

Features

- **Advanced, High Speed Programmable Logic Device**
Improved Performance - 10 ns T_{PD}, 100 MHz operation
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 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
- **Low Power ATV750BL and ATV750BVL - 1.0 mA Standby (Typical)**
- **Reprogrammable - 100% Tested for Programming**
- **24-Pin, 0.300" DIP, 24-Lead SOIC, and 28-Lead Surface Mount Packages**
- **3.3-Volt Operation for ATV750BV and ATV750BVL**

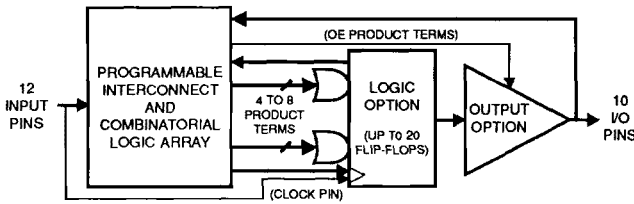
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**High Speed
UV Erasable
Programmable
Logic Device**

Preliminary

Temperature	ATV750BV		ATV750BVL	
	Com.	Ind./Mil.	Com.	Ind./Mil.
I _{CC} (mA) at V _{CC} = 3.6 V	70	80	1	1.5

Logic Diagram



Description

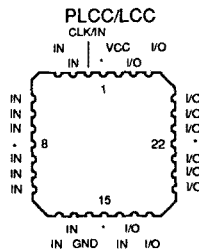
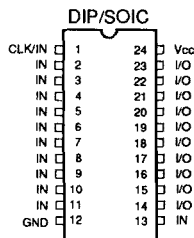
The ATV750Bs are twice as powerful as most other 24-pin programmable logic devices. Increased product terms, sum terms, flip-flops and output logic configurations translate into more usable gates. High speed logic and uniform, predictable delays guarantee fast in-system performance.

Each of the ATV750B'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 *(continued on next page)*

Pin Configurations

Pin Name	Function
IN	Logic Inputs
I/O	Bidirectional Buffers
*	No Internal Connection
V _{CC}	+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 ATV750BV and ATV750BVL are low voltage devices with speeds as fast as 15 ns. Power dissipation is as low as 2.5 mW at 3.6 volts. These devices provide the optimum low power PLD solution, with full CMOS output levels. They significantly reduce total system power, thereby allowing battery-powered operation.

Absolute Maximum Ratings*

Temperature Under Bias.....	-55°C to +125°C
Storage Temperature.....	-65°C to +150°C
Voltage on Any Pin with Respect to Ground.....	-2.0 V to +7.0 V ⁽¹⁾
Voltage on Input Pins with Respect to Ground During Programming.....	-2.0 V to +14.0 V ⁽¹⁾
Programming Voltage with Respect to Ground.....	-2.0 V to +14.0 V ⁽¹⁾
Integrated UV Erase Dose.....	7258 W-sec/cm ²

*NOTICE: Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device.

This is a stress rating only and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this specification is not implied.

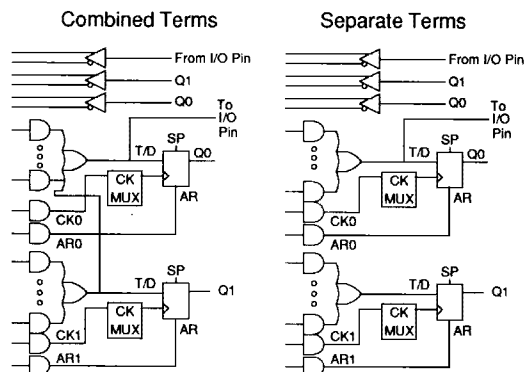
Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Note:

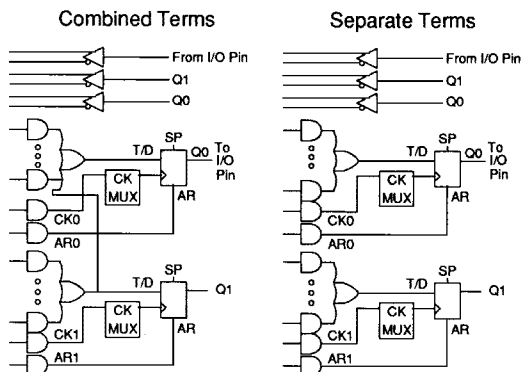
1. Minimum voltage is -0.6 V dc which may undershoot to -2.0 V for pulses of less than 20 ns. Maximum output pin voltage is $V_{CC}+0.75$ V dc which may overshoot to +7.0 V for pulses of less than 20 ns.

Logic Options

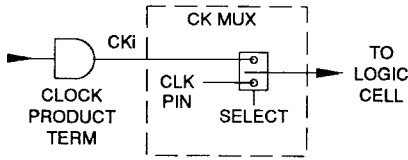
Combinatorial Output



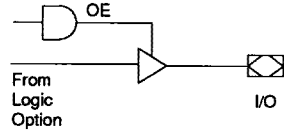
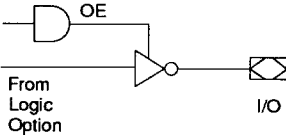
Registered Output



Clock MUX



Output Options



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D.C. and A.C. Operating Conditions

		ATV750B	ATV750BL	ATV750BV	ATV750BVL
Operating Temperature (Case)	Com.	0°C - 70°C	0°C - 70°C	0°C - 70°C	0°C - 70°C
	Ind.	-40°C - 85°C	-40°C - 85°C	-40°C - 85°C	-40°C - 85°C
	Mil.	-55°C - 125°C	-55°C - 125°C	-55°C - 125°C	-55°C - 125°C
Vcc Power Supply		5 V ± 10%	5 V ± 10%	3.0 V to 5.5 V	3.0 V to 5.5 V

