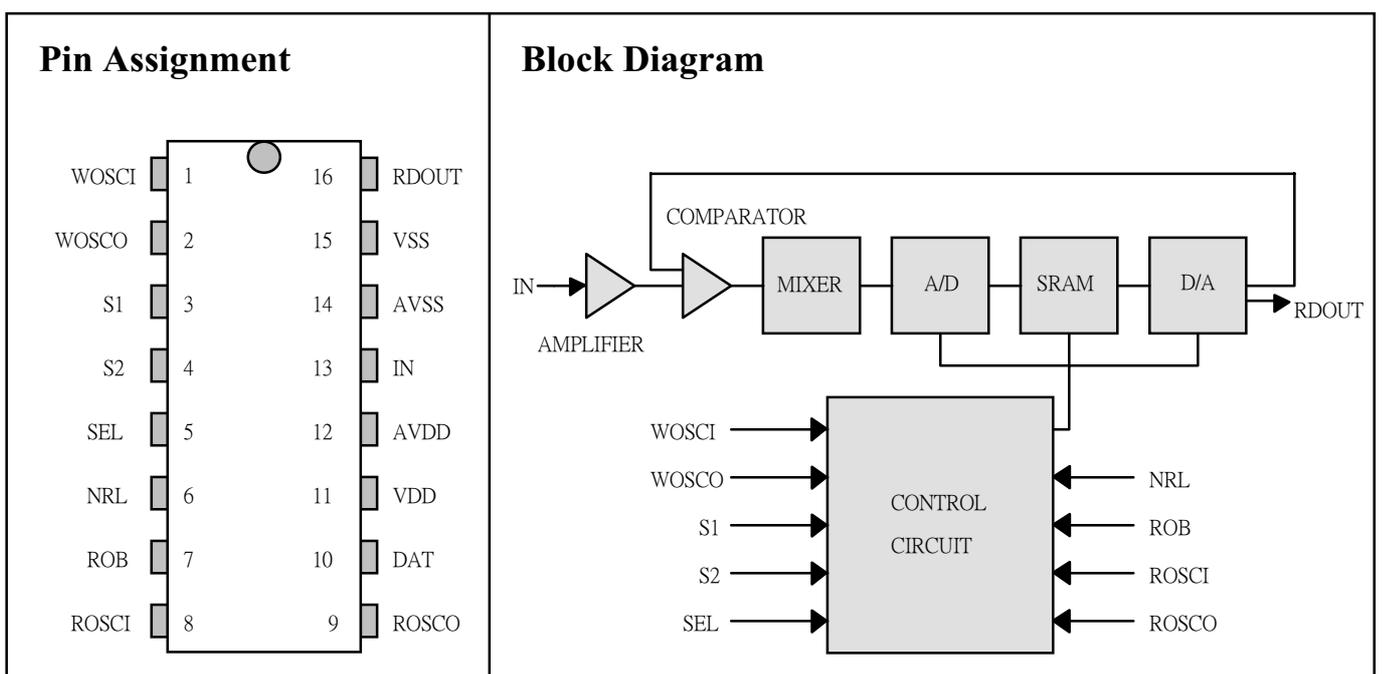


■ Feature

- Wide operating voltage range 3.0V to 5.0V
- Low power consumption
- Several voice effects selectable:
 - ✧ Transposing voice (higher or lower)
 - ✧ Amplifying voice
 - ✧ Robot voice
- Variable resistor or switch can be used to adjust the transposed-voice effect
- External memory is not required
- Build-in reduction noise circuit and silence function
- For application in toys, masks, telephone systems and other voice fields

■ General Description

The WIN8072 is a single-chip CMOS LSI designed for voice changer, which can transpose or distort one voice into another voice by encoding the input audio signals in normal speed and transmit the output audio signals with unusual speed. That is accomplished by sampling the input audio signals into digital signals and re-arranging the digital signals to generate different voice from the user's normal voice. The WIN8072 includes microphone amplifier to amplify voice signal and noise reduction circuit for reducing environment noise.



