

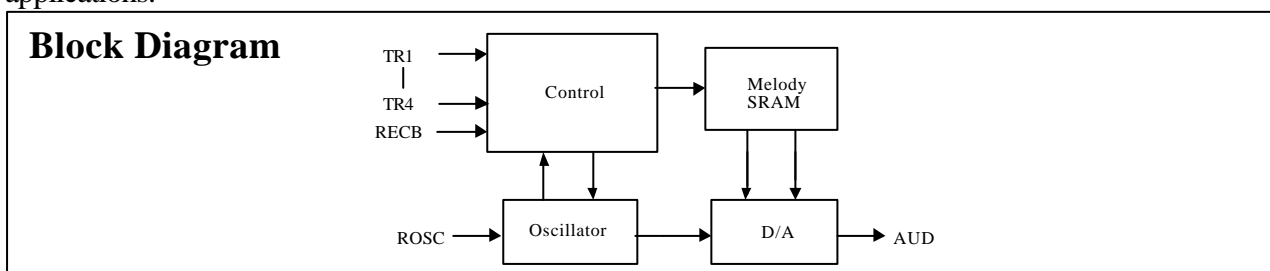
PLAYBACK / RECORD WITH MELODY GENERATOR

Features

- Operating voltage range: 3.3V - 5.0V
- Low power consumption in Power Down mode
- Built-in 108 K bits SRAM (based on 6 K sampling rate and 6 seconds of recording length)
- 780 notes dual tone melody
- Dual oscillators for melody and record/playback
- Provide four triggers (TR1B - TR4B) and three kinds of trigger modes:
 - TR1B: ONE-SHOT trigger key
 - TR2B: LEVEL-HOLD trigger key
 - TR3B, TR4B: ON/OFF trigger key
- Provide CNT1,CNT2, CNT3 as outputs:
 - CNT1: recording indicator
 - CNT2: playing indicator
 - CNT3: melody playing indicator (Flashing of LED follows main tone of the melody.)
- Pin options:
 - 1: 3Hz LED flashing or according to main tone
 - 2: Recorder + melody
Recorder + melody + recorder
Recorder Only
- Provide “BEEP” sound to indicate playing starting and memory full. The frequency (2 KHz or 4 KHz), playing times (two or three times), and sound enabled/disabled of the “BEEP” sound can be changed by mask option.
- Typical oscillator frequency for the recorder: 192 KHz
- Typical oscillator frequency of melody: 128KHz

General Description

TQL06 is a record/playback & melody generator IC which has a built-in SRAM to save voice data, A/D and D/A converters to digitize voices, and microphone amplifier to amplify voice signals, so that only few external components is needed. It has four trigger pins, where each trigger pin can directly trigger the corresponding melody group. The Play function provides three different trigger modes (one-shot, level-hold, On/Off). TQL06 also provides three output pins (CNT1, CNT2, CNT3) to meet different user applications. TQL06 is suitable for message reminders, alarm clocks, toys, and other melody applications.



Absolute Maximum Ratings

DC Supply Voltage.....-0.3V to 6.0V
 Input/Output Voltage.....GND -0.2V to VDD + 0.2V
 Operating temperature.....-10°C to 60°C
 Storage Temperature.....-25°C to 125°C

Comments*

Never allow a stress to exceed the values listed under "Absolute Maximum Ratings", otherwise the device would suffer from a permanent damage. Nor is a stress at the listed value be allowed to persist over a period, since an extended exposure to the absolute maximum rating condition may also affect the reliability of the device, if not causing a damage thereof.

Electrical Characteristics

(VDD = 4.5V, T_A=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Conditions
Operating Voltage	VDD	3.3V	4.5V	5.0V	Unload
Operating Current	I _{DD}	-	1.2mA	-	Unload
Stand-by Current	I _{STB}	-	1.0μA	5μA	Full load
Output Driving	I _{LED}	-	10mA	-	V _{OH} = 2.0V
Output For Aud	I _{AUD}	-	1.2mA	-	V _{OH} = 0.7V

