



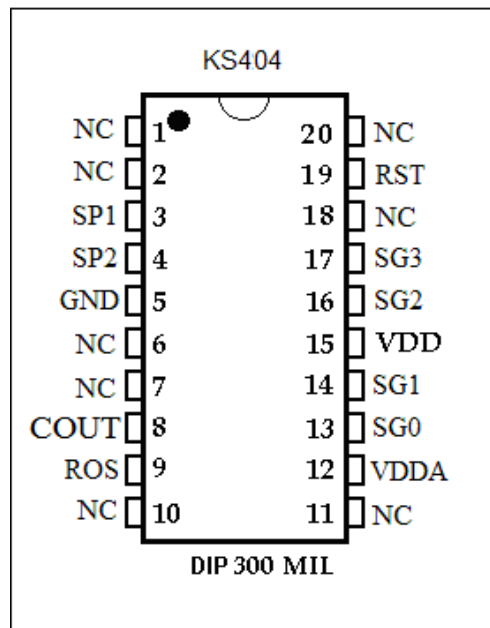
KS404 - Sound Generator IC

The KS404 Sound Generator IC is a voice chip with standard CMOS process and embedded voice storage memory. The IC comes with four programmed sound of different topics. Additional or customized sound can be implemented upon requests.

FEATURES:

- 4 trigger keys to play each sound
- Trigger Options: Edge/Unholdable/Non Retrigger

PIN CONFIGURATION



PIN DESCRIPTION

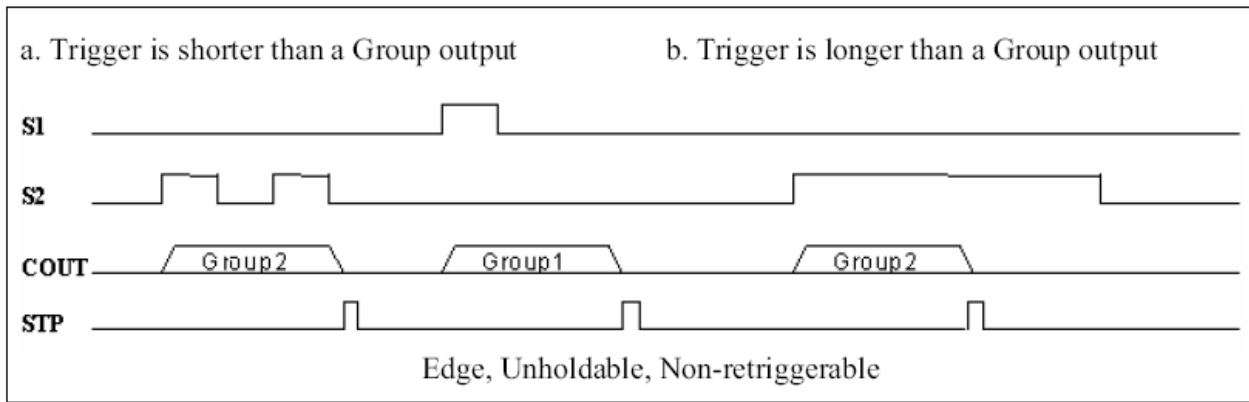
Pin Name	Description
VDD	Positive Power Supply
SP1,SP2	PWM Outputs to drive speaker
GND	Power Ground
SG0-SG3	Trigger pins for sound and LED
COUT	DAC Output for amplified speaker out
RST	Reset Pin, active when low
ROS	Oscillator input
VDDA	Positive Power Supply



APPLICATIONS:

- Toys
- Security Applications
- Car Alarm
- Halloween Props
- Gift Baskets
- Musical Box

TRIGGER MODE AND TIMING CHART



SOUNDS:

The following are some of the sounds programmed on the KS404-X. For more sound selection, visit www.kowatec.com, or contact us.

Cat and Dog Sound	Trigger Pin	Duration(s)
Cat squealing	SG0	3
Cat meowing	SG1	5
Dog barking	SG2	6
Ferocious Dog barking	SG3	8

Order P/N: KS404-1

Rosc Value: 100k ohm

Ghost Sound	Trigger Pin	Duration(s)
He! He! He!	SG0	10
Wicked Male Laugh	SG1	4
Ghost moan	SG2	8
Evil Laugh	SG3	3

Order P/N: KS404-2

Rosc Value: 100k ohm

Ordering

When ordering the Sound Generator IC, please specify the sound selection you want.



