

# HT-2811 DING DONG FOR DOOR BELL

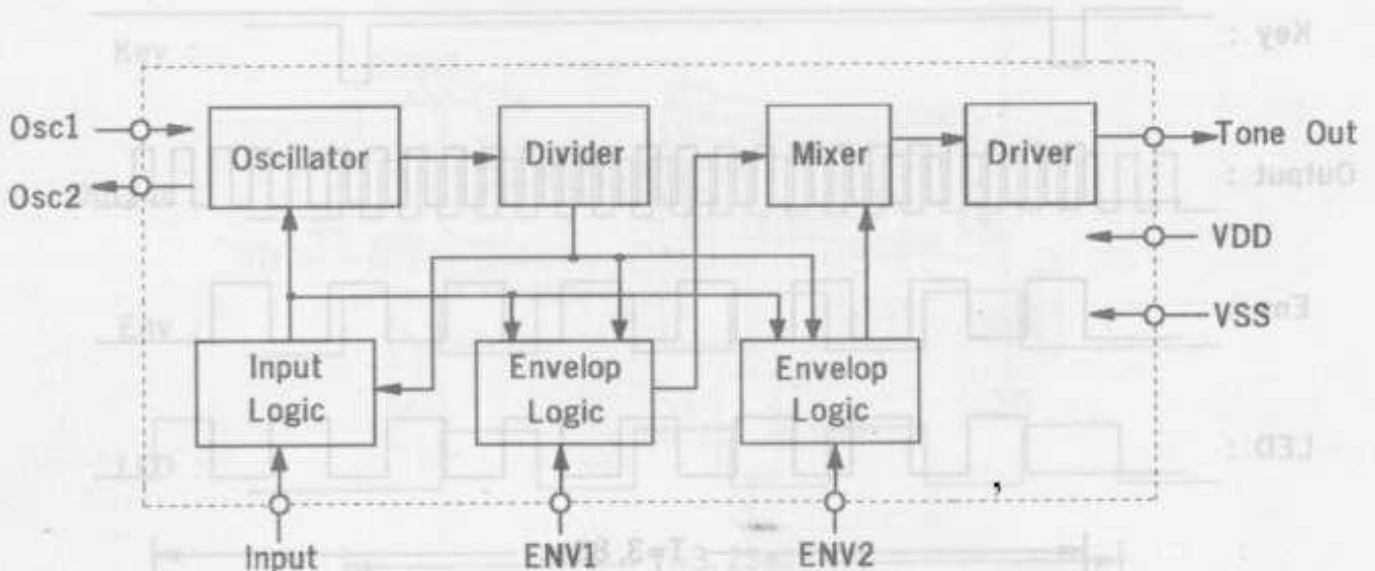
## A. General Description —

The HT-2811 is a CMOS LSI chip specially designed for the application of Ding-Dong door bell. It requires very low numbers of external components and provides low cost, high quality dual tone Ding-Dong sound. The IC is very suitable for door bell application.

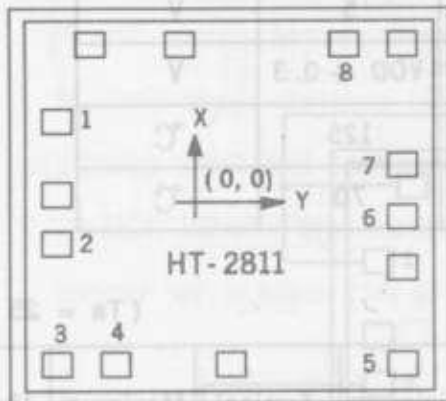
## B. Features —

- CMOS Metal Gate process.
- Operating voltage : 2.4V~3.3V.
- Low stand-by current : 1 $\mu$ A typically at VDD=3V.
- Good sound quality. (dual tone)
- Envelope adjustable by external RC.

## C. Block Diagram —



### D. Pad Assignment & Position



Chip Size :  $58 \times 64$  (Mil)<sup>2</sup>

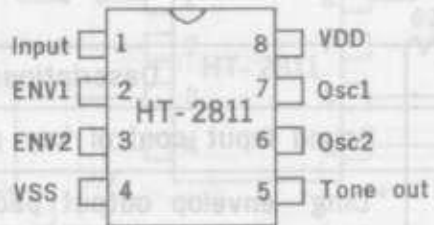
- PAD 1 : Input
- PAD 2 : ENV1
- PAD 3 : ENV2
- PAD 4 : VSS
- PAD 5 : Tone Out
- PAD 6 : Osc2
- PAD 7 : Osc1
- PAD 8 : VDD

	X	Y	X	Y
PAD 1 :	- 23.38	16.19	PAD 5 :	23.38 - 26.14
PAD 2 :	- 23.38	- 5.32	PAD 6 :	23.34 - 6.59
PAD 3 :	- 23.38	- 26.14	PAD 7 :	23.34 0.64
PAD 4 :	- 14.96	- 26.14	PAD 8 :	16.15 26.14

Unit : (Mil)

\* The IC substrate should be connected to VDD in PCB layout artwork.

