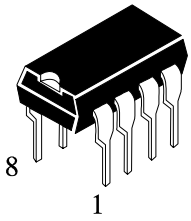
Melody Generator with Accompaniment

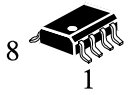
KK8048

FEATURES

- Two Sound Sources with Envelope (CR Envelope)
- Melody is inserted up to two.
- According to customer's request, the inserted melody is flexible.
- 3.0V to 5.0V Operating Voltage
- DC or AC Triggered Performance Start Mode (Mask Selected)
- Can Drive an 8 Ohm Dynamic Loudspeaker if Provided Externally with a Transistor
- Bare chip or 8-pin DIP (Plastic) Package available



N SUFFIX
PLASTIC



D SUFFIX
SOIC

ORDERING INFORMATION

KK8048N Plastic
KK8048D SOIC
T_A = -40° to 85° C for all packages

DESCRIPTION

The KK8048 is a CMOS LSI chip, which plays a prearranged melodies.

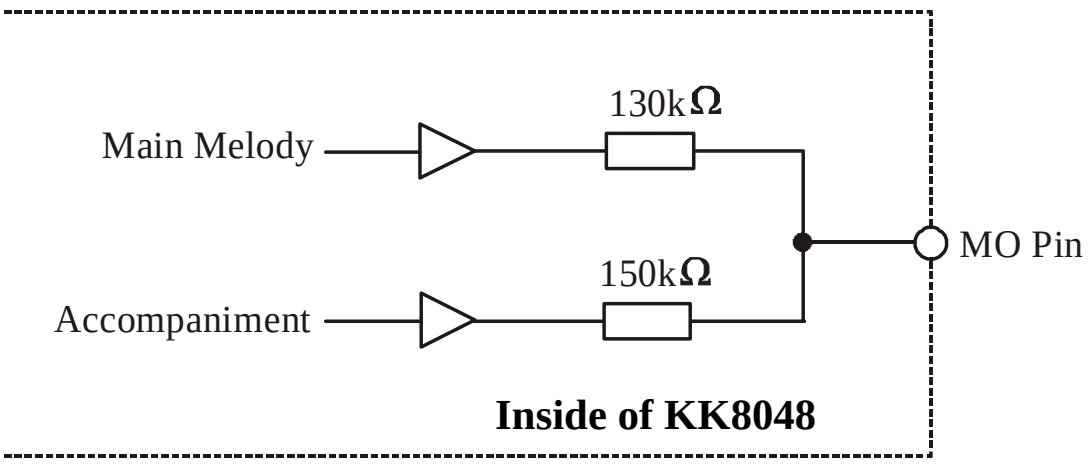
ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

Characteristic	Symbol	Value	Unit
Power Supply Voltage	V_{DD}	- 0.3 to + 7.0	V
Input Terminal Voltage	V_{10}	- 0.2 to V_{DD} + 0.2	V
Operating Temperature	T_a	-40 to + 85 (V_{SS} = 1.5V)	°C
Storage Temperature	T_{stg}	- 65 to + 150	°C
Soldering Temperature and Time	T_{sol}	260°C, 10s (at lead)	

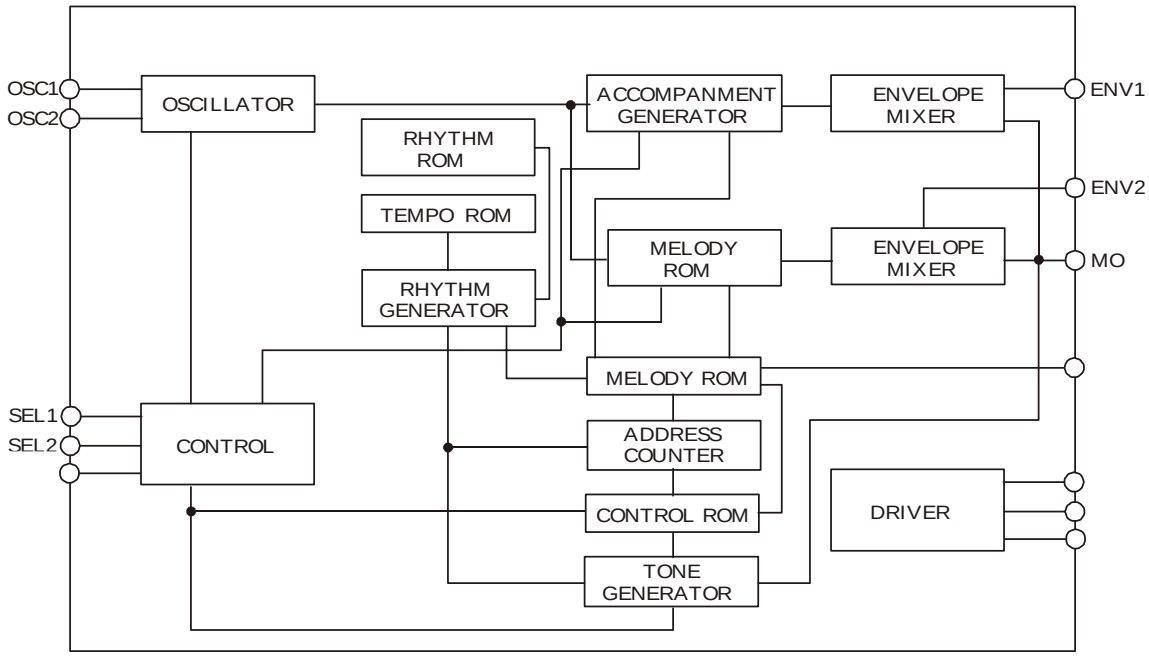
ELECTRICAL CHARACTERISTICS (V_{DD} = 5V, T_a = 25°C; unless otherwise specified)

