

KS5311**CMOS DIGITAL INTEGRATED CIRCUIT****SIMPLE MELODY IC**

The KS5311 series is a CMOS LSI chip which electronically plays a prearranged melody.

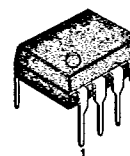
FUNCTIONS

- Tempo: 16 kinds (presto-largo)
- Sound range: 2.5 octave
- High start input
- Melody start input
- Automatic repeat of the melody

FEATURES

- One chip CMOS construction
- Plays a melody consisting of 64 notes
- Starts from the head of melody
- On chip RC oscillator circuit
- Very low stand-by current
- 1.5V operation

8 DIP



6

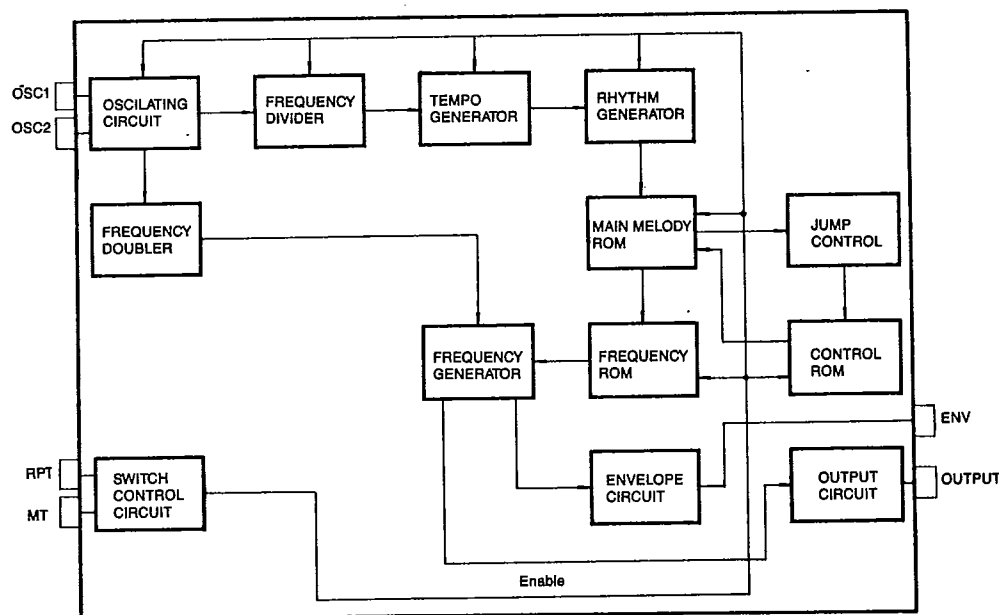
BLOCK DIAGRAM

Fig. 1



SAMSUNG SEMICONDUCTOR

T-77-13

KS5311

CMOS DIGITAL INTEGRATED CIRCUIT

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{SS}	+0.3 ~ -2.0	V
Input Voltage	V_{IN}	$V_{SS} + 0.3 \sim V_{DD} - 0.7$	V
Operating Temperature	T_{opr}	-20 ~ +70	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ +125	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

($T_a = 25^\circ\text{C}$, $V_{SS} = -1.5\text{V}$, $V_{DD} = 0\text{V}$ unless otherwise specified)

