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## WaveFront™ Sounds (16M Bit CMOS Mask ROM)

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### Description

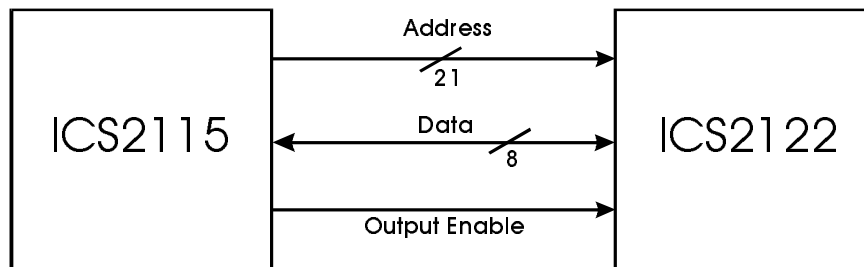
WaveFront Sounds are masked ROMs that serve as the wavetable for the ICS2115 WaveFront Synthesizer. Each sound set, 4 MB, 2 MB and 512 KB, contains the musical data needed to synthesize the instruments from the General MIDI specification. The 4 MB sound set consists of two 2 MB ROMs, the **ICS2124M-001** and **ICS2124M-002**. The 2 MB sound set consists of one 2 MB ROM, the **ICS2122M-001**. The 512 KB sound set consists of one 512 KB ROM, the **ICS2125M-001**.

### Features

- Complete set of General MIDI sounds, which contains 128 instruments and 69 drum sounds.
- Available in three sizes, 4 MB, 2 MB & 512 KB, to provide the optimal balance between price and performance for many applications.
- 16-bit linear wavetable (ICS2124-001/-002), compressed wavetable (ICS2122-001), or full-featured wavetable (ICS2125-001).
- Uses 2M x 8 MROMs in 44-pin SOP packages.

### Block Diagram

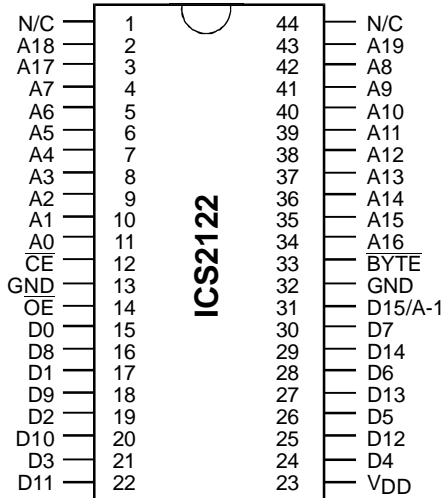
#### 2 MB Patch Set



# ICS2122



## Pin Configuration



**44-Pin SOP**

## Pin Descriptions

| PIN NUMBER   | PIN NAME          | TYPE | DESCRIPTION   |
|--------------|-------------------|------|---|
| 2-11, 34-43  | A0-A19            | I    | Address Inputs.   |
| 15-22, 24-30 | D0-D14            | O    | Data Outputs.   |
| 12           | $\overline{CE}$   | I    | Chip Enable Input.                                      |
| 14           | $\overline{OE}$   | I    | Output Enable Input.                                    |
| 31           | D15/A-1           | I/O  | Data Output/Address Input.                              |
| 33           | $\overline{BYTE}$ | I    | Word, Byte selection Input tied low for byte operation. |
| 23           | VDD               | P    | Power Supply.   |
| 13, 32       | GND               | P    | Ground.   |
| 1, 44        | NC                | -    | No Connection.  |



## Absolute Maximum Ratings

| SYMBOL              | ITEM                         | RATING               | UNIT     |
|---------------------|------------------------------|----------------------|----------|
| V <sub>DD</sub>     | Power Supply Voltage         | -0.5~7.0             | V        |
| V <sub>IN</sub>     | Input Voltage                | -0.5~V <sub>DD</sub> | V        |
| V <sub>OUT</sub>    | Output Voltage               | 0~V <sub>DD</sub>    | V        |
| P <sub>D</sub>      | Power Dissipation            | 1.0/0.6              | W        |
| T <sub>STG</sub>    | Storage Temperature          | -55~150              | °C       |
| T <sub>OPR</sub>    | Operating Temperature        | 0~70                 | °C       |
| T <sub>SOLDER</sub> | Soldering Temperature · Time | 260 · 10             | °C · sec |

## AC Characteristics

T<sub>A</sub> = 0~70°C, V<sub>DD</sub> = 5±10%

| PARAMETER                                | SYMBOL           | MIN | TYP | MAX | UNITS |
|--|------------------|-----|-----|-----|-------|
| Cycle Time                               | t <sub>CYC</sub> | 150 | -   | -   | ns    |
| Address Access Time                      | t <sub>ACC</sub> | -   | -   | 150 | ns    |
| Chip Enable Access Time                  | t <sub>CE</sub>  | -   | -   | 150 | ns    |
| Output Enable Access Time                | t <sub>OE</sub>  | -   | -   | 70  | ns    |
| Output Disable Time from $\overline{CE}$ | t <sub>CED</sub> | -   | -   | 40  | ns    |
| Output Disable Time from $\overline{OE}$ | t <sub>OED</sub> | -   | -   | 40  | ns    |
| Output Hold Time                         | t <sub>OH</sub>  | 5   | -   | -   | ns    |

