

### FEATURES

- 127-note ROM memory
- 2.0V to 5.0V power supply and low power consumption
- RC oscillator on chip
- One shot or level hold mode (mask option)
- Sound range: 2.5 octaves, 2 series
- Tempo: 16 kinds (presto-largo)
- Double sound sources
- Digital Envelope Effect

### FUNCTIONS

- Dynamic speaker can be driven with external NPN transistor
- Power on reset; melody begins from the first note
- Start from the head of melody
- Bare chip or TO-92 are available

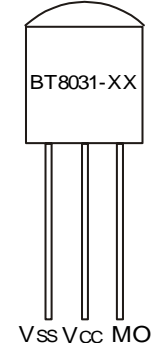
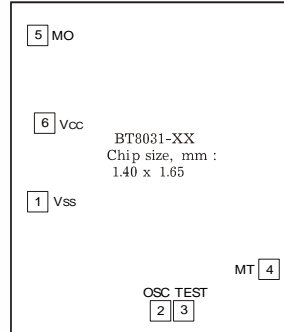
### DESCRIPTION

The BT8031-XX is a CMOS LSI chip, which plays a prearranged melodies. The ROM has a 127 words and can store up to two melodies with double sound sources, and it uses the built-in digital envelope circuit.

### SONG LIST

01	For Elise
02	Ding - Dong
03	Westminster
04	One Ding - Dong
05	It's Small World

### PIN CONFIGURATION



CHIP

TO-92

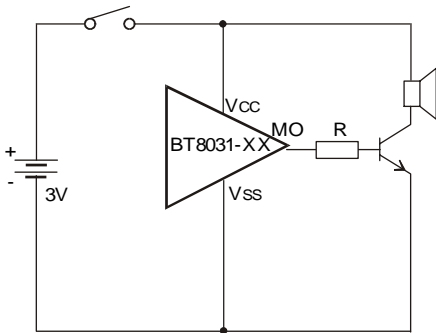
### ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 3V, V<sub>SS</sub> = 0V, T<sub>a</sub> = 25°C; unless otherwise specified)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Operating Voltage	V <sub>CC</sub>		2.0	3.0	5.0	V
Supply Current	I <sub>S</sub>	Stand-by*		-	5	A
	I <sub>CC</sub>	Operating		0.6	1	mA
Output Drive Current	I <sub>OH</sub>	Output open V <sub>CC</sub> = 3V, V <sub>O</sub> = 0.8V	0.5	0.5		mA
Output Sink Current	I <sub>OL</sub>	V <sub>CC</sub> = 3V, V <sub>O</sub> = 0.5V	0.5	0.5		mA
Input Current MT	I <sub>I</sub>	V <sub>IN</sub> = V <sub>CC</sub>	0.5		3.0	A
Frequency Stability	ΔF/F	F <sub>OSC</sub> (3V) - F <sub>OSC</sub> (2V)		-	15	%
		F <sub>OSC</sub> (3V)				

\* Only for version "ONE SHOT MODE"

APPLICATION CIRCUITS

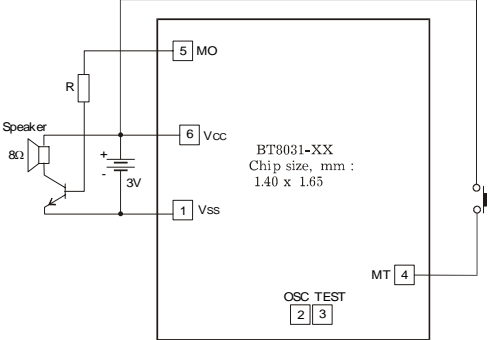
LEVEL HOLD MODE (TO-92)



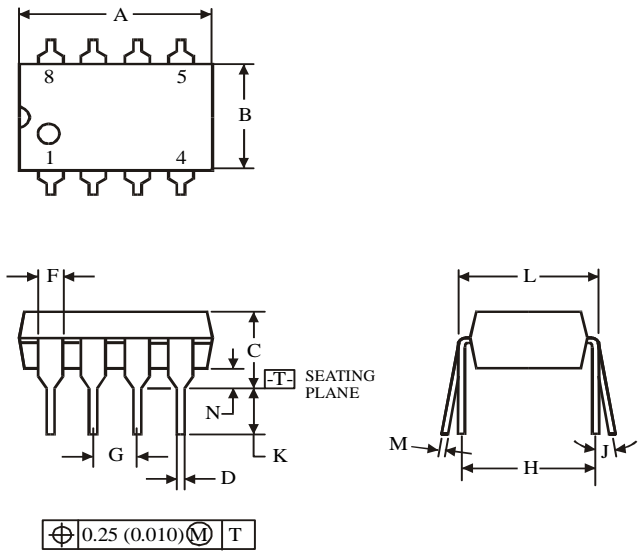
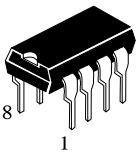
$R = 5 \div 10k\Omega$

**NOTE:** The chip substrate is connected to  $V_{SS}$ .

ONE SHOT MODE (BARE CHIP)



N SUFFIX PLASTIC DIP  
(MS – 001BA)



NOTES:

1. Dimensions “A”, “B” do not include mold flash or protrusions.  
Maximum mold flash or protrusions 0.25 mm (0.010) per side.

	Dimension, mm	
Symbol	MIN	MAX
A	8.51	10.16
B	6.1	7.11
C		5.33
D	0.36	0.56
F	1.14	1.78
G	2.54	
H	7.62	
J	0°	10°
K	2.92	3.81
L	7.62	8.26
M	0.2	0.36
N	0.38	

## • TO-92