Pin Description

Designation	Description
MOSC	Melody oscillator pin
ROSC	Recorder oscillator pin
RECB	Recording trigger pin
TR1B	One-shot trigger pin (retriggerable)
TR2B	Level hold trigger pin
TR3B	ON/OFF trigger pin
TR4B	ON/OFF trigger pin
T1B	Test mode input
T2B	Test mode output
VDD	Postive power supply
GND	Negative power supply
AUD	Audio output pin
MICG	Microphone ground switch pin to save power. Active high
CNT1	The CNT1 is high in recording state. Active high
CNT2	The CNT2 pin is high in playback state. Active high
CNT3	LED driver pin. The LED flashes according to main tone of the melody.
MIN	Microphone input pin
MODE1	Mode select pin1 If MODE1 connect to floating = recorder only If MODE1 connect to VDD = recorder + melody + recorder If MODE1 connect to GND = recorder + melody

MODE2	Mode select pin2 (internal pull low) If MODE2 connect to VDD =LED flash follow main tone If MODE2 connect to GND = LED 3Hz flash
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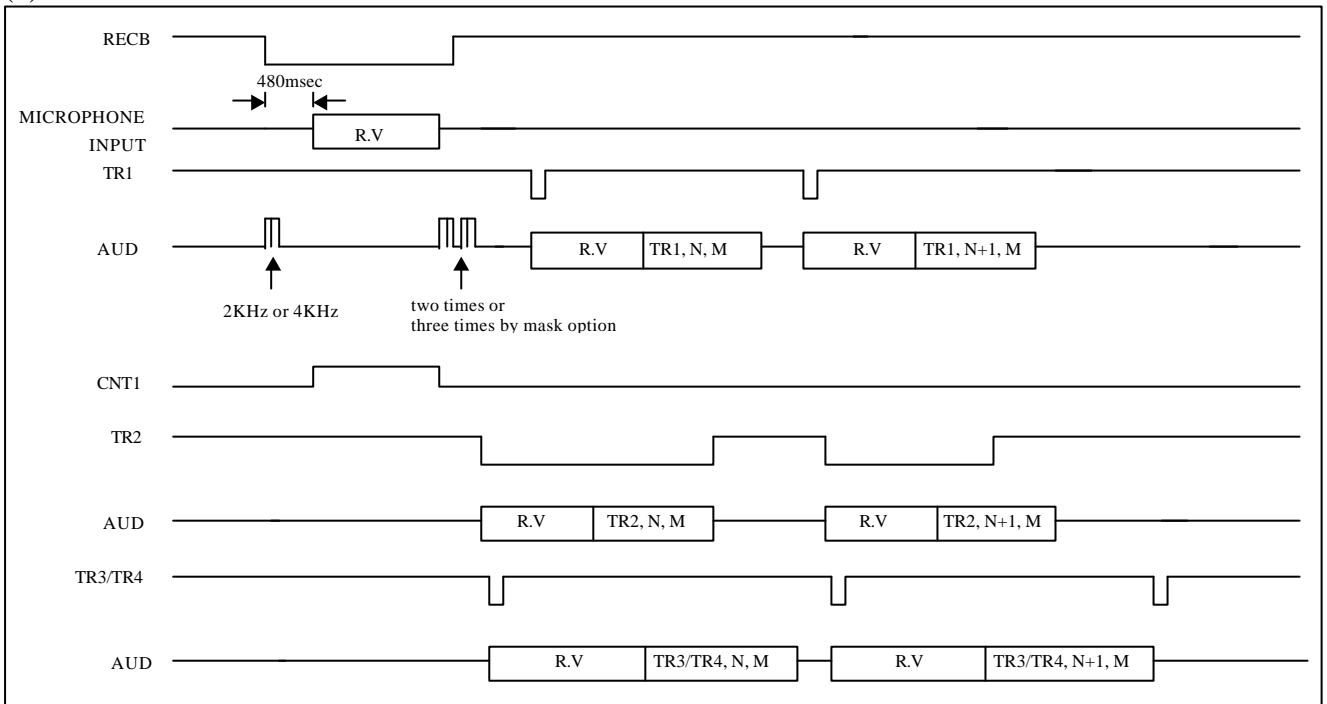
Function Description

“N” is a trigger key corresponding to the number of melody.

