AMD Sempron™ Processor Product Data Sheet

- **Compatible with Existing 32-Bit Code Base**
  - Including support for SSE, SSE2, SSE3*, MMX™, 3DNow!™ technology and legacy x86 instructions *SSE3 supported by Rev. E and later processors
  - Runs existing operating systems and drivers
  - Local APIC on-chip
- **AMD64 Technology**
  (Supported by Rev. E3 and later processors)
  - AMD64 technology instruction set extensions
  - 64-bit integer registers, 48-bit virtual addresses, 40-bit physical addresses
  - Eight additional 64-bit integer registers (16 total)
  - Eight additional 128-bit SSE registers (16 total)
- **64-Kbyte 2-Way Associative ECC-Protected L1 Data Cache**
  - Two 64-bit operations per cycle, 3-cycle latency
- **64-Kbyte 2-Way Associative Parity-Protected L1 Instruction Cache**
- **128-Kbyte 16-Way Associative ECC-Protected L2 Cache**
  - Exclusive cache architecture—storage in addition to L1 caches
- **Machine Check Architecture**
  - Includes hardware scrubbing of major ECC-protected arrays
- **Power Management**
  - Multiple low-power states
  - System Management Mode (SMM)
  - ACPI-compliant, including support for processor performance states
- **HyperTransport™ Technology to I/O Devices**
  - One 16-bit link supporting speeds up to 800 MHz (1600 MT/s) or 3.2 Gigabytes/s in each direction

754-Pin Package Specific Features

- **Refer to the *AMD Functional Data Sheet, 754-Pin Package, order# 31410*, for functional, electrical, and mechanical details of 754-pin package processors.**
- **Packaging**
  - 754-pin lidded micro PGA
  - 1.27-mm pin pitch
  - 29x29-row pin array
  - 40mm x 40mm organic substrate
  - Organic C4 die attach
- **Integrated Memory Controller**
  - Low-latency, high-bandwidth
  - 72-bit DDR SDRAM at 100, 133, 166, and 200 MHz
  - Supports up to three unbuffered DIMMs
  - ECC checking with double-bit detect and single-bit correct
- **Electrical Interfaces**
  - HyperTransport™ technology: LVDS-like differential, unidirectional
  - DDR SDRAM: SSTL_2 per JEDEC specification
  - Clock, reset, and test signals also use DDR SDRAM-like electrical specifications