## AC Test Conditions

Output Load: 100pF + 1TTL

Input Levels: 0.6V, 2.4V

Timing Measurement Reference Levels/Input: 0.8V, 2.2V

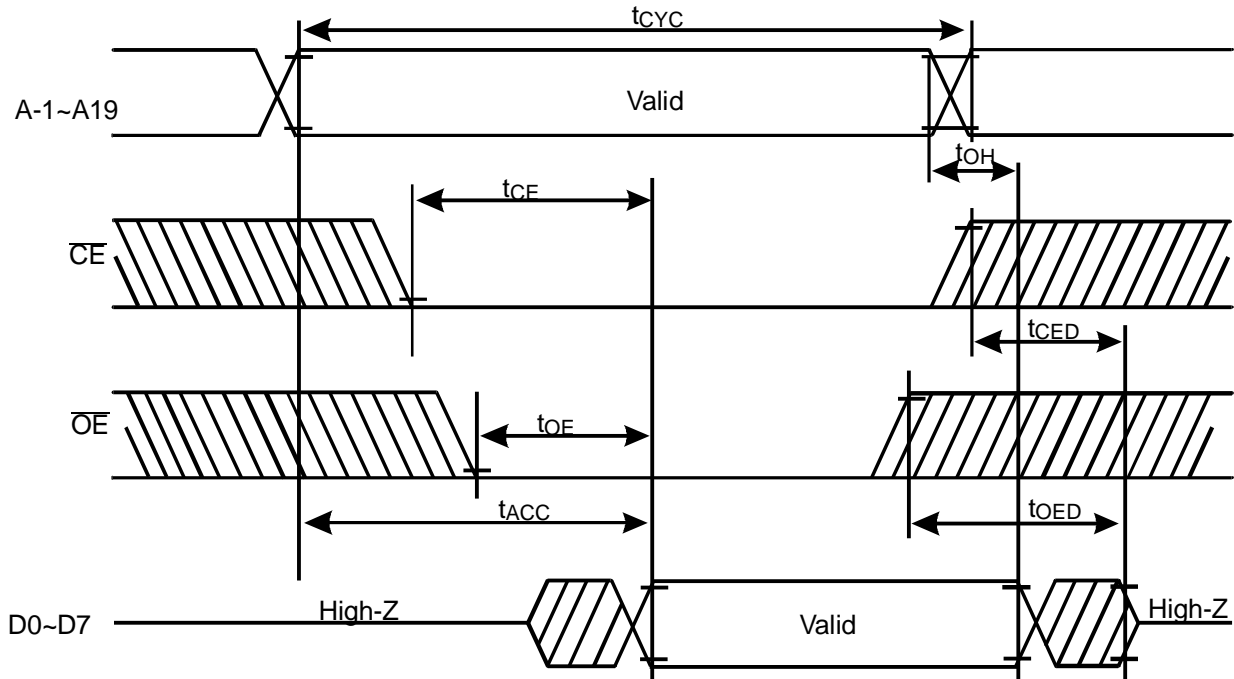
Timing Measurement Reference Levels/Output: 0.8V, 2.0V

Input Rise and Fall Time: 5ns

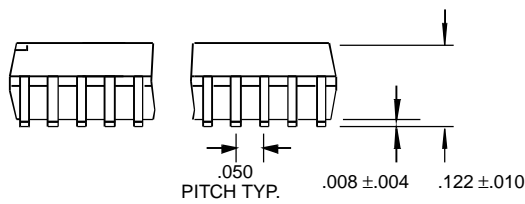
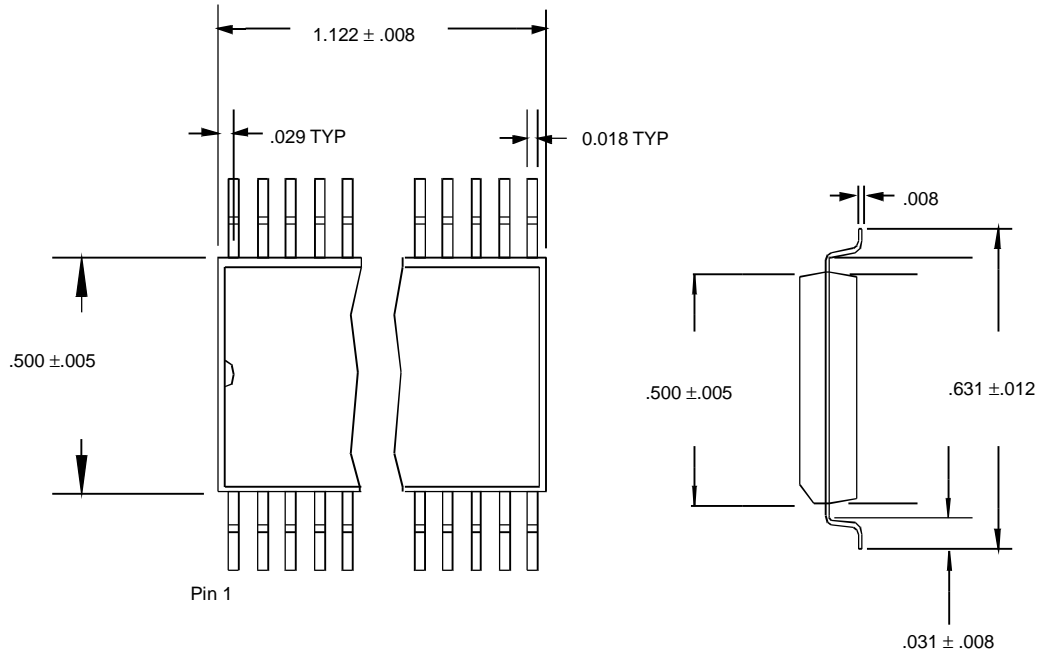


### Timing Waveform

BYTE-WIDE READ MODE



Note: BYTE=V<sub>IL</sub>



### SOP Package

## Ordering Information

ICS2122-001M

Example:

**ICS XXXX-PPP M**