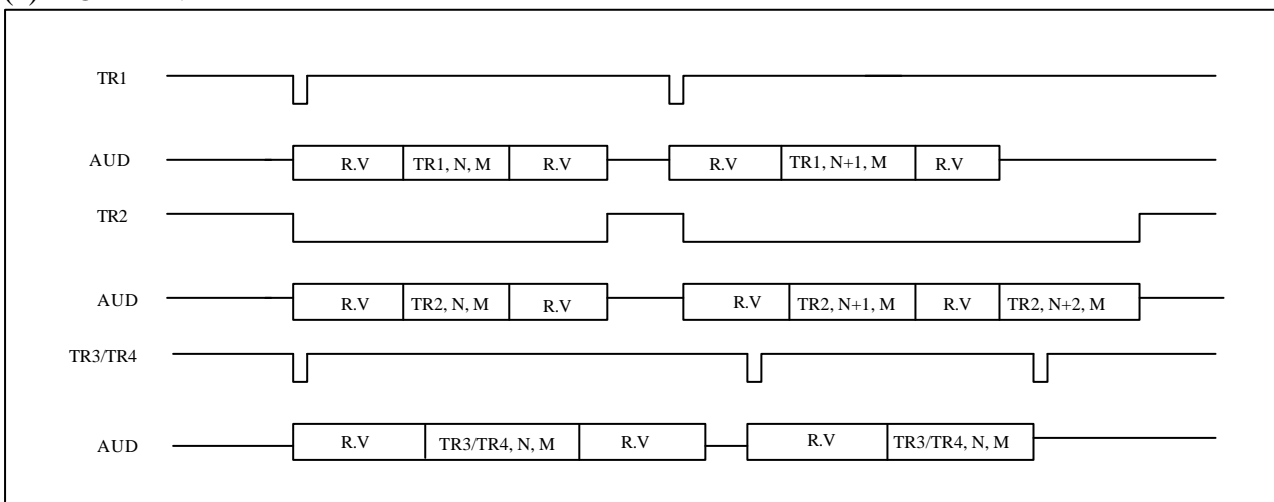
“M” is melody.