Operating Modes

Mode	24-Pin DIP/SOIC	1	5	8	11	13	I/Os	Vcc (24)
	28-Lead SMD	2	6	10	13	16	I/Os	Vcc (28)
"PLD"		X ⁽¹⁾	X	X	X	X	I/O	4.5 - 5.5 V ⁽³⁾
Program		V _{PP}	X/V _H ⁽²⁾	X	X/V _H	V _{PP}	D _{IN}	6 V
PGM Verify		V _{PP}	X/V _H	X	X/V _H	V _{IL}	D _{OUT}	5 V
PGM Inhibit		V _{PP}	X/V _H	X	X/V _H	V _{IH}	High Z	5-6 V
Preload #1		X	X	V _H	X	V _{IL}	D _{IN}	4.5 - 5.5 V ⁽³⁾
Preload #2		X	X	V _H	X	V _{IH}	D _{IN}	4.5 - 5.5 V ⁽³⁾

Notes: 1. X can be V_{IL} or V_{IH}.
 2. V_H = 11.0 V to 14.0 V.

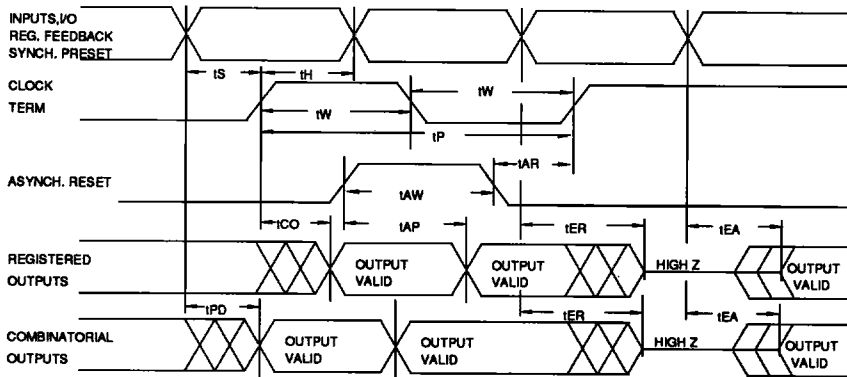
3. For ATV750BV and ATV750BVL, 3.0 V to 5.5 V.

D.C. Characteristics

Symbol	Parameter	Condition	Min	Typ	Max	Units	
I _{LI}	Input Load Current	V _{IN} = -0.1 V to V _{CC} +1 V			10	μA	
I _{LO}	Output Leakage Current	V _{OUT} = -0.1 V to V _{CC} +0.1 V			10	μA	
I _{CC}	Power Supply Current, Standby	V _{CC} = 5.5 V, V _{IN} = GND or V _{CC} f = 0 MHz, Outputs Open	ATV750B, ATV750BV	Com.	120	mA	
				Ind.,Mil.	140	mA	
			ATV750BL, ATV750BVL	Com.	1	2	mA
				Ind.,Mil.	1	3	mA
I _{CC2} ⁽²⁾	Clocked Power Supply Current	V _{CC} = 5.5 V, V _{IN} = GND or V _{CC} , Outputs Open	ATV750BL, ATV750BVL	Com.	5	mA/MHz	
				Ind.,Mil.	7	mA/MHz	
I _{CC3} ⁽²⁾	Power Supply Current, 3-Volt Standby	V _{CC} = 3.6 V, V _{IN} = GND or V _{CC} , f = 0 MHz, Outputs Open	ATV750BV	Com.	35	70	mA
				Ind.,Mil.	40	80	mA
			ATV750BVL	Com.	0.3	0.7	mA
				Ind.,Mil.	0.4	1.0	mA
I _{CC4} ⁽²⁾	Clocked Power Supply Current, 3-Volt	V _{CC} = 3.6 V, V _{IN} = GND or V _{CC} , Outputs Open	ATV750BVL	Com.	3.5	mA/MHz	
				Ind.,Mil.	5	mA/MHz	
I _{OS} ⁽¹⁾	Output Short Circuit Current	V _{OUT} = 0.5 V			-120	mA	
V _{IL1}	Input Low Voltage	4.5 ≤ V _{CC} ≤ 5.5 V	-0.6		0.8	V	
V _{IL2}	Input Low Voltage	3.0 ≤ V _{CC} < 4.5 V	-0.6		0.6	V	
V _{IH}	Input High Voltage		2.0		V _{CC} +0.75	V	
V _{OL1}	Output Low Voltage	V _{IN} = V _{IH} or V _{IL} , V _{CC} = 4.5 V	I _{OL} = 16 mA Com.,Ind.		0.5	V	
			I _{OL} = 12 mA Mil.		0.5	V	
			I _{OL} = 24 mA Com.		0.8	V	
V _{OL2}	Output Low Voltage	V _{CC} = 3.0 V, ATV750BV, ATV750BVL	I _{OL} = 8 mA Com.,Ind.		0.35	V	
			I _{OL} = 6 mA Mil.		0.35	V	
V _{OH1}	Output High Voltage	V _{IN} = V _{IH} or V _{IL} , V _{CC} = 4.5 V	I _{OH} = -100 μA	V _{CC} -0.3		V	
			I _{OH} = -4.0 mA	2.4		V	
V _{OH2}	Output High Voltage	V _{CC} = 3.0 V ATV750BV, ATV750BVL	I _{OH} = -0.4 mA	2.4		V	

Notes: 1. Not more than one output at a time should be shorted. 2. Outputs not loaded.
Duration of short circuit test should not exceed 30 sec.

