EPSON

SVM7860C Series

Melody IC
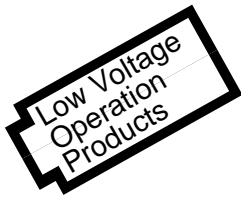
● **2 Sound Sources**
● **One Melody**
● **127 Words Melody ROM**

Low Voltage Operation Products

■ DESCRIPTION

The SVM7860C Series CMOS IC produce melodies or alarm tones from a preprogrammed ROM.

The ROM has a capacity of 127 words and can store 1 melody from two sound sources with an envelope.
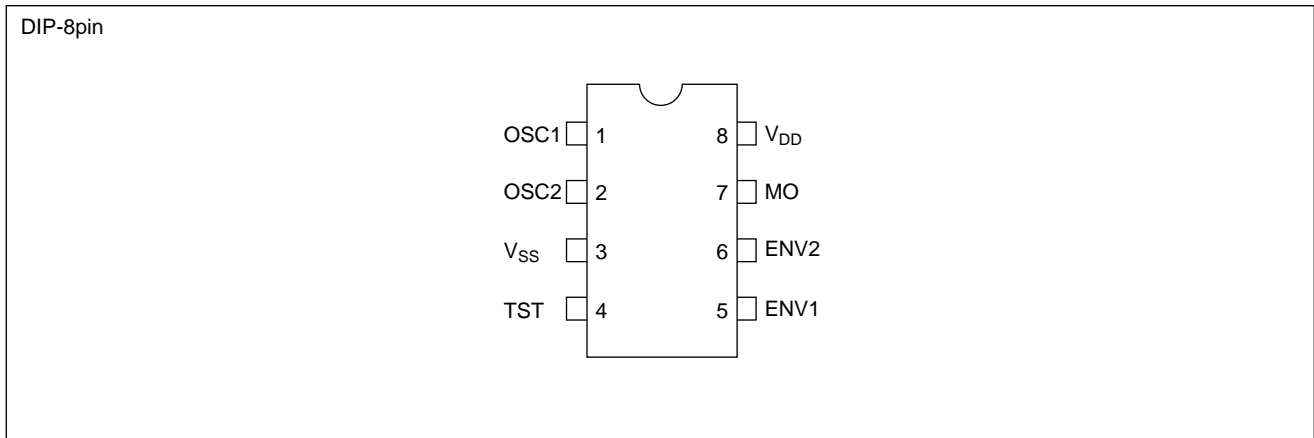
■ FEATURES

● Melody ROM capacity .... 127 words
● Melody 1
● Two sound sources with an envelope (CR envelope)
● DC triggered (power on/off) performance start mode
● Level hold performance
● 1.5/5.0V operating voltage (mask selected)
● Package .... DIP-8pin (plastic)