■ Electrical Characteristics

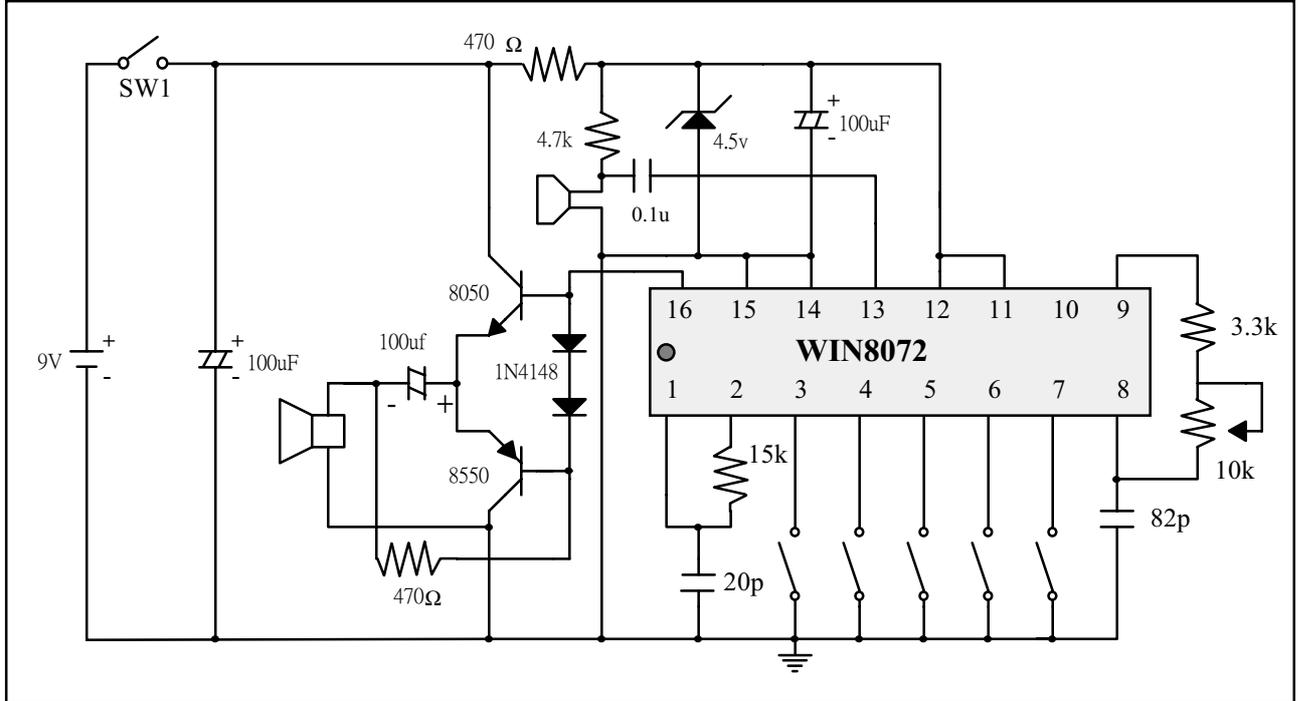
| Parameter | Symbol | Min. | Typ. | Max. |
|--------------------------|---------|------|------|------|
| Operating Voltage | VDD | 3.0V | 4.5V | 5.0V |
| Operating Current | IDD | -- | -- | 10mA |
| Input Voltage of Signal | VINp-p | 0.5V | 1.5V | 2.0V |
| Output Voltage of Signal | VOUtp-p | -- | 1.6V | -- |

