



## GENERAL DESCRIPTION

The SM6201 is a CMOS chip, it was designed for toys products. Press the trigger key once, one of songs can be selected sequentially with auto-stop function. Additionally, that is available for all songs can be designed in one to three regions independently and selected by pushing the corresponding access key with auto-stop function. Depend on the customer request, new melody source will be into chip only modify the MASK layer.

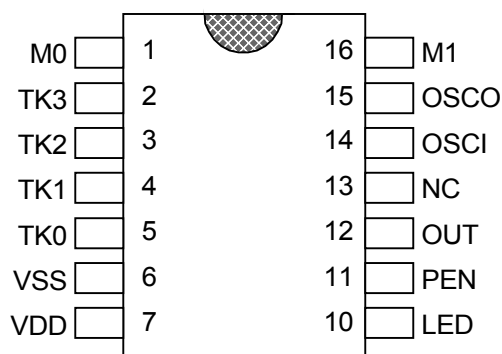
## FEATURES

- \* Power supply : 2.4V - 5V
- \* 256 - notes ROM memory
- \* Power one reset ; melody begins from the first note
- \* Two types of control key :
  - K0 : trigger key
  - K1 - K3 : direct song key
- \* On-chip envelop modulator
- \* R/C oscillator frequency in OUT and LED pin can be programmed while resistor value modified
- \* Provided PEN output for driving motor

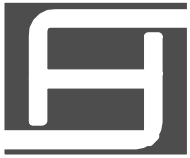
## APPLICATIONS

- \* Melody Toy
- \* Music box
- \* Door bell
- \* Christmas ornament

## PIN ASSIGNMENT



\* All specs and applications shown above subject to change without prior notice.



## ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	Min.	Typ.	Max.	Unit
Supply Voltage	VDD - VSS	-0.3		6	V
Operating Temperature	Topr	-10 °C		+ 60 °C	°C
Storage Temperature	Tstg	-25 °C		+ 125 °C	°C
Oscillator Frequency	$\Delta$ F/F		$\pm 15\%$		

## ELECTRICAL CHARACTERISTICS

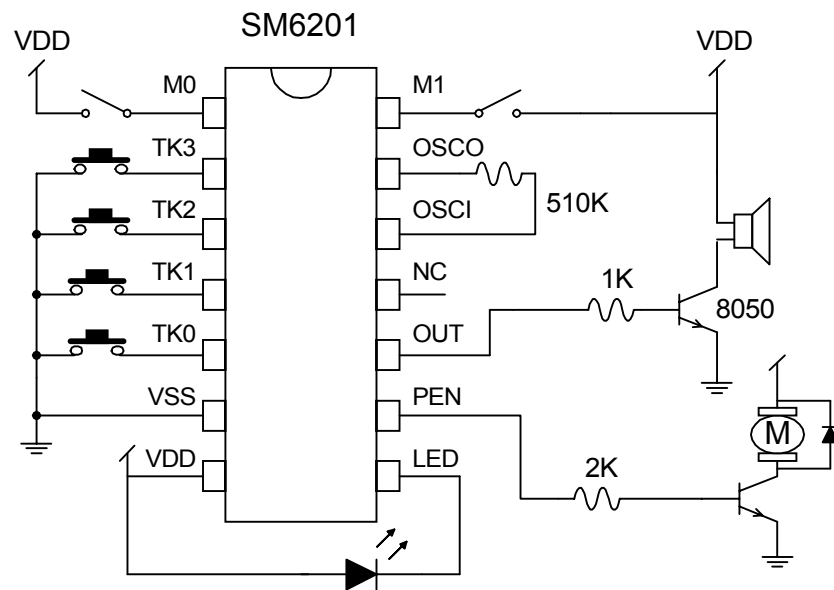
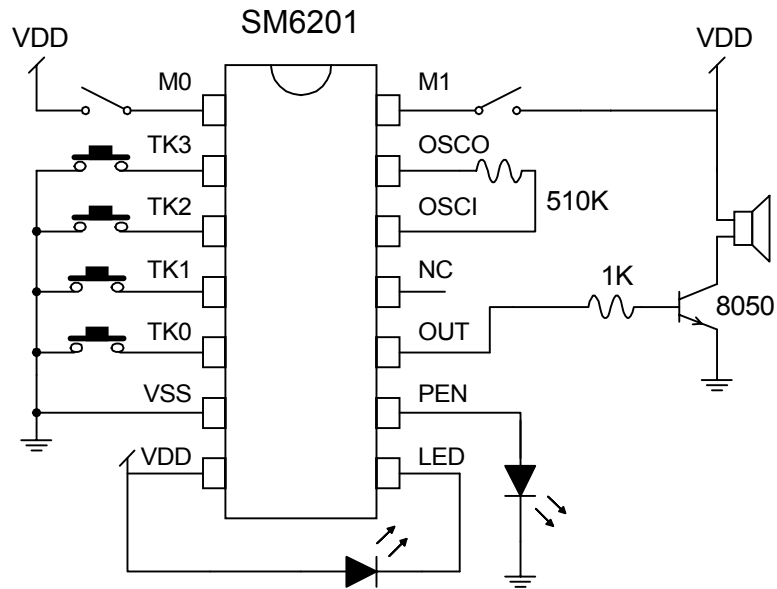
CHARACTERISTICS	SYMBOL	Min.	Typ.	Max.	Unit	REMARKS
Supply Voltage	VDD	2.4	3	5	V	
Operating Current	Idd			10	mA	No load
Stand-by Current	Istb			2	uA	
LED Sinking Current	LED Sinking	10			mA	VDS=1.0V
PEN Driving Current	PEN Driving	1			mA	VDS=2.0V

