

9325812 UNITED MICROELECTRONICS

92D 00610 D T-77-13


UM3611
Voice Control(Whistle)

Features

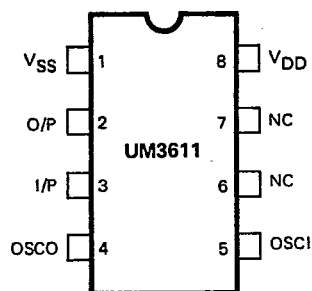
- Typical 3V operating voltage and low power consumption
- External adjustable tracking frequency
- RC oscillator with one external resistor
- On-chip analog signal amplifiers
- Use of whistle for controlling
- Piezo direct drive capability

General Description

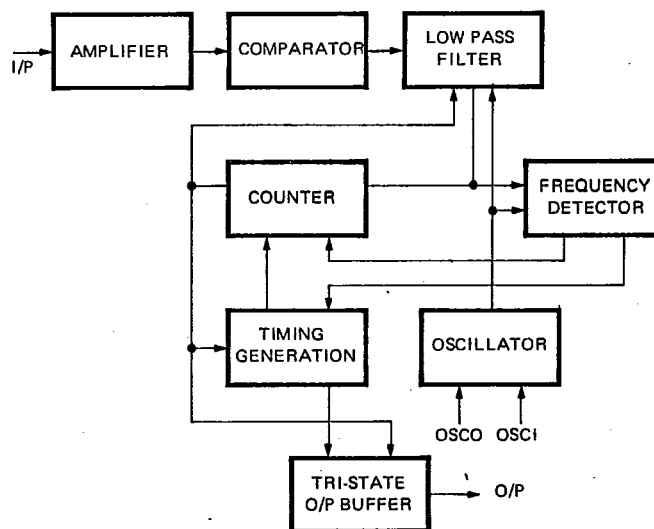
The UM3611 are CMOS LSI circuits which contain analog signal amplifiers and frequency detectors for generating output signal. They are designed for use in key tracers.

CMOS technology used to produce these devices results in very low power consumption. A compact detector module can be constructed with a few external components.

Pin Configuration



Block Diagram



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Absolute Maximum Ratings*

Supply Voltage -0.3V to +5.0V
 Applied Voltage at any Pin
 $V_{SS} - 0.3V$ to $V_{DD} + 0.3V$
 Ambient Temperature under Bias -10°C to 60°C
 Storage Temperature -55°C to 125°C

***Comments**

Stress above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only. Functional operation of this device at these or any other conditions above those indicated in the operational sections of this specification is not implied and exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Electrical Characteristics

($V_{SS} = 0V$, $T_A = 25^\circ C$, $F_{OSC} = 18 KHz$, unless otherwise specified.)

Parameter	Symbol	Min.	Typ.	Max.	Conditions
Operating Voltage	V_{DD}	2.7V	3V	3.3V	
Operating Current	I_{DD}	—	—	100 μA	$V_{DD} = 3V$ No Load
Stand-by Current	I_{STB}	—	—	50 μA	$V_{DD} = 3V$
I/P Sensitivity	V_{SEN}	—	10mV _{pp}	—	@ $f_{in} \cong 1.5 KHz$
Effective I/P Frequency	$F_{I/P}$	1.5KHz	—	2KHz	$F_{osc}/9 \sim F_{osc}/12$
Disable Sink Current	I_{DS}	1 μA	—	—	$V_{DD} = 3V$ $V_{DIS} = 3V$
PB Drive Current	I_{PD}	1 μA	—	—	$V_{DD} = 3V$ $V_{PB} = 0V$
O/P Drive Current	I_{OD}	400 μA	—	—	$V_{DD} = 3V$ $V_{O/P} = 2.4V$
O/P Sink Current	I_{OS}	400 μA	—	—	$V_{DD} = 3V$ $V_{O/P} = 0.6V$

Pin Description

Pin No.	Designation	Description
1	V_{SS}	Negative power supply
2	O/P	The output signal will be generated when I/P pin senses effective frequency.
3	I/P	Piezo buzzer input
4	OSCO	RC oscillator pin or inverted clock output
5	OSCI	RC oscillator pin
6	NC	No connection
7	NC'	No connection
8	V_{DD}	Positive power supply

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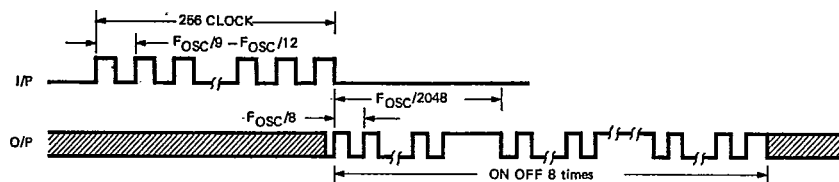
Function Description

Oscillating Circuit

Frequency is generated by an astable multivibrator which depends on an on-chip capacitor and a resistor connected between OSCO PIN and OSCI PIN. Frequency is usually 18KHz.

Modulator Circuit

The input signal is put through the Amplifier and comparator circuit, and the relation between input waveform and output waveform is shown in Fig. 1.



Test Circuit

The signal of desired frequency ($F_{OSC}/9 - F_{OSC}/12$) is input to I/P pin of the device. ($F_{OSC} = 18KHz$). The test circuit

is shown in Fig. 2

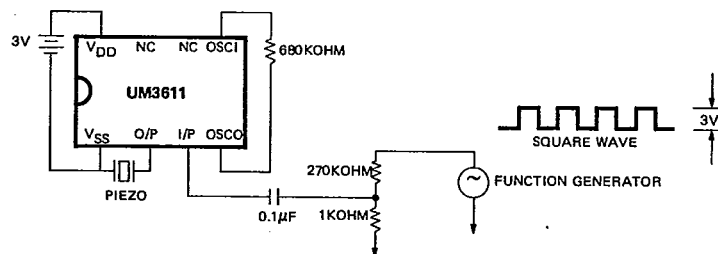
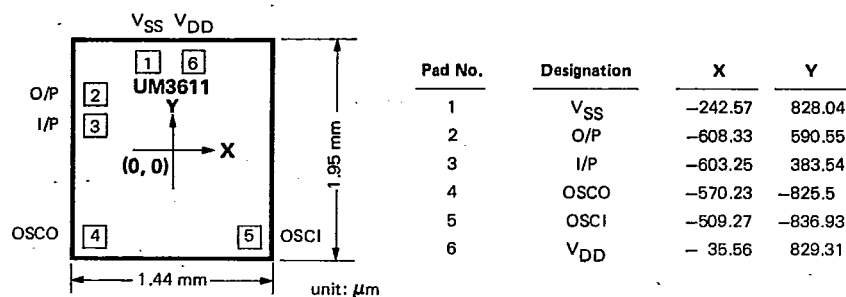


Figure 2. Test Circuit

Bonding Diagram



Application Circuit

