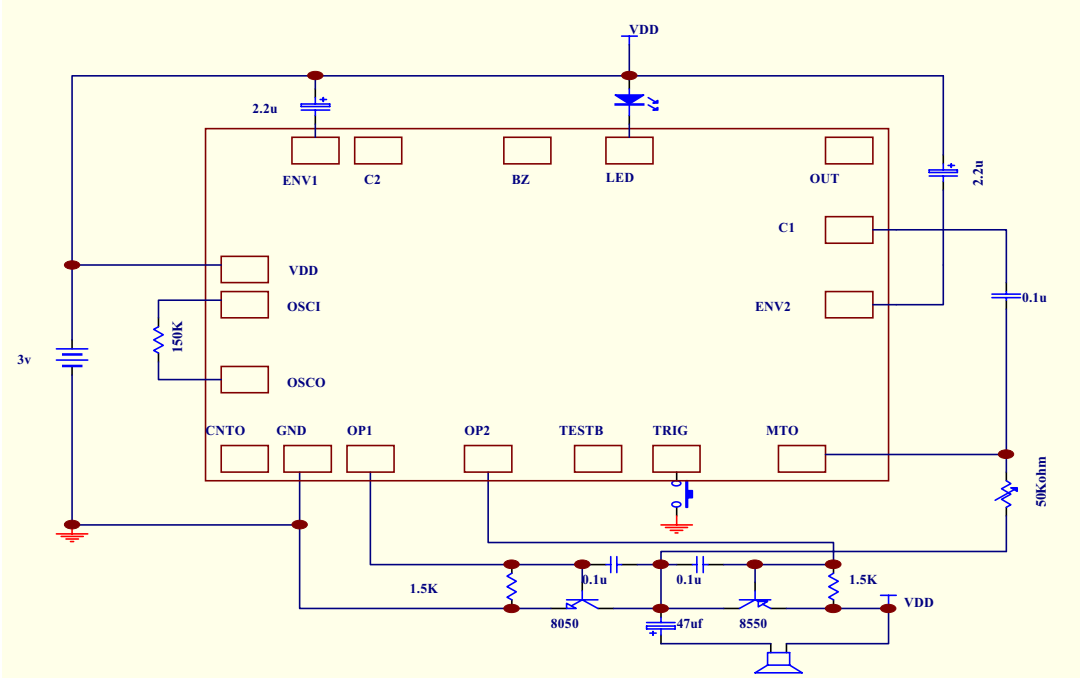
1、One shot mode



2. Level hold mod

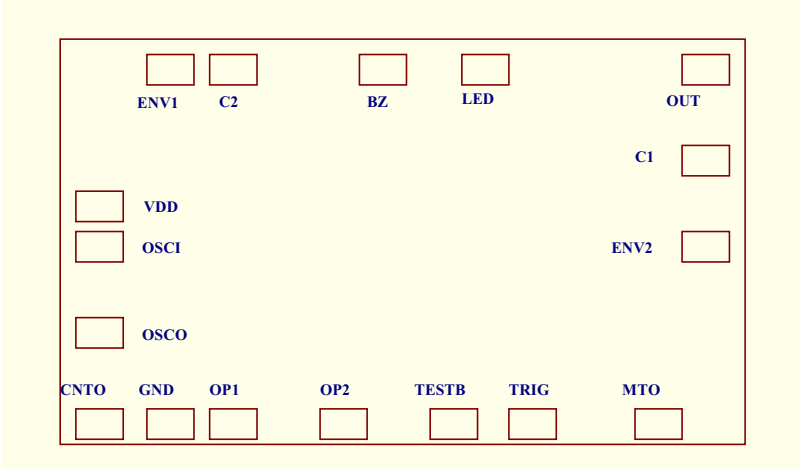


3. Power on sequential trigger circuit



16 首程控 電阻=470K ohm

Bonding Diagram



* Substrate to VDD