APPLICATION CIRCUIT

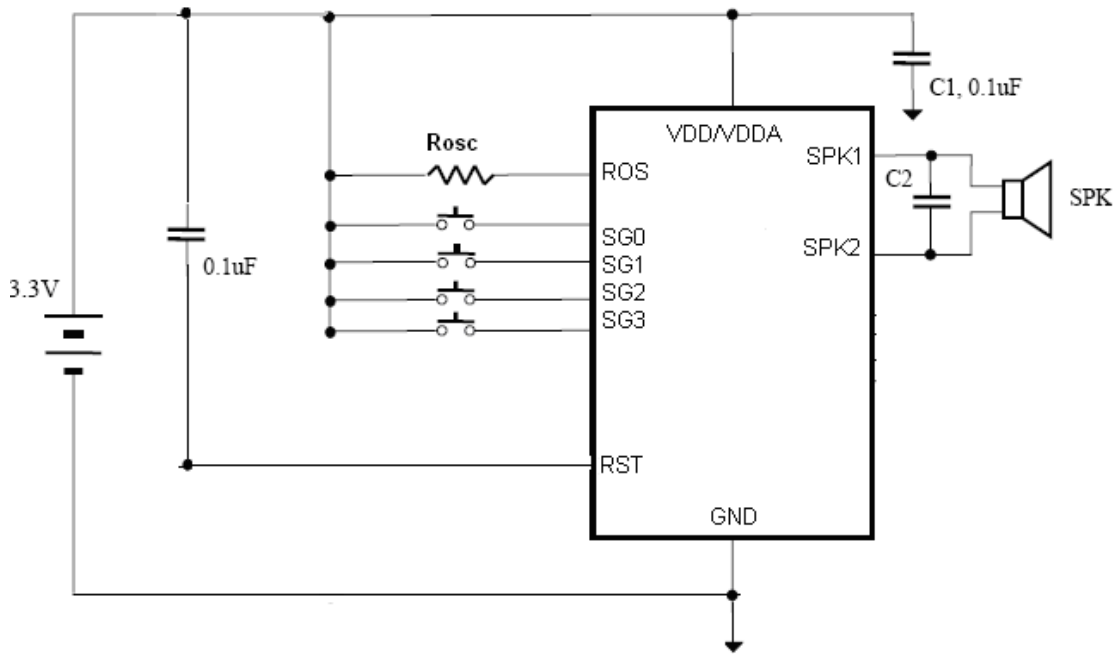


Fig. 1 PWM 3.3v

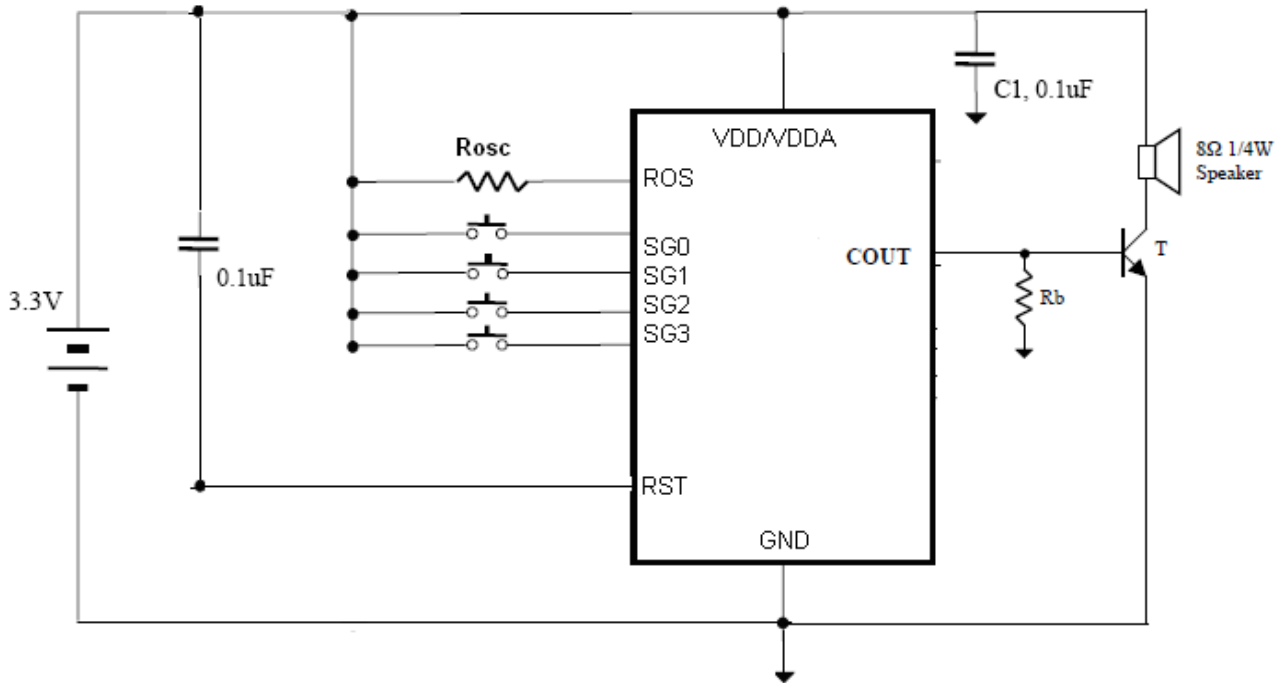


Fig 2. COUT 3.3v

Rb is base resistor from 120 Ohm to 390 Ohm depends on VDD value and transistor gain. T is an NPN transistor with beta larger than 150.



ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min	Type	Max	Unit	Remark
Operating Voltage	VDD	2.2	3.0	3.8	V	
Operating Current	IOP			15	mA	I/O properly terminated
Standby Current	ISB		1	5	uA	I/O properly terminated
Operating Temperature	TEMP	-10		+60	C	

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