A.C. Waveforms, Product Term Clock ⁽¹⁾



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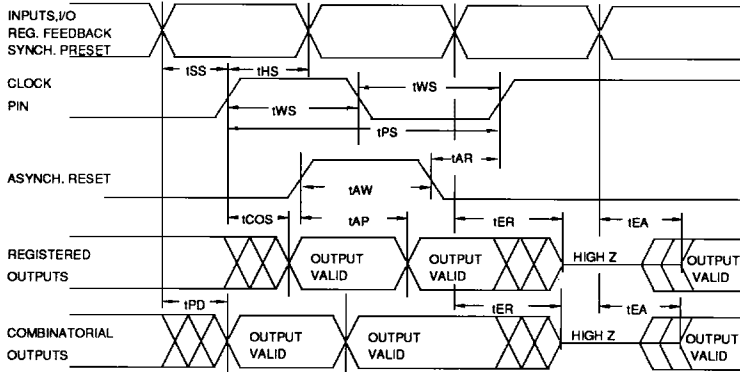
Note: 1. Timing measurement reference is 1.5 V. Input AC driving levels are 0.0 V and 3.0 V, unless otherwise specified.

A.C. Characteristics, Product Term Clock

Symbol	Parameter	ATV750B -10		ATV750B/BL ATV750BV -15		ATV750B/BL ATV750BV/BVL -20		ATV750BL ATV750BV/BVL -25		Units
		Min	Max	Min	Max	Min	Max	Min	Max	
t_{PD}	Input or Feedback to Non-Registered Output		10		15		20		25	ns
t_{EA}	Input to Output Enable		10		15		20		25	ns
t_{ER}	Input to Output Disable		10		15		20		25	ns
t_{CO}	Clock to Output	4	10	5	15	6	20	6	25	ns
t_{CF}	Clock to Feedback	4	7.5	5	9	6	10	6		ns
t_S	Input Setup Time	5		7		9		12		ns
t_{SF}	Feedback Setup Time	5		7		9		10		ns
t_H	Hold Time	4		5		6		7		ns
t_P	Clock Period	12.5		16		20		22		ns
t_W	Clock Width	6		7		8		10		ns
F_{MAX}	Maximum Frequency		80		62.5		50		45	MHz
t_{AW}	Asynchronous Reset Width	10		15		20		25		ns
t_{AR}	Asynchronous Reset Recovery Time	10		15		20		25		ns
t_{AP}	Asynchronous Reset to Registered Output Reset		10		15		20		25	ns
t_{SP}	Setup Time, Synchronous Preset	6		8		10		12		ns



A.C. Waveforms, Input Pin Clock ⁽¹⁾

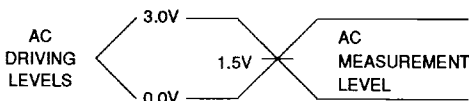


Note: 1. Timing measurement reference is 1.5 V. Input AC driving levels are 0.0 V and 3.0 V, unless otherwise specified.

A.C. Characteristics, Input Pin Clock

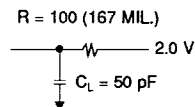
Symbol	Parameter	ATV750B-10		ATV750B/BL ATV750BV -15		ATV750B/BL ATV750BV/BVL -20		ATV750BL ATV750BV/BVL -25		Units
		Min	Max	Min	Max	Min	Max	Min	Max	
t _{PD}	Input or Feedback to Non-Registered Output	10		15		20		25		ns
t _{EA}	Input to Output Enable	10		15		20		25		ns
t _{ER}	Input to Output Disable	10		15		20		25		ns
t _{CO}	Clock to Output	0	7	0	10	0	12	0	15	ns
t _{CF}	Clock to Feedback	0	5	0	5.5	0	7	9		ns
t _{SS}	Input Setup Time	5		7		9		11		ns
t _{SF}	Feedback Setup Time	5		7		9		11		ns
t _{HS}	Hold Time	0		0		0		0		ns
t _{PS}	Clock Period	10		12.5		16		20		ns
t _{WS}	Clock Width	4		5		7		9		ns
f _{MAX}	Maximum Frequency	100		80		62.5		50		MHz
t _{AW}	Asynchronous Reset Width	10		15		20		25		ns
t _{AR}	Asynchronous Reset Recovery Time	10		15		20		25		ns
t _{AP}	Asynchronous Reset to Registered Output Reset	10		15		20		25		ns
t _{SPS}	Setup Time, Synchronous Preset	9		11		13		15		ns