R.V. = Recording Voice

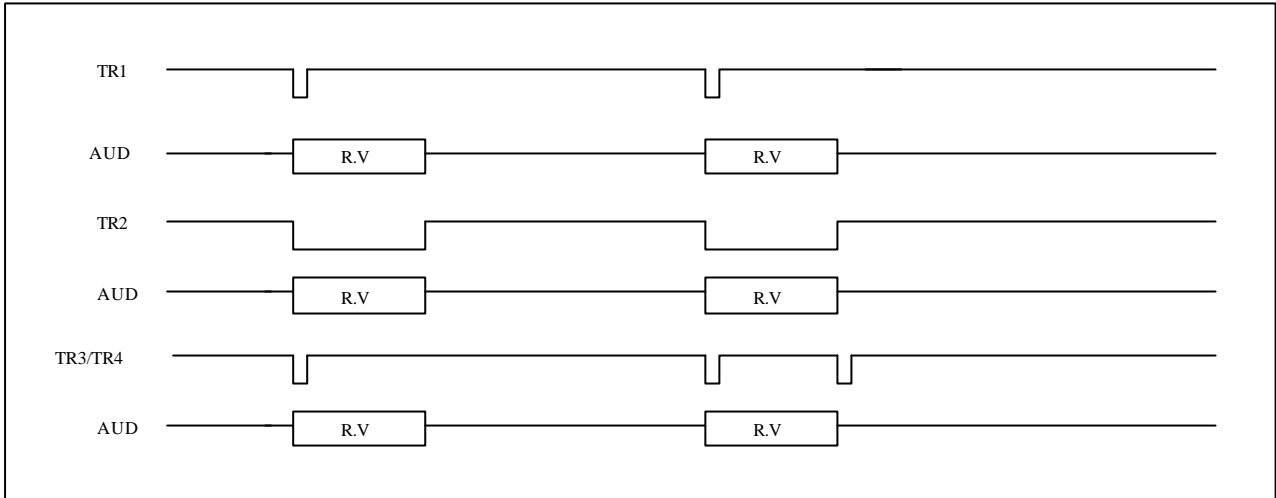
(1) MODE = GND



(2) MODE = VDD

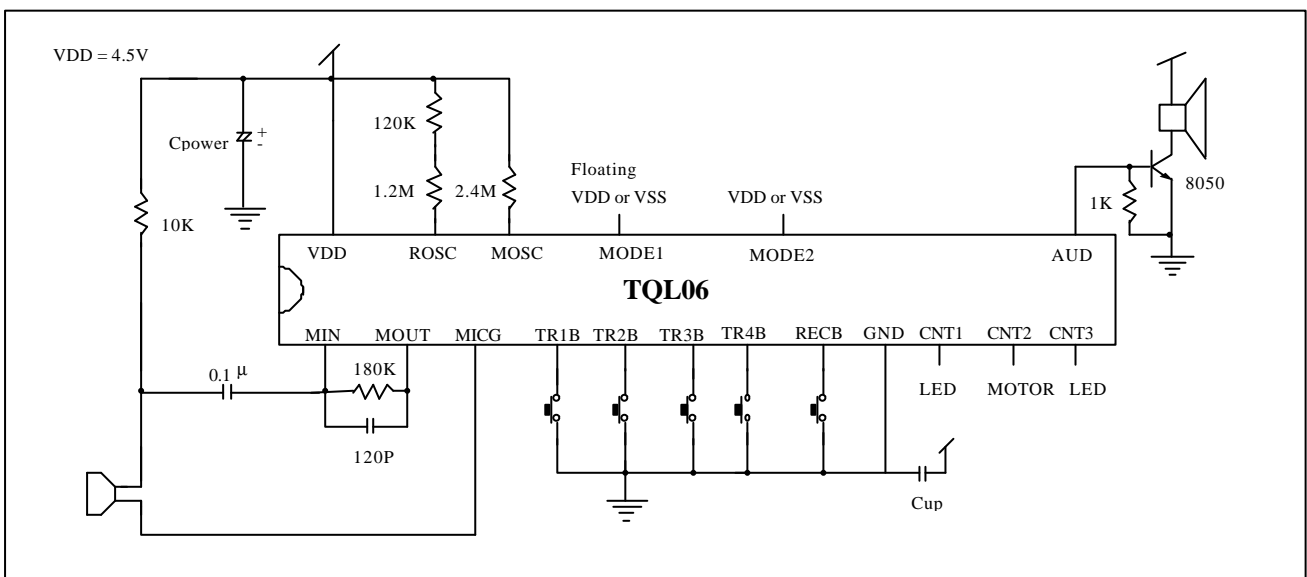


(3) MODE = FLOATING



Application Circuit

1.



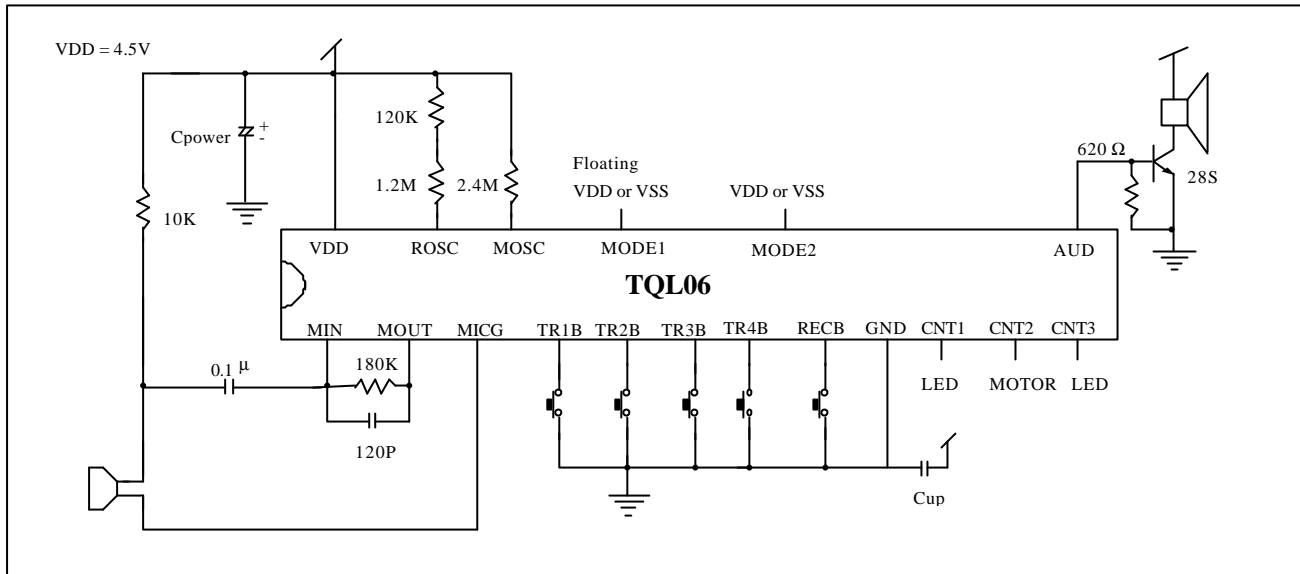
Note:

Cpower : 0.1 μ F ~ 10 μ F

Cup: 0.1 μ F

Transistor use a 8050

2.