## PIN DESCRIPTION

PIN	PIN NAME	DESCRIPTION
1	MO	Non-retriggerable mode pin
2 ~ 4	TK3 ~ TK1	Direct access trigger pin 3 ~ 1
5	TK0	Sequence trigger pin
6	VSS	Negative power supply
7	VDD	Positive power supply
8	LED	LED output pin
9	PEN	Melody playing indicator, active high
10	OUT	Melody output pin
11	NC	No connection
12	OSCI	Oscillator input pin
13	OSCO	Oscillator output pin
14	M1	Continuous mode pin

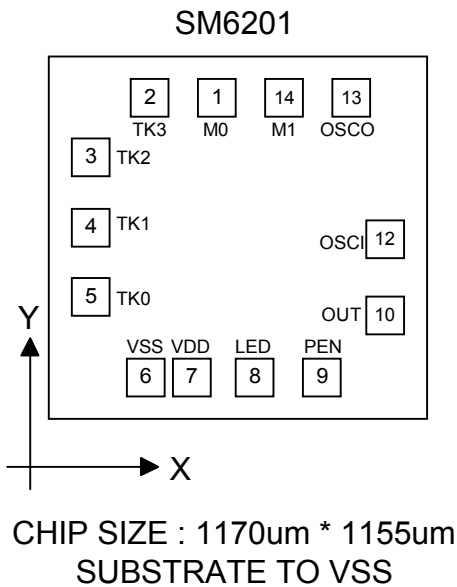


## FUNCTION DESCRIPTION





## BONDING DIAGRAM



NAME	PAD Coordinate in Microns	
	X	Y
MO	514.0	1062.0
TK3	264.2	1062.0
TK2	94.5	858.1
TK1	94.5	610.0
TK0	94.5	362.2
VSS	266.3	99.0
VDD	403.4	99.0
LED	601.3	99.0
PEN	849.3	99.0
OUT	1076.0	273.0
SOCI	1075.0	520.0
OSCO	1014.6	1062.0
M1	766.6	1062.0

## SONG LIST

### SM6201-1 :

1. La Reine Deo Saba
2. For Elise
3. Music Box Dancer

### SM6201-2 :

1. Japanese Lullaby
2. Brahms' Lullaby
3. Rockaby, Baby

### SM6201-3 :

1. Ding-Dong
2. Alarm Song
3. For Elise

### SM6201-4 :

1. Jingle Bells
2. We Wish You a Merry Christmas
3. Santa Claus is Coming to Town

### SM6201-5 :

1. London Bridge is Falling Down
2. Mary Had a Little Lamb
3. Down the Mountain Side We Go

### SM6201-6 :

1. Ding Dong
2. Ding Ding
3. West Minister