Input Test Waveforms and Measurement Levels



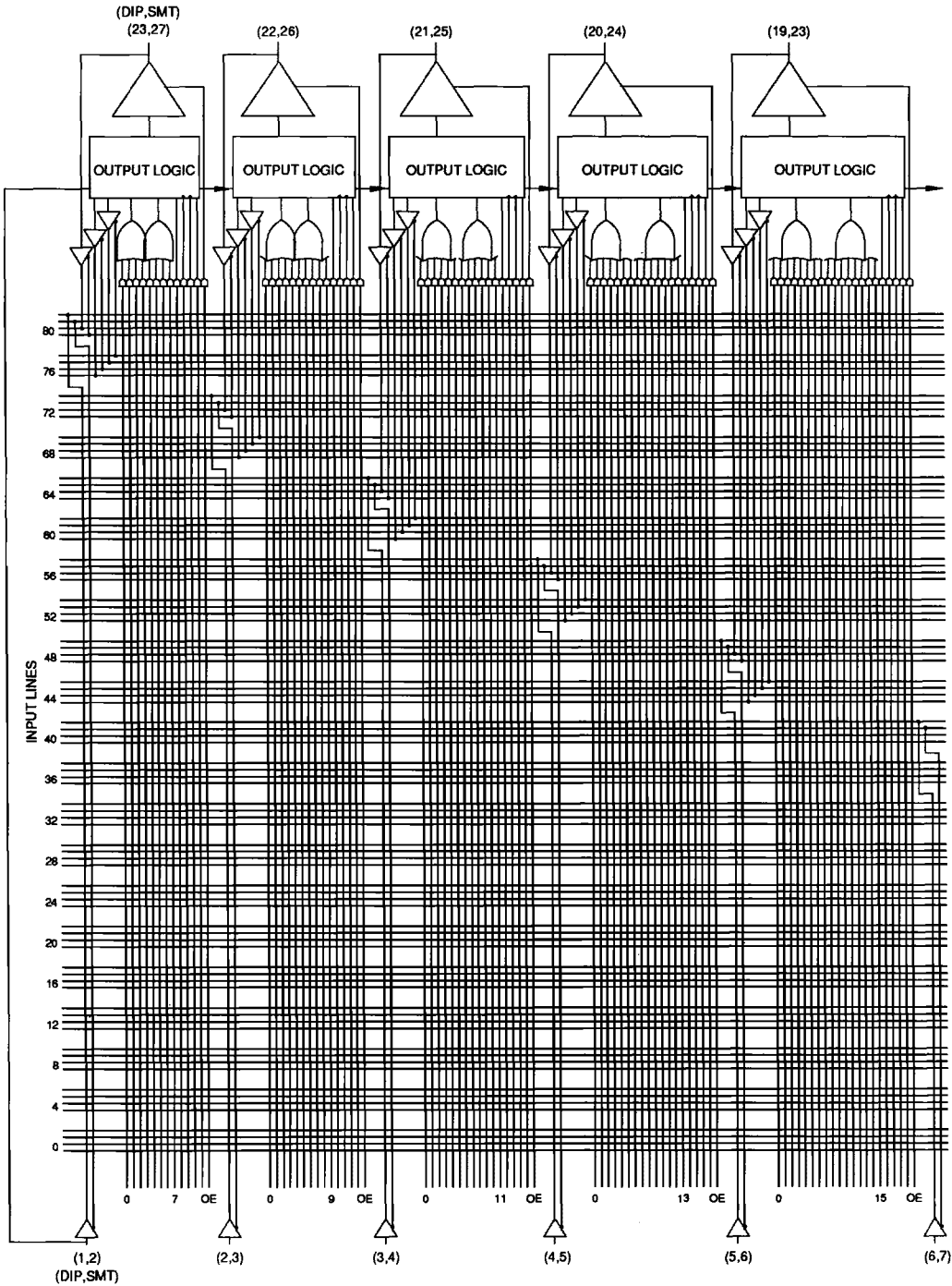
t_R, t_F < 3 ns (10% to 90%)