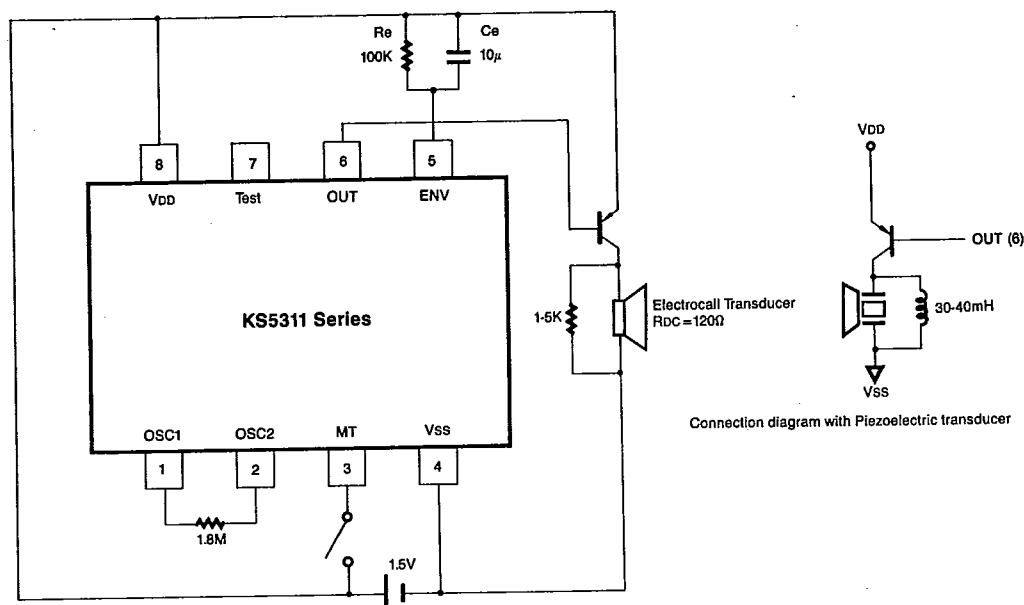
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Voltage	$ V_{SS} $		1.2	1.5	2	V
Stand-by Current	I_{ST}	Without Load		0.1	0.3	μA
Operating Current	I_{OP}	Without Load		20	30	μA
Input Low Voltage	V_{IL}		V_{SS}	V_{SS}	$V_{SS} + 0.1$	V
Input High Voltage	V_{IH}		$V_{DD} - 0.1$	V_{DD}		V
Input Low Current	I_{IL}	$V_{IL} = V_{SS}$			0.05	μA
Input High Current	I_{IH}	$V_{IH} = V_{DD}$	1.5		15	μA
Output High Current (Output Terminal)	I_{OH}	$V_{SS} = -1.2\text{V}$ $V_{OH} = 0.7\text{V}$	30			μA
Output Low Voltage	V_{OL}	Without Load	V_{SS}	V_{SS}	$V_{SS} + 0.1$	V
Output High Voltage	V_{OH}	Without Load	$V_{DD} - 0.1$	V_{DD}	V_{DD}	V
Operating Frequency	F_{req}		31	33	35	KHz



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APPLICATION CIRCUIT



*Capacitor C_e and Resistor R_e is necessary only when employing EN-VELOPE circuit, Otherwise, EN V terminal must be connected to Vss.

*Currently available types:

KS5311A: Cuckoo's Walts.