■ Pin Description

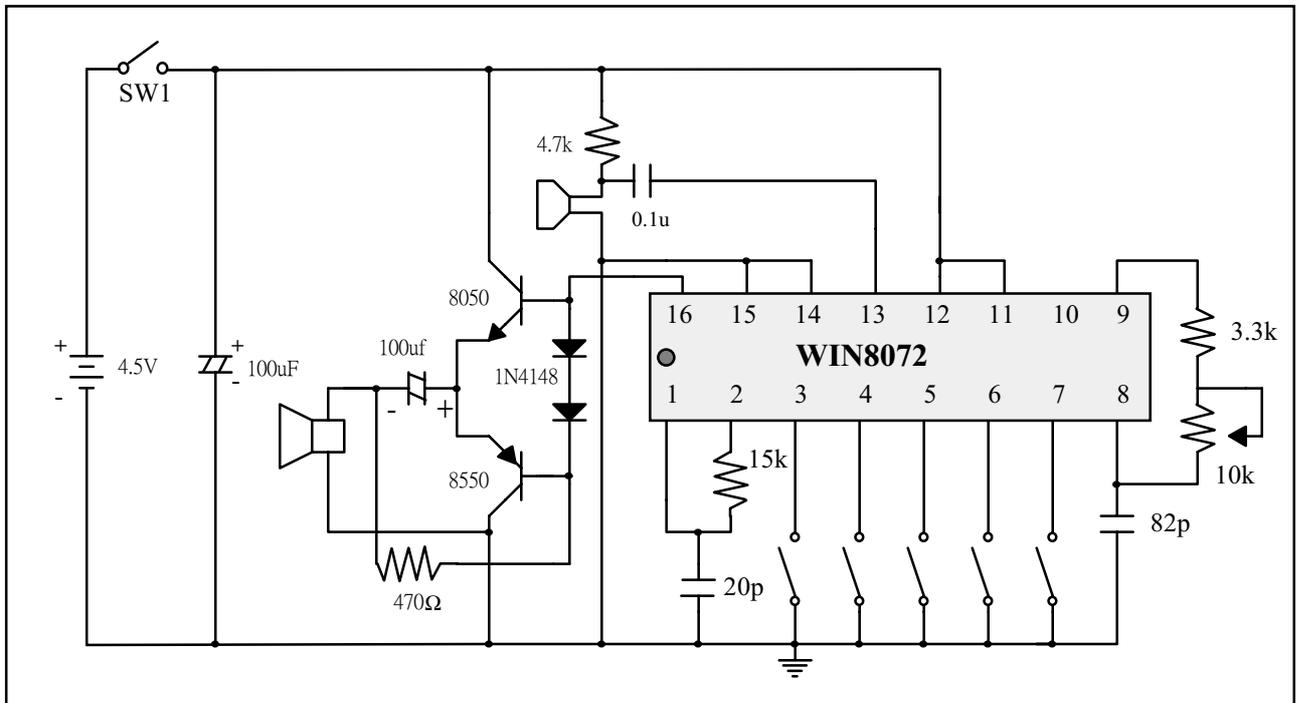
| No. | Designation | Description | | | | | | | | | | | | | | | |
|-------------------------|-------------|--|-------|------|---|---|---|----|---|---|---|---|------------|-------|--------|-------|------|
| 1 | WOSCI | Write (sampling) oscillator input pin | | | | | | | | | | | | | | | |
| 2 | WOSCO | Write (sampling) oscillator output pin | | | | | | | | | | | | | | | |
| 3,4 | S1,S2 | Tone frequency of voice output select pins | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>S1</th> <th>0</th> <th>0</th> <th>1</th> <th>1</th> </tr> </thead> <tbody> <tr> <th>S2</th> <td>0</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <th>Tone freq.</th> <td>800Hz</td> <td>1333Hz</td> <td>660Hz</td> <td>2KHz</td> </tr> </tbody> </table> | S1 | 0 | 0 | 1 | 1 | S2 | 0 | 1 | 0 | 1 | Tone freq. | 800Hz | 1333Hz | 660Hz | 2KHz |
| | | S1 | 0 | 0 | 1 | 1 | | | | | | | | | | | |
| S2 | 0 | 1 | 0 | 1 | | | | | | | | | | | | | |
| Tone freq. | 800Hz | 1333Hz | 660Hz | 2KHz | | | | | | | | | | | | | |
| * Input Frequency: 1KHz | | | | | | | | | | | | | | | | | |
| 5 | SEL | The voice effect are adjusted by variable resistor if the pin connect to GND | | | | | | | | | | | | | | | |
| 6 | NRL | Amplifying voice effect is selected if this pin is connected to GND Transposing voice effect is selected if this pin is floating | | | | | | | | | | | | | | | |
| 7 | ROB | Robot voice effect is selected if this pin is connected to GND | | | | | | | | | | | | | | | |
| 8 | ROSCI | Read (re-arranging) oscillator input pin | | | | | | | | | | | | | | | |
| 9 | ROSCO | Read (re-arranging) oscillator output pin | | | | | | | | | | | | | | | |
| 10 | DAT | For testing only | | | | | | | | | | | | | | | |
| 11 | VDD | Positive power supply | | | | | | | | | | | | | | | |
| 12 | AVDD | Analog positive power supply | | | | | | | | | | | | | | | |
| 13 | IN | Audio signal input pin | | | | | | | | | | | | | | | |
| 14 | AVSS | Analog negative power supply | | | | | | | | | | | | | | | |
| 15 | VSS | Negative power supply | | | | | | | | | | | | | | | |
| 16 | RDOUT | Audio signal output pin | | | | | | | | | | | | | | | |