Output Test Load

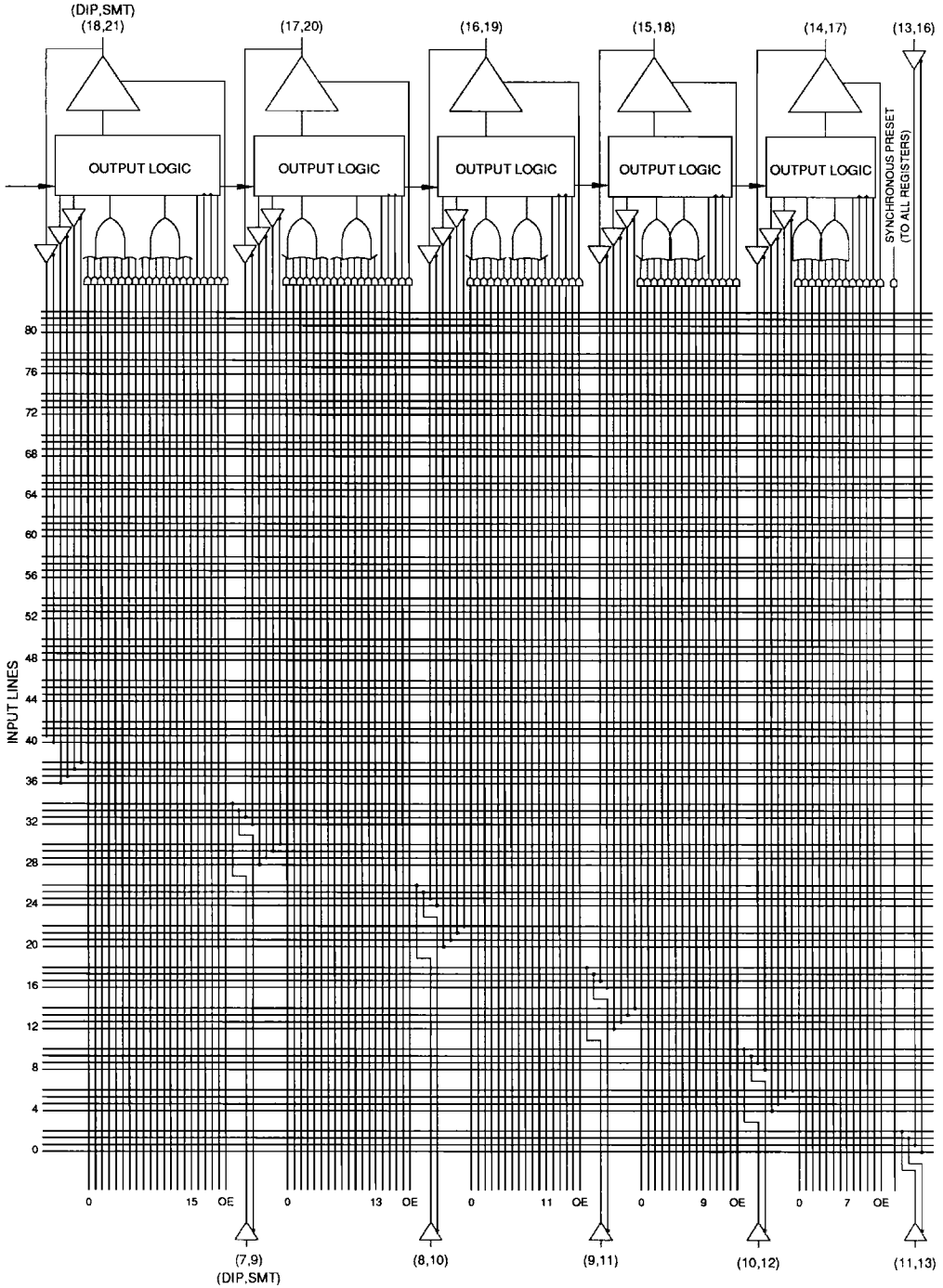


Functional Logic Diagram ATV750B, Upper Half

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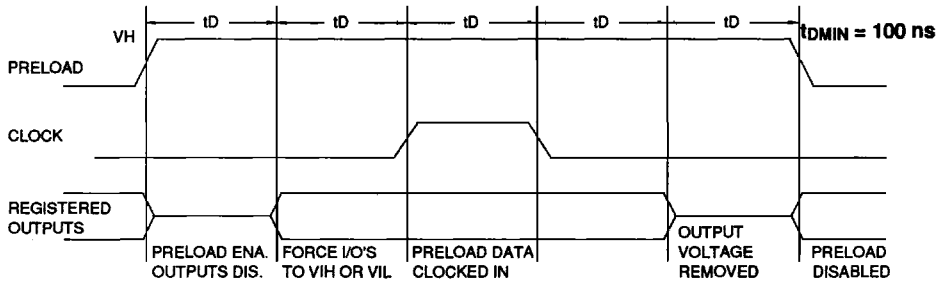
Functional Logic Diagram ATV750B, Lower Half



Preload of Registered Outputs

The ATV750B's registers are provided with circuitry to allow loading of each register asynchronously with either a high or a low. This feature will simplify testing since any state can be forced into the registers to control test sequencing. A V_{IH} level on the I/O pin will force the register high; a V_{IL} will force it low,

independent of the output polarity. The PRELOAD state is entered by placing an 11 V to 14 V signal on pin 8 on DIPs, and lead 10 on SMDs. When the clock term is pulsed high, the data on the I/O pins is placed into the register chosen by the Select Pin.



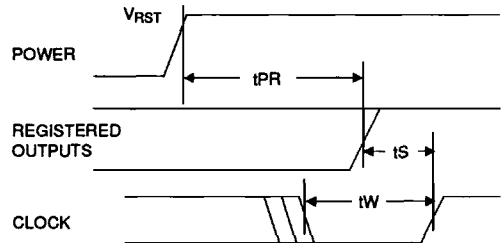
Level forced on registered output pin during PRELOAD cycle	Select Pin State	Register #0 state after cycle	Register #1 State after cycle
V_{IH}	Low	High	X
V_{IL}	Low	Low	X
V_{IH}	High	X	High
V_{IL}	High	X	Low

Power Up Reset

The registers in the ATV750Bs are designed to reset during power up. At a point delayed slightly from V_{CC} crossing V_{RST} , all registers will be reset to the low state. The output state will depend on the polarity of the output buffer.

This feature is critical for state machine initialization. However, due to the asynchronous nature of reset and the uncertainty of how V_{CC} actually rises in the system, the following conditions are required:

- 1) The V_{CC} rise must be monotonic,
- 2) After reset occurs, all input and feedback setup times must be met before driving the clock term high, and
- 3) The signals from which the clock is derived must remain stable during t_{PR} .



Parameter	Description	Typ	Max	Units	
t_{PR}	Power-Up Reset Time	600	1000	ns	
V_{RST}	Power-Up Reset Voltage	ATV750B/BL	3.8	4.5	V
		ATV750BV/BVL	2.5	3.0	V

Pin Capacitance ($f = 1 \text{ MHz}$, $T = 25^\circ\text{C}$) ⁽¹⁾

	Typ	Max	Units	Conditions
C_{IN}	5	8	pF	$V_{IN} = 0 \text{ V}$
C_{OUT}	6	8	pF	$V_{OUT} = 0 \text{ V}$

Note: 1. Typical values for nominal supply voltage. This parameter is only sampled and is not 100% tested.

Using the ATV750B's Many Advanced Features

The ATV750B's advanced flexibility packs more usable gates into 24 pins than any other logic device. The ATV750Bs start with the popular 22V10 architecture, and add several enhanced features:

- **Selectable D- and T-Type Registers** - Each ATV750B flip-flop can be individually configured as either D- or T-type. Using the T-type configuration, JK and SR flip-flops are also easily created. These options allow more efficient product term usage.
- **Selectable Asynchronous Clocks** - Each of the ATV750B's flip-flops may be clocked by its own clock product term or directly from Pin 1 (SMD Lead 2). This removes the constraint that all registers must use the same clock. Buried state machines, counters and registers can all coexist in one device while running on separate clocks. Individual flip-flop clock source selection further allows mixing higher performance pin clocking and flexible product term clocking within one design.
- **A Full Bank of Ten More Registers** - The ATV750B provides two flip-flops per output logic cell for a total of 20. Each register has its own sum term, its own reset term and its own clock term.
- **Independent I/O Pin and Feedback Paths** - Each I/O pin on the ATV750B has a dedicated input path. Each of the 20 registers has its own feedback terms into the array as well. This feature, combined with individual product terms for each I/O's output enable, facilitates true bi-directional I/O design.