■ BLOCK DIAGRAM

■ PIN CONFIGURATION

DIP-8pin

OSC1	1	8	V_{DD}
OSC2	2	7	MO
V_{SS}	3	6	ENV2
TST	4	5	ENV1
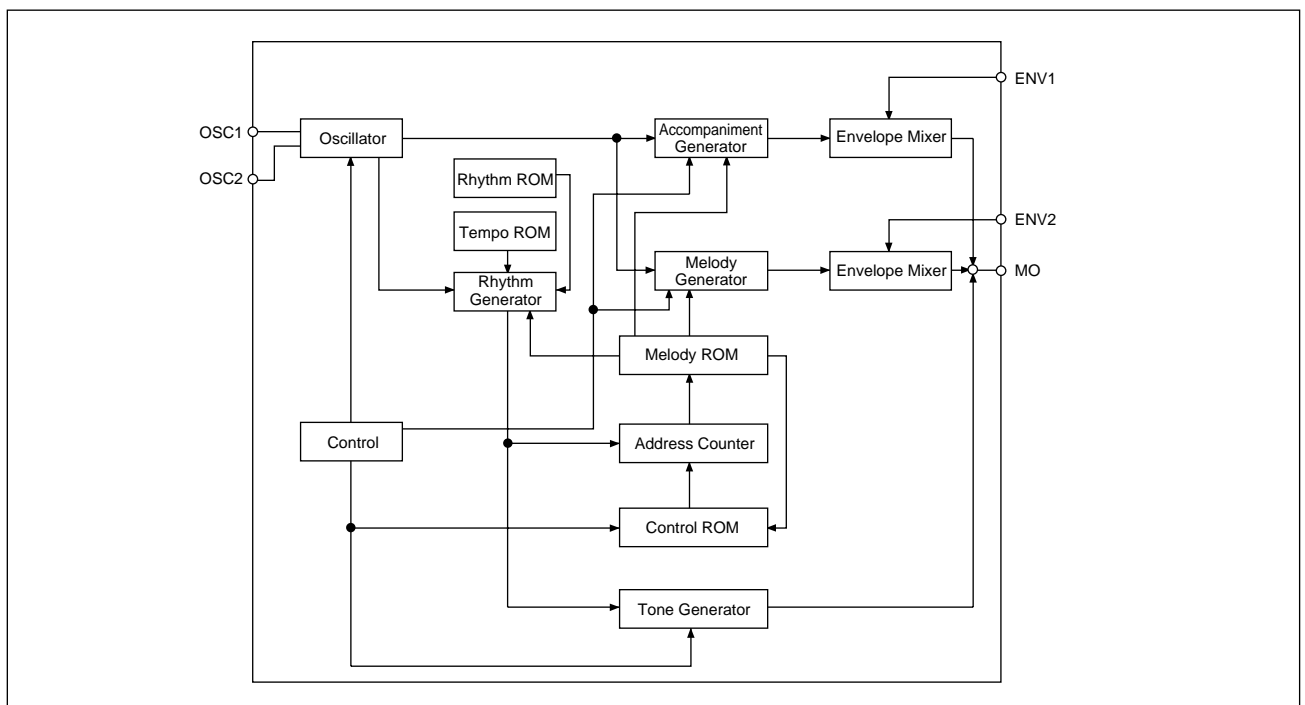
■ PIN DESCRIPTION

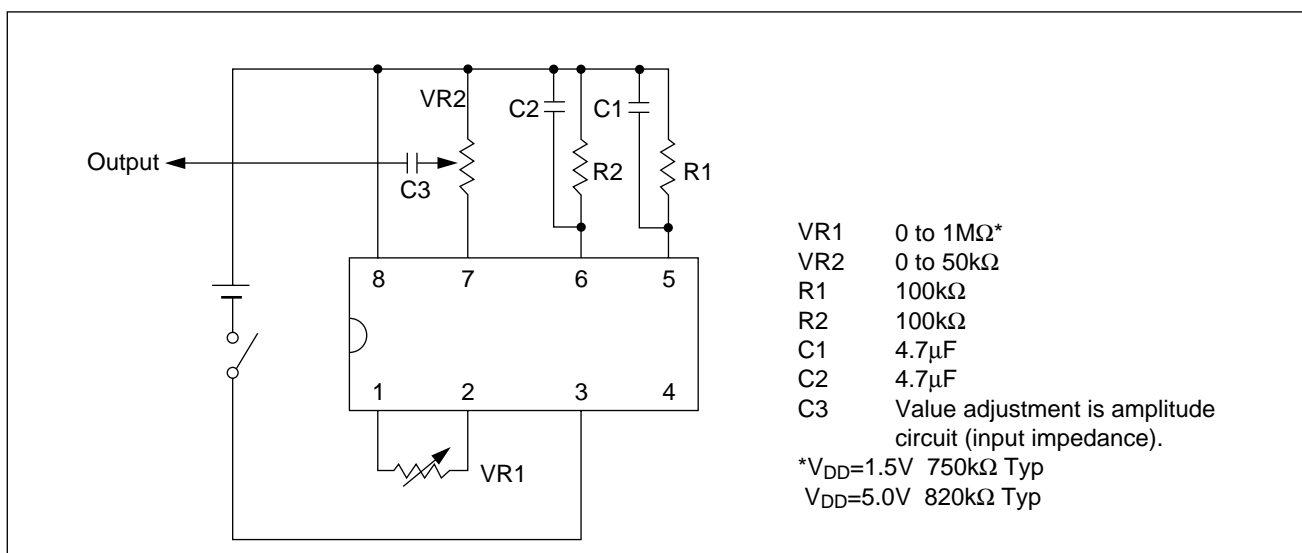| Pin name	Pin No.	Pull-down resistor	Function
OSC1	1	-	A resistor is connected between both terminals to form a ring
OSC2	2	-	oscillator, or external reference signals are applied to OSC1.
V_{SS}	3	-	Power supply terminal (0V)
TST	4	Provided	LSI test input
ENV1	5	-	Connects resistor and capacitor to add envelope to main melody.
ENV2	6	-	Connects resistor and capacitor to add envelope to accompaniment.
MO	7	-	Output terminal for acoustic signals.
V_{DD}	8	-	Power supply terminal (+)

■ LINE UP

Model	Source oscillation
SVM7860C	CR oscillation
SVM7861C	External reference signal

