

# SVM7940C Series

## Multi-Melody IC



- 512 Words Melody ROM
- Piezo Transducer Direct Drive
- 4 Melodies Max. (Binary Code Selection)  
8 Melodies (Serial Trigger Selection)

### DESCRIPTION

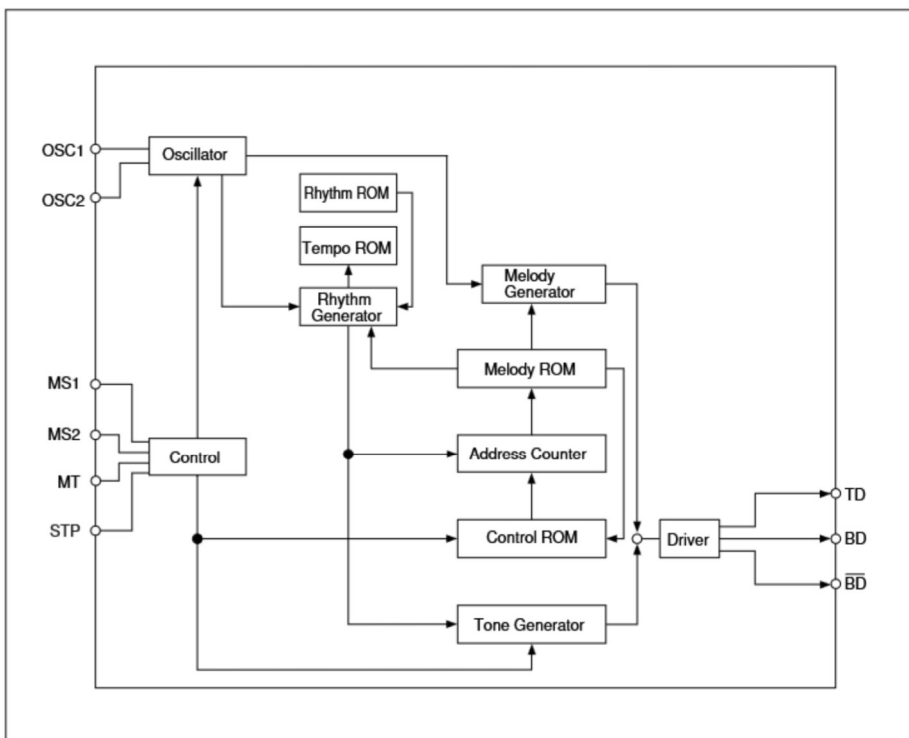
The SVM7940C Series are CMOS IC circuits which contain a programmed ROM for playing tunes. It is designed for electronic watches or music boxes. The SVM7940C series has 512 notes and a maximum of 4 or 8 melodies may be selected by switch.

NOTE: These are ongoing user service products.

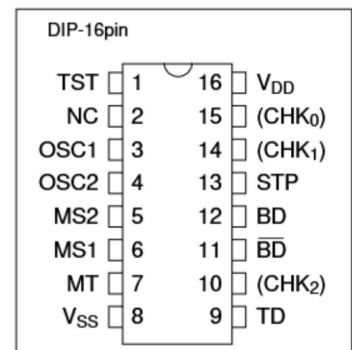
### FEATURES

- Mask programmable up to 512 notes
- Maximum 4 or 8 melodies can be selected by switch
- Can be driven by DC pulse or AC pulse (Mask selection)
- Piezo transducer direct drive
- NPN transistor coil drive
- Melody can be stopped halfway by switching (Only applied to one-shot mode)
- Sound demonstration capability
- Mono tone
- Available for high impedance buzzers
- Hourly chime (Option)
- Package .....DIP-16pin (plastic)

### BLOCK DIAGRAM



### PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATINGS

(V<sub>SS</sub> =0V)