Programming Software Support

As with all other Atmel PLDs, several third party development software products will support the ATV750Bs. Atmel-Abel, Abel™ and Cupl™ software are scheduled to fully support all the ATV750B features. Also, any software which supports the ATV750/L will automatically support the same features on the ATV750B. This includes Atmel-Abel-4, Abel™ 2.1, Abel™ 3.0 and above, as well as Cupl™ 2.15B and above. Several third party programmers will support the ATV750B as well. Additionally, the ATV750B may be programmed to perform the ATV750/L's functional subset (no T-type flip-flops or pin clocking) using ATV750/L algorithms. In this case, the ATV750B becomes a direct replacement or speed upgrade for the ATV750/L.

Synchronous Preset and Asynchronous Reset

One synchronous preset line is provided for all 20 registers in the ATV750B. The appropriate input signals to cause the internal clocks to go to a high state must be received during a synchronous preset. Appropriate setup and hold times must be met, as shown in the switching waveform diagram.

An individual asynchronous reset line is provided for each of the 20 flip-flops. Both master and slave halves of the flip-flops are reset when the input signals received force the internal resets high.

Security Fuse Usage

A single fuse is provided to prevent unauthorized copying of the ATV750B fuse patterns. Once programmed, the output buffers will remain in a high impedance state during verify.

The security fuse should be programmed last, as its effect is immediate.

Erasure Characteristics

The entire memory array of an ATV750B is erased after exposure to ultraviolet light at a wavelength of 2537 Å. Complete erasure is assured after a minimum of 20 minutes exposure using 12,000 $\mu\text{W}/\text{cm}^2$ intensity lamps spaced one inch away from the chip. Minimum erase time for lamps at other intensity ratings can be calculated from the minimum integrated erasure dose of 15 W-sec/cm². To prevent unintentional erasure, an opaque label is recommended to cover the clear window on any UV erasable PLD which will be subjected to continuous fluorescent indoor lighting or sunlight.

Atmel CMOS PLDs

The ATV750B utilizes an advanced 0.8-micron CMOS EPROM technology. This technology's state of the art features are the optimum combination for PLDs:

- CMOS technology provides high speed, low power, and high noise immunity.
- EPROM technology is the most cost effective method for producing PLDs - surpassing bipolar fusible link technology in low cost, while providing the necessary reprogrammability.
- EPROM reprogrammability, which is 100% tested before shipment, provides inherently better programmability and reliability than one-time fusible PLDs.

Ordering Information

tpD (ns)	tcOS (ns)	fMAXS (MHz)	Ordering Code	Package	Operation Range
10	7	100	ATV750B-10DC ATV750B-10GC ATV750B-10JC ATV750B-10KC ATV750B-10LC ATV750B-10NC ATV750B-10PC ATV750B-10SC	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Commercial (0°C to 70°C)
			ATV750B-10DI ATV750B-10GI ATV750B-10JI ATV750B-10KI ATV750B-10LI ATV750B-10NI ATV750B-10PI ATV750B-10SI	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Industrial (-40°C to 85°C)
			ATV750B-10DM ATV750B-10GM ATV750B-10KM ATV750B-10LM ATV750B-10NM	24DW3 24D3 28KW 28LW 28L	Military (-55°C to 125°C)
			ATV750B-10DM/883 ATV750B-10GM/883 ATV750B-10KM/883 ATV750B-10LM/883 ATV750B-10NM/883	24DW3 24D3 28KW 28LW 28L	Military/883C (-55°C to 125°C) Class B, Fully Compliant
			ATV750B-15DC ATV750B-15GC ATV750B-15JC ATV750B-15KC ATV750B-15LC ATV750B-15NC ATV750B-15PC ATV750B-15SC	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Commercial (0°C to 70°C)
			ATV750B-15DI ATV750B-15GI ATV750B-15JI ATV750B-15KI ATV750B-15LI ATV750B-15NI ATV750B-15PI ATV750B-15SI	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Industrial (-40°C to 85°C)
			ATV750B-15DM ATV750B-15GM ATV750B-15KM ATV750B-15LM ATV750B-15NM	24DW3 24D3 28KW 28LW 28L	Military (-55°C to 125°C)

Ordering Information

t _{PD} (ns)	t _{cos} (ns)	f _{MAXS} (MHz)	Ordering Code	Package	Operation Range
15	10	80	ATV750B-15DM/883 ATV750B-15GM/883 ATV750B-15KM/883 ATV750B-15LM/883 ATV750B-15NM/883	24DW3 24D3 28KW 28LW 28L	Military/883C (-55°C to 125°C) Class B, Fully Compliant
20	12	62.5	ATV750B-20DC ATV750B-20GC ATV750B-20JC ATV750B-20KC ATV750B-20LC ATV750B-20NC ATV750B-20PC ATV750B-20SC	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Commercial (0°C to 70°C)
			ATV750B-20DI ATV750B-20GI ATV750B-20JI ATV750B-20KI ATV750B-20LI ATV750B-20NI ATV750B-20PI ATV750B-20SI	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Industrial (-40°C to 85°C)
			ATV750B-20DM ATV750B-20GM ATV750B-20KM ATV750B-20LM ATV750B-20NM	24DW3 24D3 28KW 28LW 28L	Military (-55°C to 125°C)
			ATV750B-20DM/883 ATV750B-20GM/883 ATV750B-20KM/883 ATV750B-20LM/883 ATV750B-20NM/883	24DW3 24D3 28KW 28LW 28L	Military/883C (-55°C to 125°C) Class B, Fully Compliant

