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## □ Description

MC8040 is a 40?PWM or**DAC** voice output with high quality speech input pin and 6 I/O pinsimple speech.

## □ Functions

- z MAX voice file : 700
- z MAX Groups : 64
- z MAX Step : 700
- z Signal step mute length 0.64 s ( 6k sample rate )
- z Operating Voltage range: 2.4V ~ 5V
- z Total Voice Duration : 40?(240K Samples)
- z Input pin : 2
- z I/O pin : 6
- z Voice output : PWM and DAC
- z Sequential Key : TG1 -> 32 Groups.  
                          TG2 -> 21 Groups.  
                          TG5~TG12-> 1 Group
- z Debounce time : 50 us or 10 ms
- z On/Off function : **only** for TG1 & TG2
- z Trigger mode (for all Input pins) :
  - A. Edge/Level
  - B. Hold/Unhold
  - C. Retrigger/Irretrigger
  
- z **Output status** (for each Output pin) :
  - A. Stand by Status.
  - B. Busy Low Active.
  - C. Busy High Active.
  - D. LED Flash at 6 Hz.
  - E. LED Flash at 3 Hz.

z **Play rate level:**

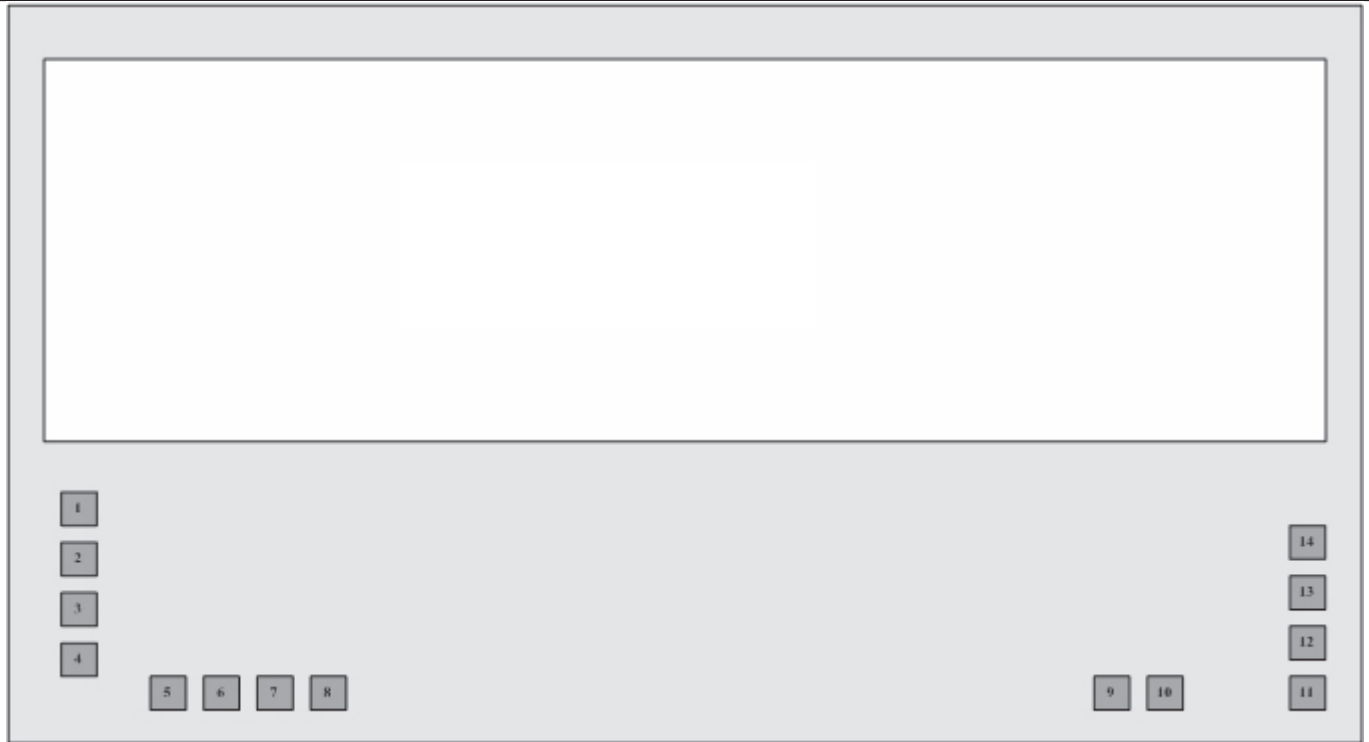
MC8040 can provide different play rate in one code as follow

Play rate(K)	Play rate(K)
3	6
3.2	6.4
3.31	6.85
3.42	7.38
3.55	8
3.69	8.72
3.84	9.6
4	10.66
4.17	12
4.36	13.71
4.57	16
4.8	19.2
5.05	24
5.33	
5.64	

□ **Sk040 Pad Location**

CHIP SIZE: 0( 0) (1730, 1196)M

z The IC substrate should be connect to vss



NO	PAD NAME	X	Y	NO	PAD NAME	X	Y
1	TG2	-755	-224	8	TG12	-320	-507
2	TG1	-755	-314	9	VSS	192	-507
3	TG5	-755	-404	10	VSS	281	-507
4	TG6	-755	-494	11	PWM2	759	-529
5	TG7	-590	-507	12	PWM1	759	-412
6	TG8	-500	-507	13	VDD5	794	-325
7	TG11	-410	-507	14	VDD	794	-240