### E. Pin Assignment



Pin No	Pad Name
1	Input
2	ENV1
3	ENV2
4	VSS
5	Tone out
6	Osc2
7	Osc1
8	VDD

## F. Absolute Maximum Ratings — (Ta = 25 °C)

Parameter	Symbol	Minimum	Maximum	Unit
Supply voltage	VDD	- 0.3	5	V
Input/output voltage	Vi , Vo	VSS - 0.3	VDD + 0.3	V
Storage temperature	Tstg	- 50	125	°C
Operating temperature	Top	0	70	°C

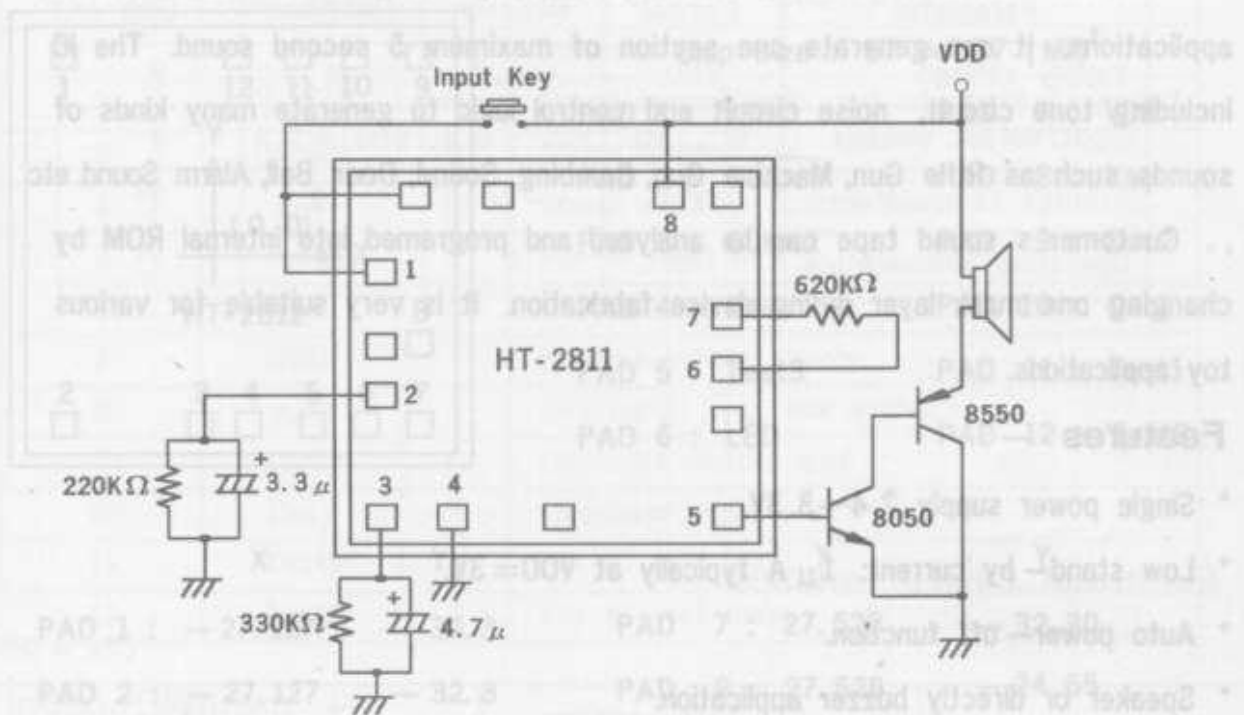
## G. Electrical Characteristics — (Ta = 25 °C)

Characteristics	Symbol	Test condition		Minimum	Typical	Maximum	Unit
		VDD	Condition				
Operating voltage	VDD		—	2.4	3	3.3	V
Stand-by current	IDD	3V		—	1	2	μA
Operating current	Iop	3V	No Load	—	300	500	μA
Output source current	IOH	3V	VOH = 2.5V	- 0.5	- 1	—	mA
ENV source current	Ienv	3V	VOH = 2.5V	- 1	—	—	mA
Oscillator frequency	Fosc	3V	R = 620KΩ	—	40	—	KHz
'H' input voltage	VIH	3V		2.1	—	—	V
'L' input voltage	VIL	3V		—	—	0.9	V

## H. Pad Description —

Pad No	Pad Name	I/O	Description
1	Input	I	Sound input control key pad.
2	ENV1	O	"Ding" envelop output pad.
3	ENV2	O	"Dong" envelop output pad.
4	VSS		Negative power supply, GND.
5	Tone Out	O	Ding Dong tone output pad.
6	Osc2	O	Oscillator output pad.
7	Osc1	I	Oscillator input pad.
8	VDD		Positive power supply.

## I. Application Circuit



- The IC substrate should be connected to VDD in PCB layout artwork.