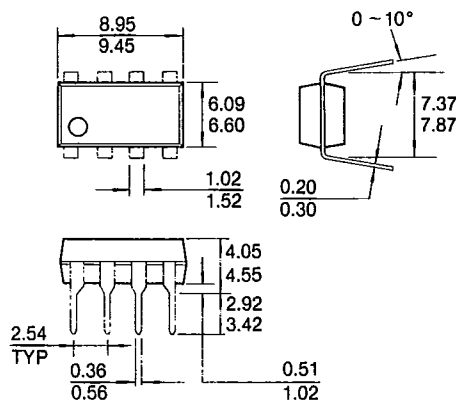


PACKAGE DIMENSIONS

T-90-20

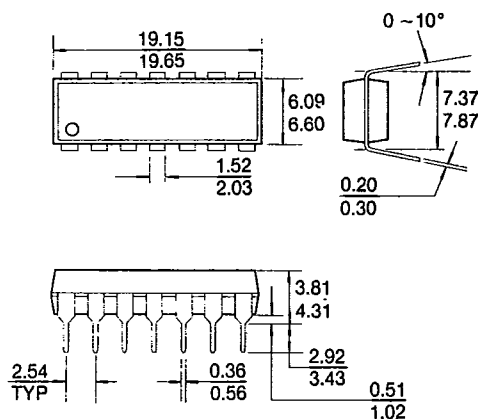
8 DIP

Unit: mm



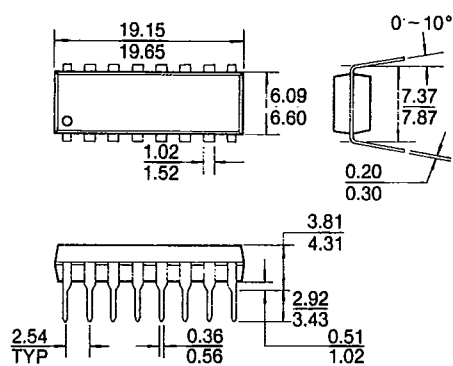
14 DIP

Unit: mm



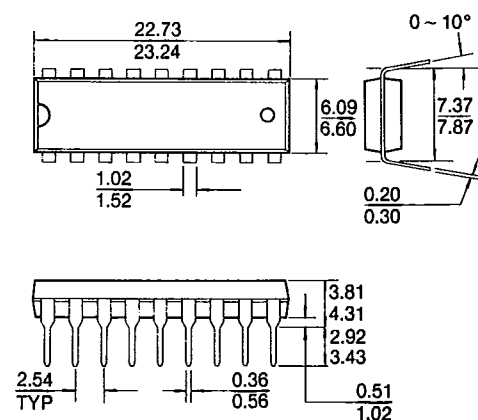
16 DIP

Unit: mm



18 DIP

Unit: mm



7



SAMSUNG SEMICONDUCTOR

0894

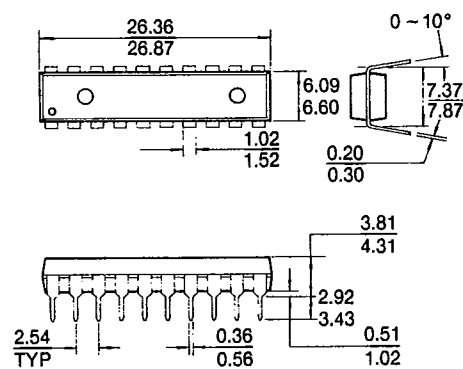
A-07

PACKAGE DIMENSIONS

T-90-20

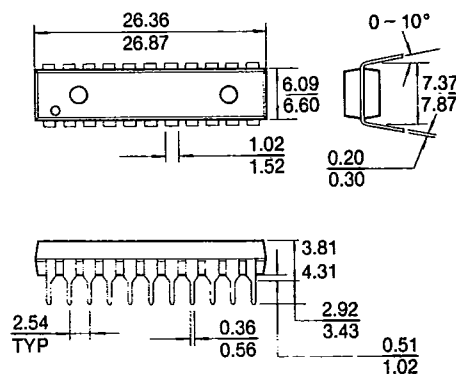
20 DIP

Unit: mm



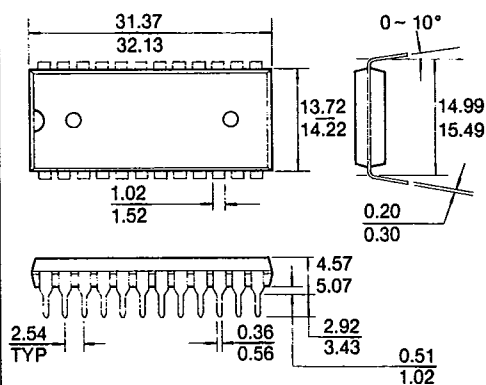
22 DIP

Unit: mm