Ordering Information

tpd (ns)	tcOS (ns)	fMAXS (MHz)	Ordering Code	Package	Operation Range
15	10	80	ATV750BL-15DC	24DW3	Commercial (0°C to 70°C)
			ATV750BL-15GC	24D3	
			ATV750BL-15JC	28J	
			ATV750BL-15KC	28KW	
			ATV750BL-15LC	28LW	
			ATV750BL-15NC	28L	
			ATV750BL-15PC	24P3	
			ATV750BL-15SC	24S	
			ATV750BL-15DI	24DW3	Industrial (-40°C to 85°C)
			ATV750BL-15GI	24D3	
			ATV750BL-15JI	28J	
			ATV750BL-15KI	28KW	
			ATV750BL-15LI	28LW	
			ATV750BL-15NI	28L	
			ATV750BL-15PI	24P3	
			ATV750BL-15SI	24S	
ATV750BL-15DM	24DW3	Military (-55°C to 125°C)			
ATV750BL-15GM	24D3				
ATV750BL-15KM	28KW				
ATV750BL-15LM	28LW				
ATV750BL-15NM	28L				
ATV750BL-15DM/883	24DW3	Military/883C (-55°C to 125°C) Class B, Fully Compliant			
ATV750BL-15GM/883	24D3				
ATV750BL-15KM/883	28KW				
ATV750BL-15LM/883	28LW				
ATV750BL-15NM/883	28L				
20	12	62.5	ATV750BL-20DC	24DW3	Commercial (0°C to 70°C)
			ATV750BL-20GC	24D3	
			ATV750BL-20JC	28J	
			ATV750BL-20KC	28KW	
			ATV750BL-20LC	28LW	
			ATV750BL-20NC	28L	
			ATV750BL-20PC	24P3	
			ATV750BL-20SC	24S	
			ATV750BL-20DI	24DW3	Industrial (-40°C to 85°C)
			ATV750BL-20GI	24D3	
			ATV750BL-20JI	28J	
			ATV750BL-20KI	28KW	
ATV750BL-20LI	28LW				
ATV750BL-20NI	28L				
ATV750BL-20PI	24P3				
ATV750BL-20SI	24S				
ATV750BL-20DM	24DW3	Military (-55°C to 125°C)			
ATV750BL-20GM	24D3				
ATV750BL-20KM	28KW				
ATV750BL-20LM	28LW				
ATV750BL-20NM	28L				

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Ordering Information

t _{PD} (ns)	t _{CO5} (ns)	f _{MAXS} (MHz)	Ordering Code	Package	Operation Range
20	12	62.5	ATV750BL-20DM/883 ATV750BL-20GM/883 ATV750BL-20KM/883 ATV750BL-20LM/883 ATV750BL-20NM/883	24DW3 24D3 28KW 28LW 28L	Military/883C (-55°C to 125°C) Class B, Fully Compliant
25	15	50	ATV750BL-25DC ATV750BL-25GC ATV750BL-25JC ATV750BL-25KC ATV750BL-25LC ATV750BL-25NC ATV750BL-25PC ATV750BL-25SC	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Commercial (0°C to 70°C)
			ATV750BL-25DI ATV750BL-25GI ATV750BL-25JI ATV750BL-25KI ATV750BL-25LI ATV750BL-25NI ATV750BL-25PI ATV750BL-25SI	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Industrial (-40°C to 85°C)
			ATV750BL-25DM ATV750BL-25GM ATV750BL-25KM ATV750BL-25LM ATV750BL-25NM	24DW3 24D3 28KW 28LW 28L	Military (-55°C to 125°C)
			ATV750BL-25DM/883 ATV750BL-25GM/883 ATV750BL-25KM/883 ATV750BL-25LM/883 ATV750BL-25NM/883	24DW3 24D3 28KW 28LW 28L	Military/883C (-55°C to 125°C) Class B, Fully Compliant

Ordering Information

t _{PD} (ns)	t _{COS} (ns)	f _{MAXS} (MHz)	Ordering Code	Package	Operation Range
15	10	80	ATV750BV-15DC ATV750BV-15GC ATV750BV-15JC ATV750BV-15KC ATV750BV-15LC ATV750BV-15NC ATV750BV-15PC ATV750BV-15SC	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Commercial (0°C to 70°C)
			ATV750BV-15DI ATV750BV-15GI ATV750BV-15JI ATV750BV-15KI ATV750BV-15LI ATV750BV-15NI ATV750BV-15PI ATV750BV-15SI	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Industrial (-40°C to 85°C)
			ATV750BV-15DM ATV750BV-15GM ATV750BV-15KM ATV750BV-15LM ATV750BV-15NM	24DW3 24D3 28KW 28LW 28L	Military (-55°C to 125°C)
			ATV750BV-15DM/883 ATV750BV-15GM/883 ATV750BV-15KM/883 ATV750BV-15LM/883 ATV750BV-15NM/883	24DW3 24D3 28KW 28LW 28L	Military/883C (-55°C to 125°C) Class B, Fully Compliant
20	12	62.5	ATV750BV-20DC ATV750BV-20GC ATV750BV-20JC ATV750BV-20KC ATV750BV-20LC ATV750BV-20NC ATV750BV-20PC ATV750BV-20SC	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Commercial (0°C to 70°C)
			ATV750BV-20DI ATV750BV-20GI ATV750BV-20JI ATV750BV-20KI ATV750BV-20LI ATV750BV-20NI ATV750BV-20PI ATV750BV-20SI	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Industrial (-40°C to 85°C)
			ATV750BV-20DM ATV750BV-20GM ATV750BV-20KM ATV750BV-20LM ATV750BV-20NM	24DW3 24D3 28KW 28LW 28L	Military (-55°C to 125°C)



