PRELIMINARY
April, 1987

CMOS 32 BIT HIGH SPEED MICROPROCESSOR
KEY FEATURES

- **Eight CMOS 2901 Type Devices in a Single Package**
- **32 x 32 Dual Port RAM**
- **Low CMOS Power**
  —350 mW

- **High Speed Operation**
  —23 MHz Read-Modify-Write Cycle
- **Fully Firmware Compatible with the 2901**
- **On Board Carry Look-Ahead**

GENERAL DESCRIPTION

The WS59032 is a 32 bit High Speed microprocessor which combines the functions of eight 2901 4 bit slice processors and distributed look-ahead carry generation on a Single High Performance CMOS device. The WS59032 dual port RAM is 32 bits wide and 32 words deep. This architecture provides greater flexibility and eases the task of generating new micro code while maintaining 100% compatible with existing 2901 based micro code.

This microprogrammable circuit has the flexibility to efficiently emulate almost any digital computing machine. It is an ideal candidate for such applications as peripheral controllers, CPU's, programmable microprocessors, and Digital Signal Processors.

The advanced CMOS process with which the WS59032 is manufactured, provides significant performance improvements over an equivalent Bipolar device configuration. While operating faster than a 2901C based system, the WS59032 requires less than 3% of the power consumed by an equivalent Bipolar system.

The WS59032 is also available as an LSI cell in the Wafer Scale MODULAR-CELL™ library. As such it can be combined with other cells to build Application Specific Integrated Circuits.

FUNCTIONAL BLOCK DIAGRAM