Rating	Symbol	Value	Unit
Supply voltage	V <sub>DD</sub>	-0.3 to 5.0	V
Input/Output voltage	V <sub>I/O</sub>	-0.2 to V <sub>DD</sub> +0.2	V
Operating temperature	T <sub>opr</sub>	-20 to +65	°C
Storage temperature	T <sub>stg</sub>	-65 to +150	°C
Soldering temperature and time	T <sub>sol</sub>	260°C, 10s (at lead)	—

■ ELECTRICAL CHARACTERISTICS

(V<sub>SS</sub> =0V, T<sub>a</sub> =25°C)

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit	
Operating voltage	V <sub>DD</sub>		1.2	1.5	2.0	V	
"1" input voltage	V <sub>IH</sub>		V <sub>DD</sub> -0.1	—	V <sub>DD</sub>	V	
"0" input voltage	V <sub>IL</sub>		V <sub>SS</sub>	—	V <sub>SS</sub> +0.1	V	
"1" input current (Terminal OSC1)	I <sub>IH1</sub>	V <sub>DD</sub> =1.5V, V <sub>IH1</sub> =V <sub>DD</sub>	—	—	0.05	μA	
"1" input current (Terminal SEL1, SEL2)	I <sub>IH2</sub>	V <sub>DD</sub> =1.5V V <sub>IH2</sub> =V <sub>DD</sub>	Serial tigger selection		1.5	—	15
			Binary code selection	Standby	—	—	0.05
"1" input current (Terminal STP)	I <sub>IH3</sub>	V <sub>DD</sub> =1.5V V <sub>IH3</sub> =V <sub>DD</sub>	Standby		—	—	0.05
			Play		1.5	—	15
"1" input current (Terminal MT, TST)	I <sub>IH4</sub>	V <sub>DD</sub> =1.5V, V <sub>IH4</sub> =V <sub>DD</sub>	Standby		—	—	0.05
			Play		1.5	—	15
"1" input current (Terminal TST, OSC1, SEL1, SEL2, MT, STP)	I <sub>IL</sub>	V <sub>DD</sub> =1.5V V <sub>IL</sub> =V <sub>SS</sub>	—	—	0.05	μA	
"1" output current (Terminal OSC2)	I <sub>OH1</sub>	V <sub>DD</sub> =1.2V, V <sub>OH1</sub> =1.1V	3.0	—	30	μA	
"0" output current (Terminal OSC2)	I <sub>OL1</sub>	V <sub>DD</sub> =1.2V, V <sub>OL1</sub> =0.1V	3.0	—	30	μA	
Input amplitude	A <sub>I</sub>	V <sub>DD</sub> =1.5V, when external reference signal applied to OSC1	$\left  \frac{V_{DD}}{2} \right  \pm 0.3$	—	—	V	
Average current drain during standby	I <sub>STB</sub>	V <sub>DD</sub> =1.5V, All terminals open	—	—	0.3	μA	
Average current drain during play	I <sub>OPR</sub>	V <sub>DD</sub> =1.5V, f <sub>OSC</sub> =32.768kHz V <sub>DD</sub> connected to terminal MT	—	40	80	μA	

■ OSCILLATION CHARACTERISTICS (CR Oscillation)

(V<sub>SS</sub> =0V, T<sub>a</sub> =25°C)

