Description

RT2820D is a CMOS LSI two sound generator IC. It can generate two sections of sounds: one is Ding-Dong, the other one is bird sound.

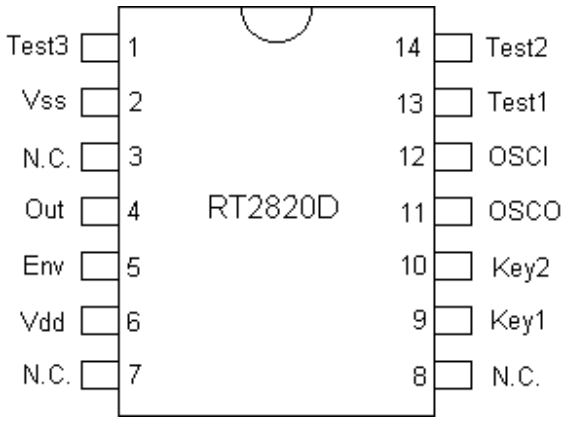
FEATURES

1. Operating voltage：3.0V
2. Stand-by current<1μA (VDD=3V)
3. Built-in two sounds: bird sound ,Ding-Dong
4. Auto power off function

APPLICATIONS

1. Door Bell
2. Toy

PIN CONFIGURATION



PIN DESCRIPTION

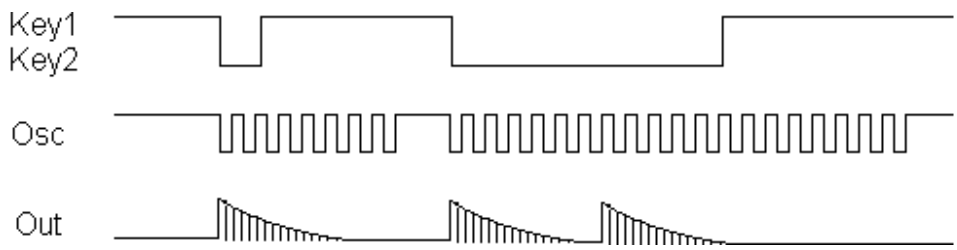
Pad No.	Pad Name	I/O	Function
1	TEST3	I	Test Pin
2	VSS	O	Negative power supply , GND
3	N.C.	-	Not connection
4	OUT	O	Tone output pin for driving external transistor
5	ENV	I	RC envelope effect pin
6	VDD	I	Positive power supply , VDD= +3.0V
7	N.C.	-	Not connection
8	N.C.	-	Not connection
9	KEY1	I	KEY1 input pin , active low
10	KEY2	I	KEY2 input pin , active low
11	OSCO		Oscillator input / output pins
12	OSCI		
13	TEST1		Test Pin
14	TEST2		Test Pin

FUNCTIONAL DESCRIPTION

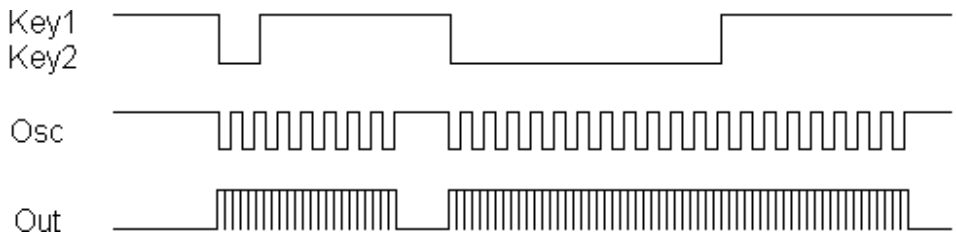
1. Oscillator:

   The oscillator circuit of this IC just needs an external resistor.

2. Envelope function:
   (a) With Envelope:



   (b) Without Envelope:



3. The relation between key and output tone:

   2 input keys can trigger two sections of sounds.

   (a) Key1: For bird sound output
   (b) Key2: For Ding-Dong sound output and repeat this sound two times (Ding-Dong-Ding-Dong)。

Maximum Ratings

Characteristic	Symbol	Rating	Unit
Supply voltage	V_{DD}	-0.3~ 6.0	V
Operation Temperature	T_{OP}	0 ~ +70	℃
Input voltage	V_{IN}	(VSS-0.3) ~ (VDD+0.3)	V
Storage Temperature	T_{STR}	-50 ~ +125	℃

Electrical Characteristics

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Voltage	V_{DD}	-	2.0	3.0	5.6	V
Operating Current	I_{DD}	No Load	-	300	600	μA
Stand-by Current	Ist	VDD=3.0V	-	1	5	μA
Oscillator Frequency	fosc	R_{OSC}=240KΩ	-	64	-	KHz
Out source current	I_{OH}	VOH=2.5V	-0.5	-1	-	mA
ENV source current	I_{ENV}	VOH=2.5V	-1	-1.5	-	mA
'H' level voltage	V_{IH}	VDD=3V	2.1	-	-	mV
'L' level voltage	V_{IL}	VDD=3V	-	-	0.9	mV

APPLICATION CIRCUIT