Ordering Information

tpd (ns)	tcos (ns)	fMAXS (MHz)	Ordering Code	Package	Operation Range
20	12	62.5	ATV750BV-20DM/883 ATV750BV-20GM/883 ATV750BV-20KM/883 ATV750BV-20LM/883 ATV750BV-20NM/883	24DW3 24D3 28KW 28LW 28L	Military/883C (-55°C to 125°C) Class B, Fully Compliant
25	15	50	ATV750BV-25DC ATV750BV-25GC ATV750BV-25JC ATV750BV-25KC ATV750BV-25LC ATV750BV-25NC ATV750BV-25PC ATV750BV-25SC	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Commercial (0°C to 70°C)
			ATV750BV-25DI ATV750BV-25GI ATV750BV-25JI ATV750BV-25KI ATV750BV-25LI ATV750BV-25NI ATV750BV-25PI ATV750BV-25SI	24DW3 24D3 28J 28KW 28LW 28L 24P3 24S	Industrial (-40°C to 85°C)
			ATV750BV-25DM ATV750BV-25GM ATV750BV-25KM ATV750BV-25LM ATV750BV-25NM	24DW3 24D3 28KW 28LW 28L	Military (-55°C to 125°C)
			ATV750BV-25DM/883 ATV750BV-25GM/883 ATV750BV-25KM/883 ATV750BV-25LM/883 ATV750BV-25NM/883	24DW3 24D3 28KW 28LW 28L	Military/883C (-55°C to 125°C) Class B, Fully Compliant

Ordering Information

tpd (ns)	tcos (ns)	fMAXS (MHz)	Ordering Code	Package	Operation Range	
20	12	62.5	ATV750BVL-20DC	24DW3	Commercial (0°C to 70°C)	
			ATV750BVL-20GC	24D3		
			ATV750BVL-20JC	28J		
			ATV750BVL-20KC	28KW		
			ATV750BVL-20LC	28LW		
			ATV750BVL-20NC	28L		
			ATV750BVL-20PC	24P3		
			ATV750BVL-20SC	24S		
			ATV750BVL-20DI	24DW3		Industrial (-40°C to 85°C)
			ATV750BVL-20GI	24D3		
			ATV750BVL-20JI	28J		
			ATV750BVL-20KI	28KW		
ATV750BVL-20LI	28LW					
ATV750BVL-20NI	28L					
ATV750BVL-20PI	24P3					
ATV750BVL-20SI	24S					
ATV750BVL-20DM	24DW3	Military (-55°C to 125°C)				
ATV750BVL-20GM	24D3					
ATV750BVL-20KM	28KW					
ATV750BVL-20LM	28LW					
ATV750BVL-20NM	28L					
ATV750BVL-20DM/883	24DW3	Military/883C (-55°C to 125°C) Class B, Fully Compliant				
ATV750BVL-20GM/883	24D3					
ATV750BVL-20KM/883	28KW					
ATV750BVL-20LM/883	28LW					
ATV750BVL-20NM/883	28L					
25	15	50	ATV750BVL-25DC	24DW3	Commercial (0°C to 70°C)	
			ATV750BVL-25GC	24D3		
			ATV750BVL-25JC	28J		
			ATV750BVL-25KC	28KW		
			ATV750BVL-25LC	28LW		
			ATV750BVL-25NC	28L		
			ATV750BVL-25PC	24P3		
			ATV750BVL-25SC	24S		
			ATV750BVL-25DI	24DW3		Industrial (-40°C to 85°C)
			ATV750BVL-25GI	24D3		
			ATV750BVL-25JI	28J		
			ATV750BVL-25KI	28KW		
ATV750BVL-25LI	28LW					
ATV750BVL-25NI	28L					
ATV750BVL-25PI	24P3					
ATV750BVL-25SI	24S					
ATV750BVL-25DM	24DW3	Military (-55°C to 125°C)				
ATV750BVL-25GM	24D3					
ATV750BVL-25KM	28KW					
ATV750BVL-25LM	28LW					
ATV750BVL-25NM	28L					

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Ordering Information

tpD (ns)	tcOS (ns)	fMAXS (MHz)	Ordering Code	Package	Operation Range
25	15	50	ATV750BVL-25DM/883 ATV750BVL-25GM/883 ATV750BVL-25KM/883 ATV750BVL-25LM/883 ATV750BVL-25NM/883	24DW3 24D3 28KW 28LW 28L	Military/883C (-55°C to 125°C) Class B, Fully Compliant

Package Type	
24DW3	24 Lead, 0.300" Wide, Windowed, Ceramic Dual Inline Package (Cerdip)
24D3	24 Lead, 0.300" Wide, Non-Windowed (OTP) Ceramic Dual Inline Package (Cerdip)
28J	28 Lead, Plastic J-Leaded Chip Carrier OTP (PLCC)
28KW	28 Lead, Windowed, Ceramic J-Leaded Chip Carrier (JLCC)
28LW	28 Pad, Windowed, Ceramic Leadless Chip Carrier (LCC)
28L	28 Pad, Non-Windowed, Ceramic Leadless Chip Carrier OTP (LCC)
24P3	24 Lead, 0.300" Wide, Plastic Dual Inline Package OTP (PDIP)
24S	24 Lead, 0.300" Wide, Plastic Gull Wing Small Outline OTP (SOIC)