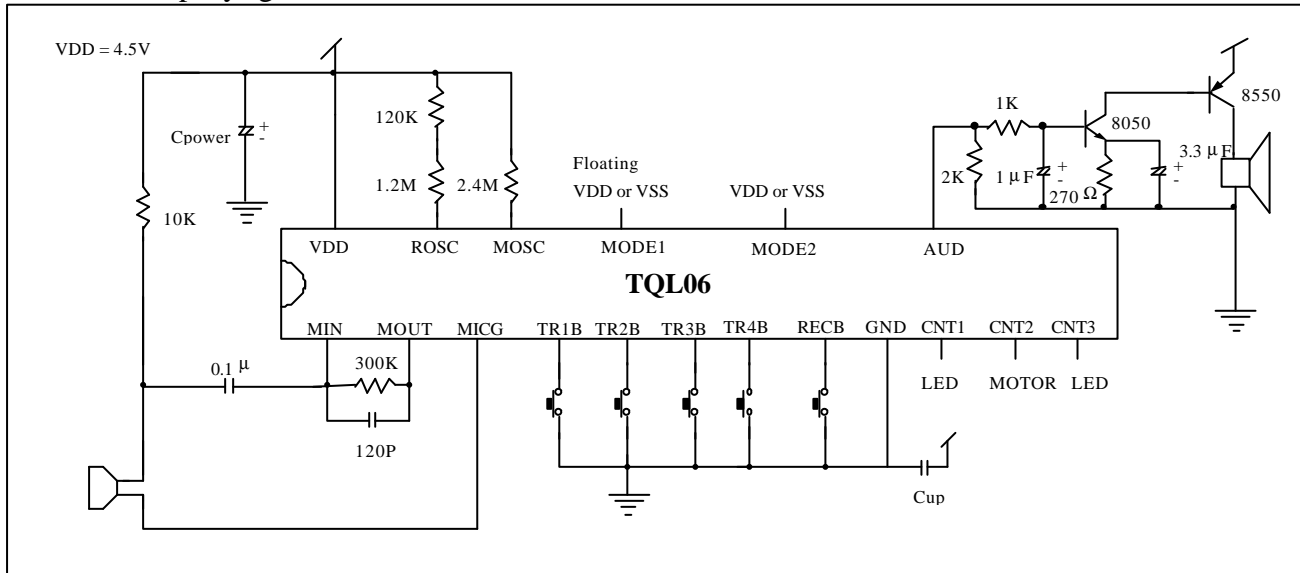
Note:

Cpower : 0.1μF ~ 10μF

Cup: 0.1μF

Transistor use a 28S

3. Volume amplifying

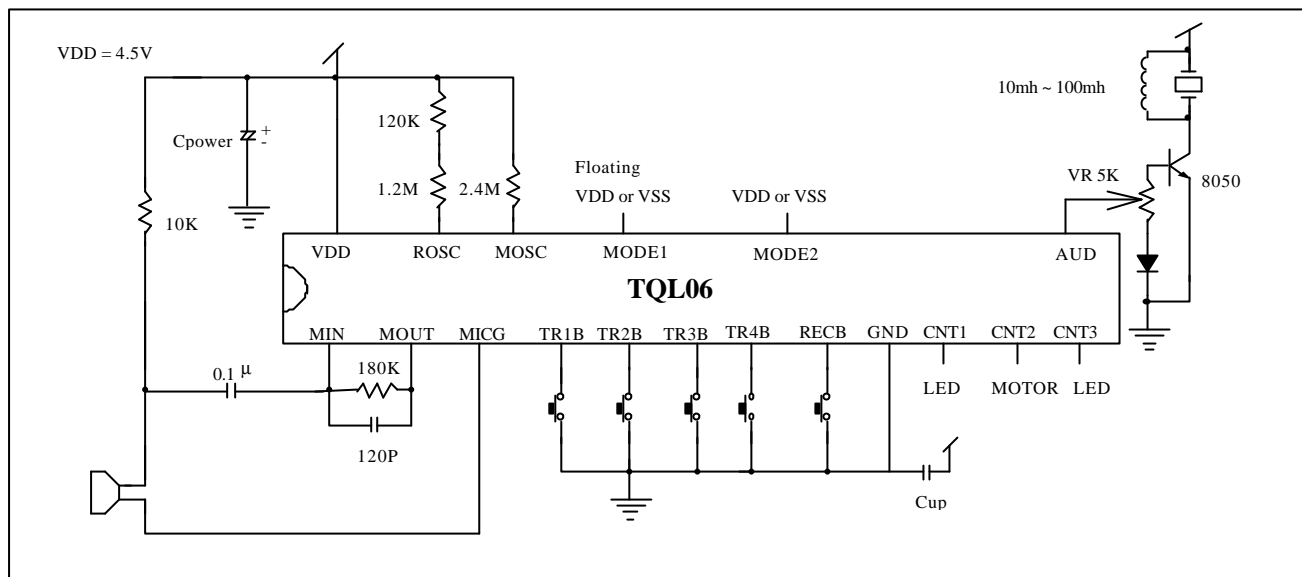


Note:

Cpower : 0.1μF ~ 10μF

Cup: 0.1μF

4. For piezo

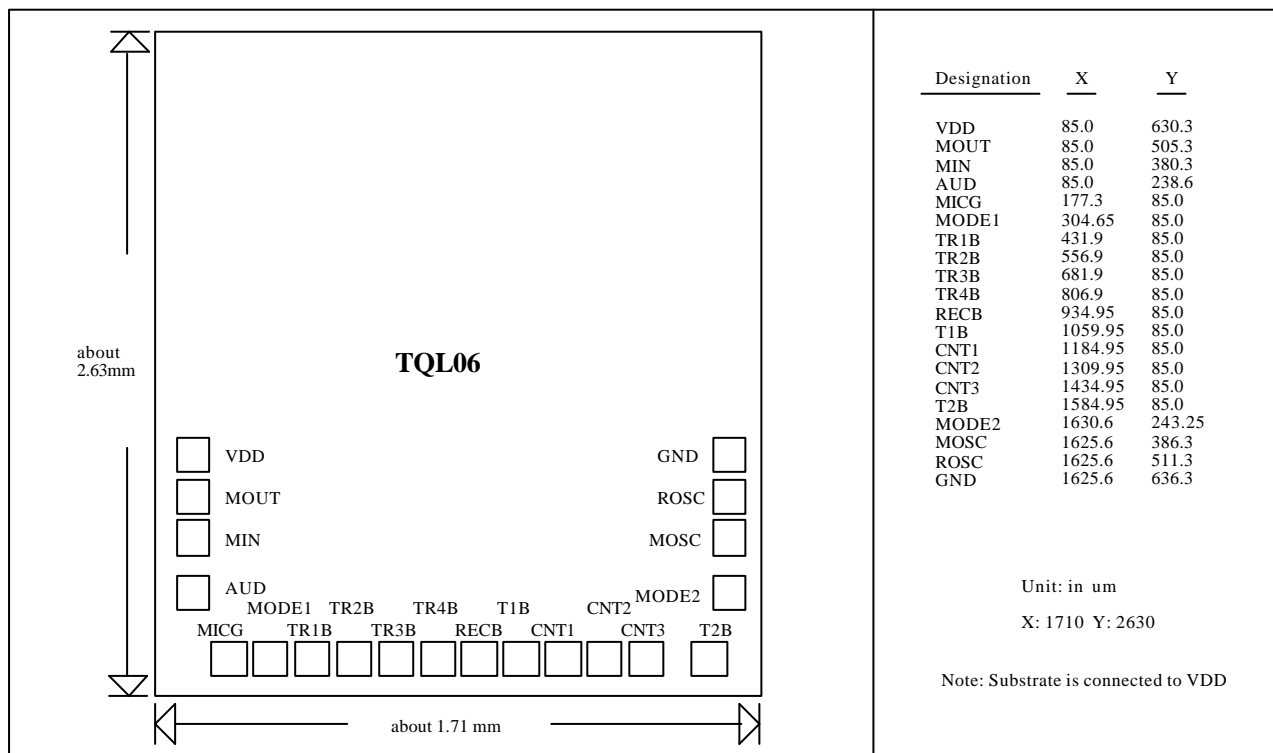


Note:

Cpower : 0.1µF ~ 10µF

Cup: 0.1µF

Bonding Diagram



Song List

TQL06-1:

TR1B

1. Edelweiss
2. Speak Softly Love
3. Lamour Est Blue

TR2B

1. Minuet
2. Toy Symphony
3. Silver Threads Among The Gold

TR3B

1. Happy Birthday

TR4B

1. Jingle Bells
2. Sleigh Ride
3. Angels We Have Head On High