■ PACKAGE DIMENSIONS

Plastic DIP-8pin

9.7max
(0.381max)

9.1±0.2
(0.358 +0.008 −0.007)

8   5

INDEX

1   4

6.4±0.2
(0.252±0.007)

1.5
(0.059)

4.6max (0.181max)
3.75 (0.148)
3.1min (0.123min)

0.4min
(0.016min)

2.54
(0.1)

0.46±0.1
(0.018 +0.004 −0.003)

0°
15°

7.62
(0.3)

0.25 +0.03 −0.01
(0.01 +0.001 −0)

Unit: mm
(inch)
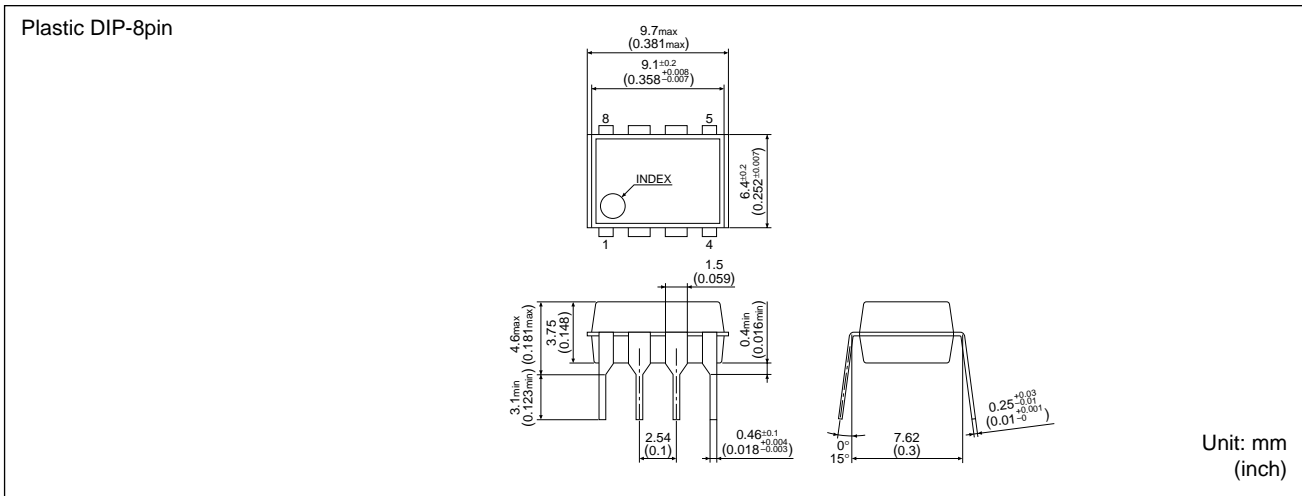
■ BASIC EXTERNAL CONNECTION

Output ◄

VR2

C2

C1

C3

R2

R1

8   7   6   5

1   2   3   4

VR1

VR1	0 to 1MΩ*
VR2	0 to 50kΩ
R1	100kΩ
R2	100kΩ
C1	4.7μF
C2	4.7μF
C3	Value adjustment is amplitude circuit (input impedance).

*V_{DD}=1.5V 750kΩ Typ
 V_{DD}=5.0V 820kΩ Typ

■ MO OUTPUT PIN EQUIVALENT CIRCUIT

main melody ———▷———130kΩ typ.