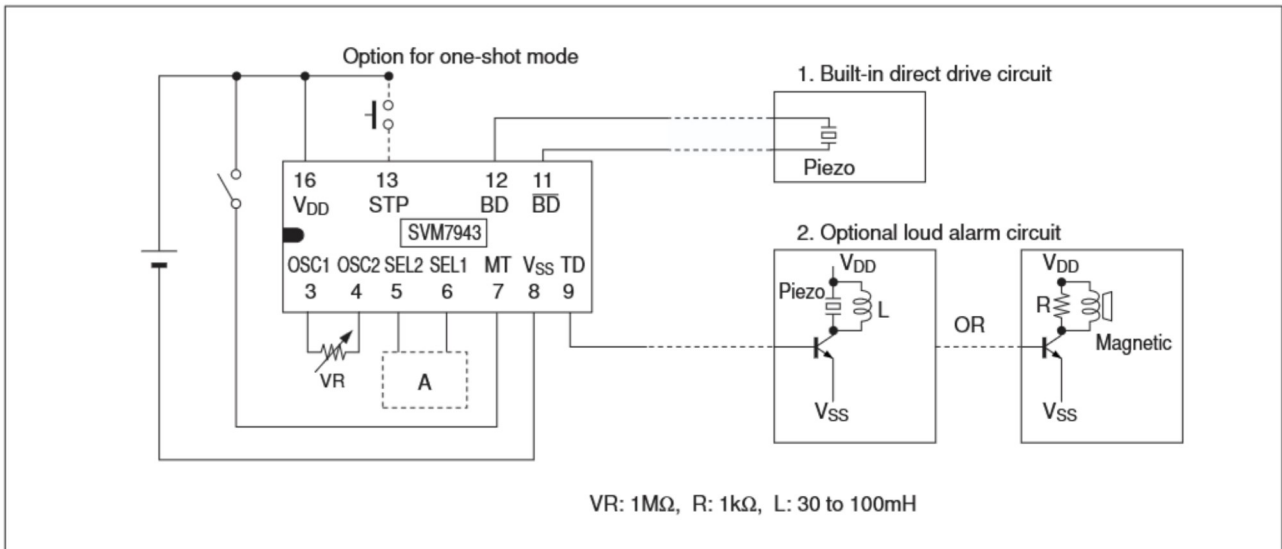
Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Oscillator frequency	f <sub>OSC</sub>	V <sub>DD</sub> = 1.5V VR=620kΩ	-30	32.768kHz	+30	%
Oscillator self-start voltage	V <sub>STA</sub>	VR=620kΩ	1.2	—	—	V
Oscillator stop voltage	V <sub>STP</sub>	VR=620kΩ	—	—	1.2	V

■ SVM7940 SERIES (Mask selection)

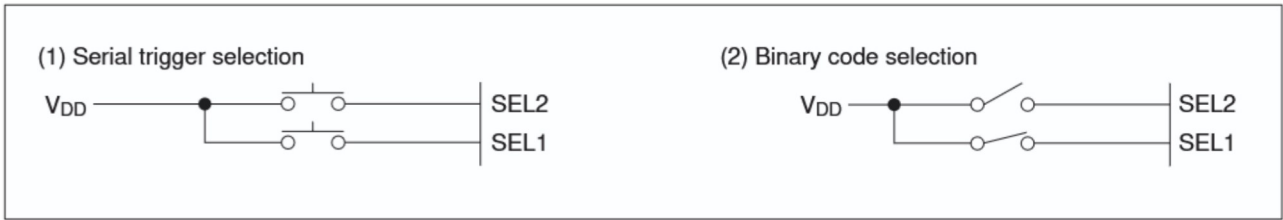
Type	Oscillation	Tune mode	Tune selection
SVM7942	CR self OSC.	Level hold	Serial trigger selection
SVM7943	CR self OSC.	One-shot	Serial trigger selection

■ BASIC EXTERNAL CONNECTION

- SVM7942, SVM7943



■ **CIRCUIT FOR SELECTION:** at a position A of above block diagram 1 & 2.



■ **SELECTION OF SONG AND SOUND DEMONSTRATION (Mask selection)**

Options	Terminal	SEL2	SEL1	MT
(1)		Select song only	Sound demo only	
(2)		Select song only	Select song and sound demo	Alarm input or sound demo input
(3)		Only when both SEL1 and SEL2 are triggered, select song and sound demo, or select song only.		
(4)		Select song by binary code of SEL1 and SEL2 (Max.4 tunes)		

■ **PACKAGE DIMENSIONS**