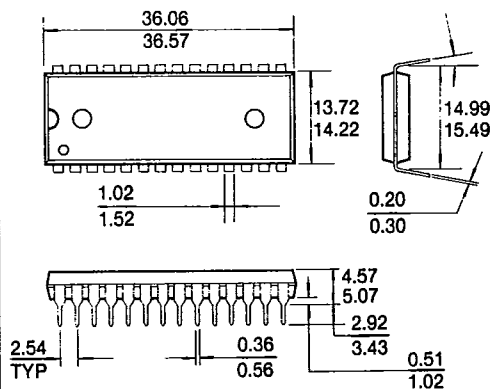
24 DIP

Unit: mm



28 DIP

Unit: mm



SAMSUNG SEMICONDUCTOR

256

0895

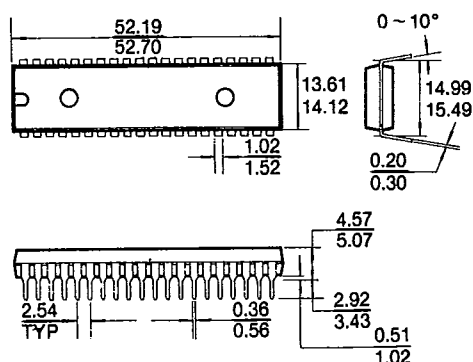
A-08

PACKAGE DIMENSIONS

T-90-20

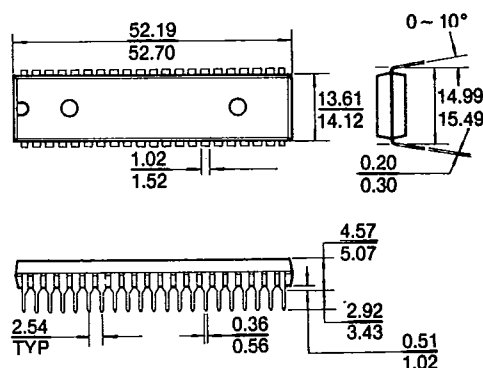
40 DIP

Unit: mm



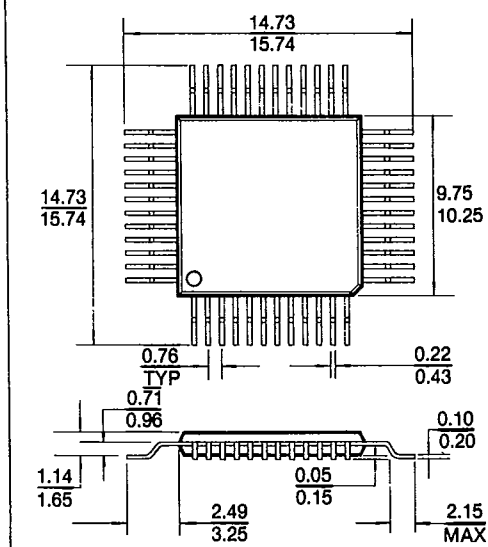
42 DIP

Unit: mm



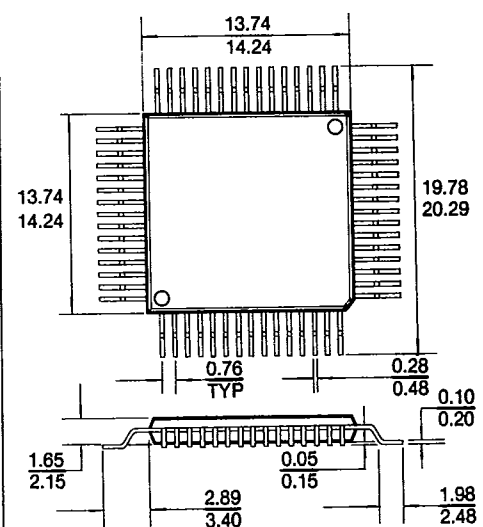
48 FQP

Unit: mm



60 FQP

Unit: mm



SAMSUNG SEMICONDUCTOR

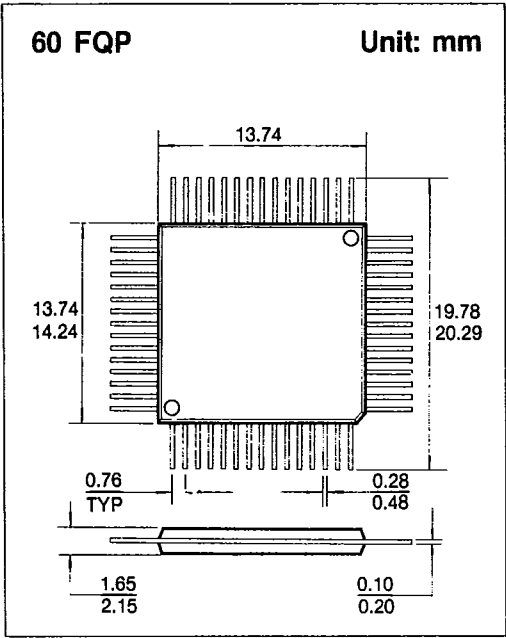
257

0896

A-09

PACKAGE DIMENSIONS

T-90-20



SAMSUNG SEMICONDUCTOR