150kΩ typ.
accompaniment ———▷———

○ MO pin

inside of SVM7860
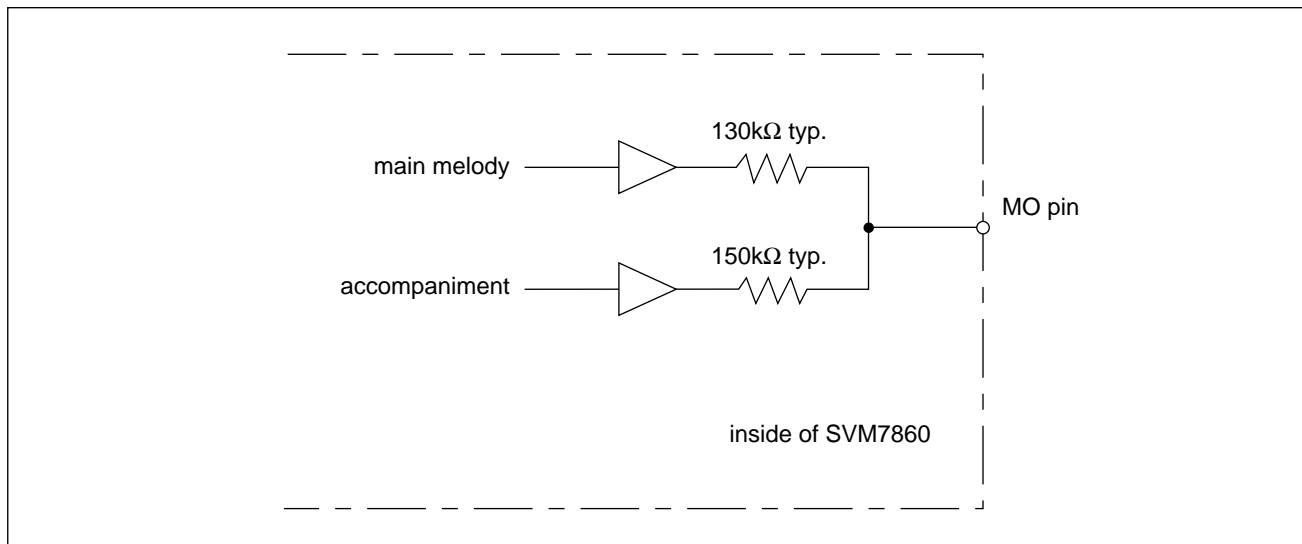
■ ABSOLUTE MAXIMUM RATINGS

$(V_{SS} = 0V)$

Rating	Symbol	Value	Unit
Supply voltage	V_{DD}	-0.3 to 7.0	V
Input voltage	V_I	-0.3 to V_{DD}+0.3	V
Output voltage	V_O	-0.3 to V_{DD}+0.3	V
Operating temperature	T_{opr}	-20 to 85 ($V_{DD} \geq$1.5V)	°C
Storage temperature	T_{stg}	-65 to 150	°C
Soldering temperature and time	T_{sol}	260°C, 10s (at lead)	-

■ ELECTRICAL CHARACTERISTICS

● V_{DD}=1.5V

$(V_{SS} = 0V,\ Ta = 25°C)$

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply voltage	V_{DD}		1.2	1.5	2.0	V
High level input voltage	V_{IH}	TST	V_{DD}-0.3	-	V_{DD}	V
Low level input voltage	V_{IL}	TST	V_{SS}	-	V_{SS}+0.3	V
High level input current	I_{IH}	OSC1	-	-	0.05	μA
Low level input current	I_{IL}	OSC1	-	-	0.05	μA
Input amplitude	A_I	$V_{DD} \geq$1.5V,OSC1 input	$\left\|\frac{V_{DD}}{2}\right\| \pm 0.4$	-	-	V
Operating supply current	I_{DD0}		-	50	100	μA

● V_{DD}=5.0V

$(V_{SS} = 0V,\ Ta = 25°C)$

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply voltage	V_{DD}		1.2	5.0	5.5	V
High level input voltage	V_{IH}	TST	V_{DD}-0.3	-	V_{DD}	V
Low level input voltage	V_{IL}	TST	V_{SS}	-	V_{SS}+0.3	V
High level input current	I_{IH}	OSC1	-	-	0.1	μA
Low level input current	I_{IL}	OSC1	-	-	0.1	μA
Input amplitude	A_I	$V_{DD} \geq$1.5V,OSC1 input	$\left\|\frac{V_{DD}}{2}\right\| \pm 0.4$	-	-	V
Operating supply current	I_{DD0}		-	1	2	mA

Note Don't touch the oscillation circuit with your hand while playing musical tunes.
The oscillation resistor (VR1) should be covered with resin or others.
The power supply off, when anything unusual should happen.

■ OSCILLATION CHARACTERISTICS(CR OSCILLATION)

● V_{DD}=1.5V

$(V_{SS} = 0V,\ Ta = 25°C)$

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Oscillation frequency	f_{OSC}	V_{DD}=1.5V,VR=750kΩ	-	32.768	-	kHz
Oscillation self-excided voltage	V_{STA}	VR=750kΩ	1.2	-	-	V
Oscillation stop voltage	V_{STP}	VR=750kΩ	-	-	1.2	V

● V_{DD}=5.0V

$(V_{SS} = 0V,\ Ta = 25°C)$

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Oscillation frequency	f_{OSC}	V_{DD}=5.0V,VR_1=820kΩ	-	32.768	-	kHz
Oscillation self-excided voltage	V_{STA}	VR_1=820kΩ	1.2	-	-	V
Oscillation stop voltage	V_{STP}	VR_1=820kΩ	-	-	1.2	V

NOTICE