Characteristic		Symbol	Test Condition	Min	Typ	Max	Unit
Operating Voltage		V_{DD}		3.0	5.0	5.5	V
Input Voltage	"1"	V_{IH}		V_{DD} - 0.3	-	V_{DD}	V
	"0"	V_{IL}		V_{SS}	-	V_{SS} + 0.3	
MT Power Supply Time				150			ms
Response Time						600	ms

MO OUTPUT PIN EQUIVALENT CIRCUIT



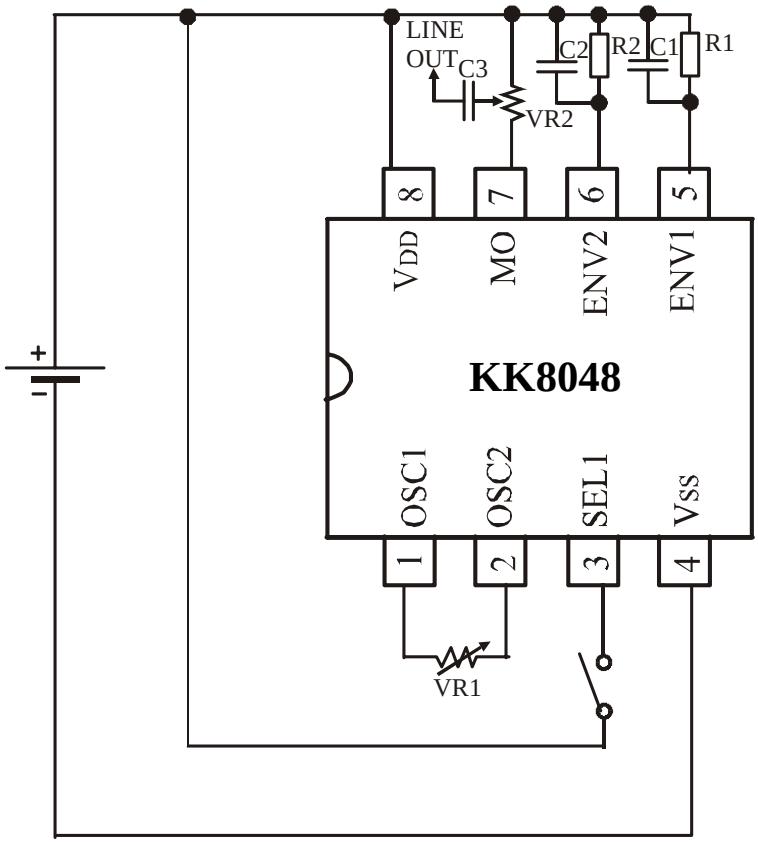
BLOCK DIAGRAM



PIN DESCRIPTION

Pin. No.	Pin Name	Pull-Down Resistor	Functions
1	OSC1	-	A resistor is connected between both terminals to from a ring oscillator, or external reference signals are applied to OSC1.
2	OSC2	-	
3	SEL1	Provided	For binary selection: this Terminal in Conjunction with SEL1, selects a Melody. For direct selection: Selects Melody 2 and Controls Start and Stop of it's Performance.
4	V_{SS}	-	Power Supply Terminal (0V).
5	ENV1	-	Connects Resistor and Capacitor to add Envelope to Main Melody.
6	ENV2	-	Connects Resistor and Capacitor to add Envelope to Accompaniment.
7	MO	-	Output Terminal or Acoustic Signals that have not been Amplified.
8	V_{DD}	-	3.0V to 5.0V Operating Voltage