□ **Sk040 DC character**



思科微

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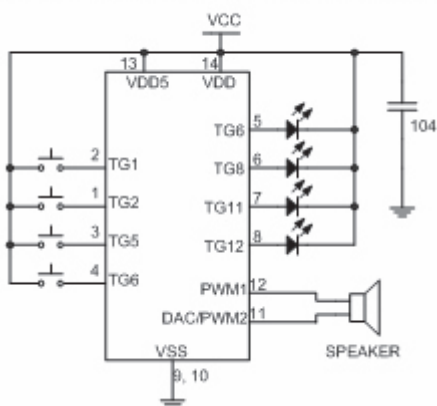
Sk040

40" Simple Speech

Item	Symbol	Min	Typ	Max	Unit	Condition
Operating voltage	VDD	2.4	3.0	5	V	
Standby current	I <sub>sb</sub>		1	5	uA	VDD=3V, no load
Operating current	I <sub>op</sub>		600		uA	
			1		mA	VDD=4.5V, no load
Drive current of O	I <sub>od</sub>		5		mA	VDD=3V
Sink current of O	I <sub>os</sub>		10		mA	VDD=3V
Drive current of PWM	I <sub>od</sub>		200		mA	VDD=3V, VOUT=1.5V
Sink current of PWM	I <sub>os</sub>		200		mA	VDD=3V, VOUT=1.5V

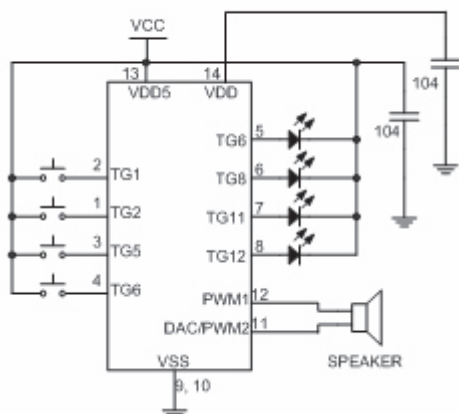
## □ Sk040 Application Circuit

### MC8040 3V APPLICATION



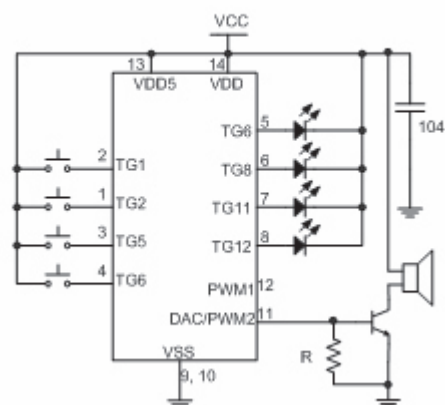
- z System Power 2.4~3.6V
- z PWM1 & PWM2 directly drive Speaker

### MC8040 5V APPLICATION



- z System Power 2.4~5V
- z PWM1 & PWM2 directly drive Speaker

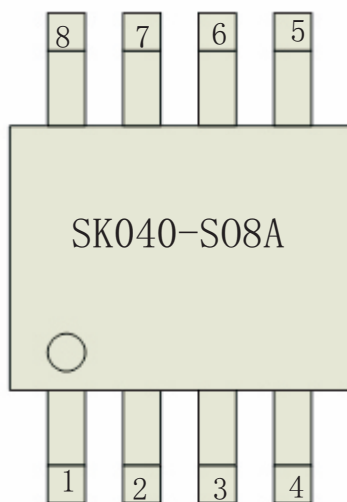
### MC8040 DAC APPLICATION



- z System Power 2.4~3.6V
- z DAC Output, Connected with 8050 & Resistor driving Speaker

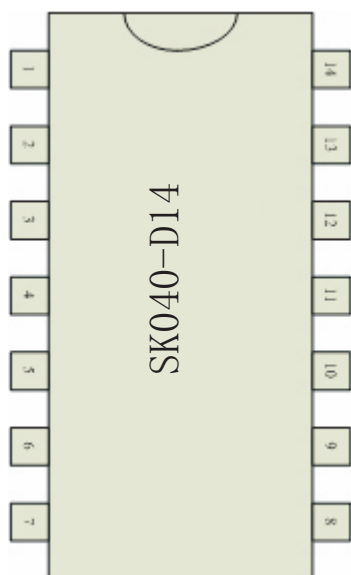
## □ Sk040 Package Information

SK040-S08A



PIN	NAME
1	TG2
2	TG1
3	TG5
4	VSS
5	PWM2/DAC
6	PWM1
7	VDD5
8	VDD

SK040-D14



PIN	NAME
1	PWM2/DAC
2	PWM1
3	VDD5
4	VDD
5	VSS
6	TG12
7	TG11
8	TG8
9	NC
10	TG2
11	TG1
12	TG5
13	TG6
14	TG7

## □ Writer Mapping Description

Writer Pin: **TG2, TG1, TG5, VSS, PWM2, PWM1, VDD5, VDD**

Write Board Revised from 2M Write Board --- Pin Assignment Reference

OTP Writer Power Board Pin Mapping Table			
DIP 48	PAD Name	SK040-S08A	SK040-D14
10-RSTN			
11-GND	9-VSS, 10-VSS	4-VSS	5-VSS
12-SCK	11-PWM2	5-PWM2	1-PWM2
13-CS	12-PWM1	6-PWM1	2-PWM1
14-VCC	13-VDD5, 14-VDD	7-VDD5, 8-VDD	3-VDD5, 4-VDD
36-TEST			
37-VPP	1-TG2	1-TG2	10-TG2
38-DI01	2-TG1	2-TG1	11-TG1
39-DI02	3-TG5	3-TG5	12-TG5

## □ Writer Board Slot Location

