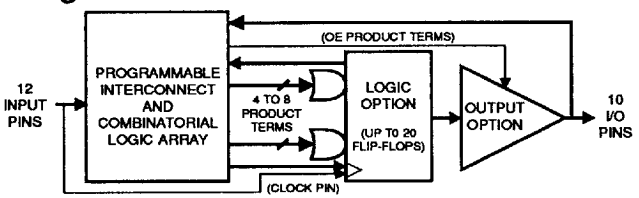
High Speed UV Erasable Programmable Logic Device

Advanced Information

Features

- Quarter Power Equivalent of ATV750B/BL - 90 mA Maximum
- Low Power ATV750BQL - 1.0 mA Standby (Typical)
- Advanced, High Speed Programmable Logic Device
  - 15 ns Maximum Pin-To-Pin Delay
  - Enhanced Logic Flexibility
  - Backward Compatible with ATV750/L Software and Hardware
- New Flip-Flop Features
  - D- or T-Type
  - Product Term or Direct Input Pin Clocking
- Highest Density Programmable Logic Available in a 24-Pin Package
- Increased Logic Flexibility
  - 42 Array Inputs, 20 Sum Terms and 20 Flip-Flops
- Enhanced Output Logic Flexibility
  - All 20 Flip-Flops Feed Back Internally
  - 10 Flip-Flops are Also Available as Outputs
- Reprogrammable - 100% Tested for Programming
- Full Military, Commercial and Industrial Temperature Ranges
- 24-Pin, 0.300" DIP, 24-Lead SOIC, and 28-Lead Surface Mount Packages

Logic Diagram



Description

The ATV750BQs are twice as powerful at lower current requirements than most other 24-pin programmable logic devices. Increased product terms, sum terms, flip-flops and output logic configurations translate into more usable gates. High speed logic and uniform, predictable delays guarantee fast in-system performance.

Each of the ATV750BQ's 22 logic pins can be used as an input. Ten of these can be used as inputs, outputs or bi-directional I/O pins. Each flip-flop is individually configurable as either D- or T-type. Each flip-flop output is fed back into the array independently. This allows burying of all the sum terms and flip-flops.

There are 171 total product terms available. A variable format is used to assign between four to eight product terms per sum term. There are two sum terms per output, providing added

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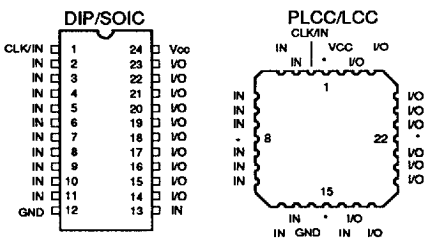
Pin Configurations

Pin Name	Function
CLK	Clock
IN	Logic Inputs
I/O	Bidirectional Buffers
*	No Internal Connection
Vcc	+5 V Supply



Description (Continued)

flexibility. Much more logic can be replaced by this device than by any other 24-pin PLD. With 20 sum terms and flip-flops, complex state machines are easily implemented with logic to spare.

Product terms provide individual clocks and asynchronous resets for each flip-flop. Each flip-flop may also be individually configured to have direct input pin controlled clocking. Each output has its own enable product term. One product term provides a common synchronous preset for all flip-flops. Register preload functions are provided to simplify testing. All registers automatically reset upon power up.

The ATV750BQL is a low power device with speeds as fast as 15 ns. The ATV750BQL provides the optimum low power PLD solution, with full CMOS output levels. Typical standby current is only 1 mA. This device significantly reduces total system power, thereby allowing battery-powered operation.

D.C. and A.C. Operating Conditions

	Commercial -15	Commercial -25	Industrial -25	Military -25
Operating Temperature (Case)	0°C - 70°C	0°C - 70°C	-40°C - 85°C	-55°C - 125°C
V_{CC} Power Supply	5 V ± 5%	5 V ± 10%	5 V ± 10%	5 V ± 10%