APPLICATION CIRCUIT (basic external connection)



• CR Oscillation, DC Input

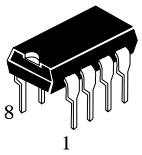
RECOMMENDED CONDITIONS FOR EXTERNAL DEVICES

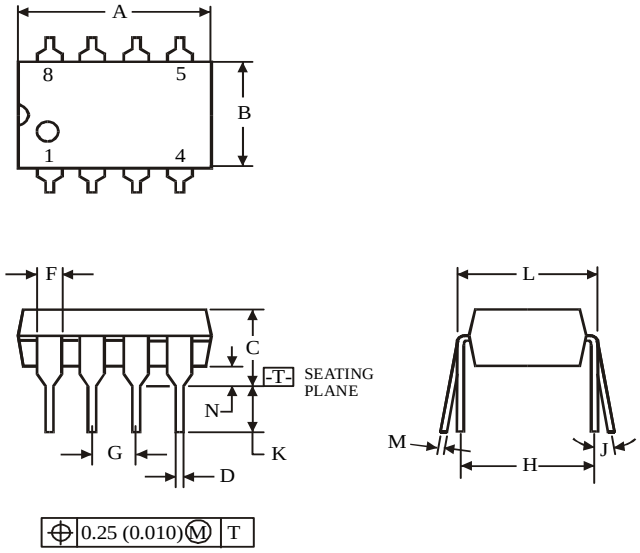
Symbol	Ratings	Unit	Symbol	Ratings	Unit
VR1	1 - 2	MΩ	C1	4.7	µF
VR2	50	kΩ	C2	4.7	µF
R1	100	kΩ	C3	0.1	µF
R2	100	kΩ	-	-	-

MELODY SELECT TABLE

Switch / Melody	SEL1	SEL2
Gong	OFF	OFF
Bong	ON	OFF
Up	OFF	ON
Down	ON	ON

N SUFFIX PLASTIC DIP
(MS – 001BA)



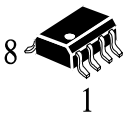


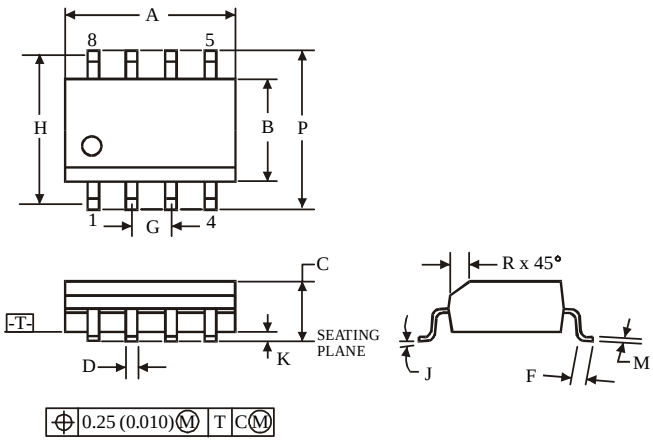
	Dimension, mm	
Symbol	**MIN**	**MAX**
A	8.51	10.16
B	6.1	7.11
C		5.33
D	0.36	0.56
F	1.14	1.78
G	2.54	
H	7.62	
J	0°	10°
K	2.92	3.81
L	7.62	8.26
M	0.2	0.36
N	0.38	

NOTES:

1. Dimensions “A”, “B” do not include mold flash or protrusions.
   Maximum mold flash or protrusions 0.25 mm (0.010) per side.

D SUFFIX SOIC
(MS - 012AA)





	Dimension, mm	
Symbol	**MIN**	**MAX**
A	4.8	5
B	3.8	4
C	1.35	1.75
D	0.33	0.51
F	0.4	1.27
G	1.27	
H	5.72	
J	0°	8°
K	0.1	0.25
M	0.19	0.25
P	5.8	6.2
R	0.25	0.5

NOTES:

1. Dimensions A and B do not include mold flash or protrusion.
2. Maximum mold flash or protrusion 0.15 mm (0.006) per side
   for A; for B – 0.25 mm (0.010) per side.