■ **Application Circuit**

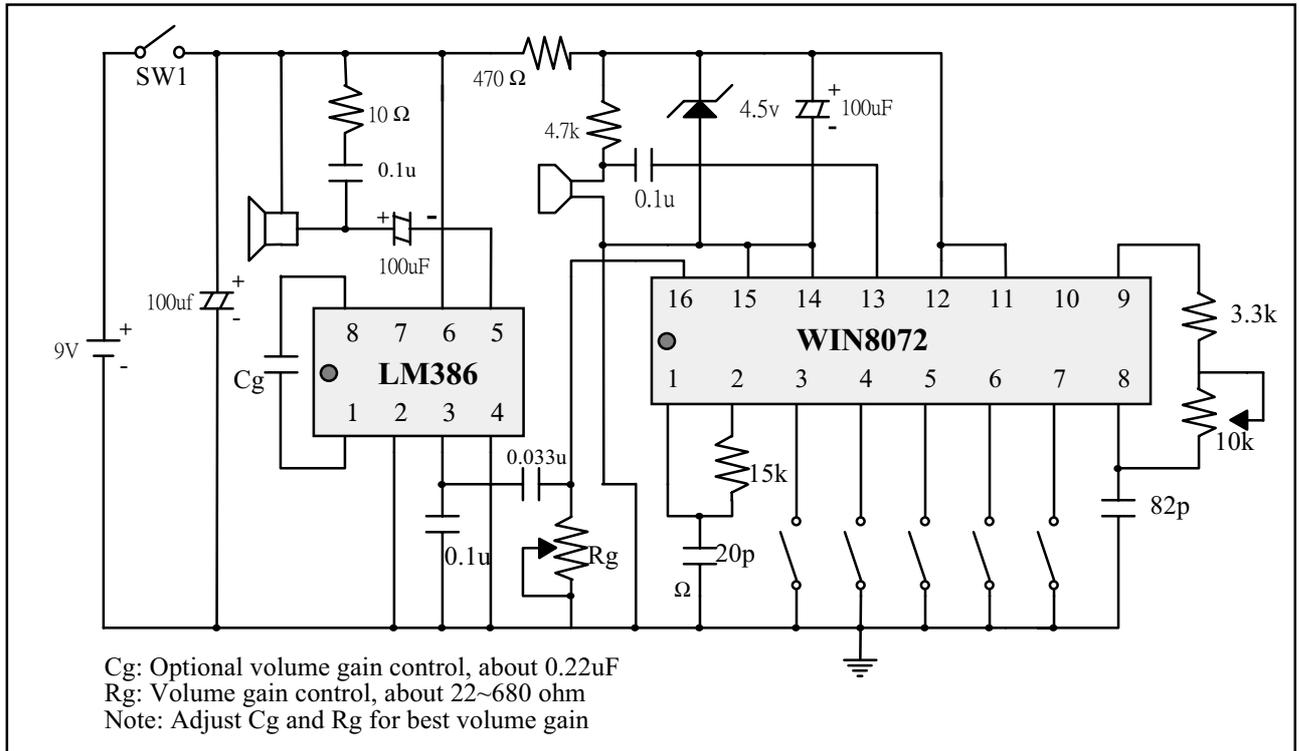
➤ **Variable resistor adjusting with transistor amplifier (VCC = 9V)**



➤ **Variable resistor adjusting with transistor amplifier (VCC = 4.5V)**



➤ **Variable resistor adjusting with LM386 amplifier**



■ **Bonding Diagram**

