

Function Selection Guide

GATES

	FUNCTION	DEVICE NUMBER
Inverters	Hex Inverter	74F04
	Hex Inverter, Schmitt Trigger	74F14
NAND	Quad 2-Input	74F00
	Triple 3-Input	74F10
	Dual 4-Input	74F20
	8-Input	74F30
	Quad 2-Input, Schmitt Trigger	74F132
	13-Input	74F133
AND	Quad 2-Input	74F08
	Triple 3-Input	74F11
NOR	Quad 2-Input	74F02
	Triple 3-Input	74F27
	Dual 5-Input	74F260
OR	Quad 2-Input	74F32
Exclusive-OR	Quad 2-Input	74F86
Combination Gates	Dual 2-Wide 2-Input, 2-Wide 3-Input AND-OR-Invert	74F51
	4-2-3-2 Input AND-OR	74F64

GATES

FUNCTION	DEVICE NUMBER	CLOCK EDGE	SET	RESET	METASTABLE IMMUNITY
Dual D	74F74	↑	Low	Low	
Dual D	74F5074	↑	Low	Low	Yes
Dual D	74F50728	↑	Low	Low	Yes
Dual D	74F50729	↑	High	High	Yes
Dual JK	74F109	↑	Low	Low	
Dual JK	74F50109	↑	Low	Low	Yes
Dual JK	74F112/174F112	↓	Low	Low	
Dual JK	74F113	↓	Low	Low	
Dual JK	74F114	↓	Low	Low	

MULTIPLE FLIP-FLOPS

FUNCTION	DEVICE NUMBER	CLOCK EDGE	RESET	OUTPUT
Quad D	74F173	↑	High	NINV
Quad D with Master Reset	74F175/174F175	↑	Low	NINV INV
Quad D with Enable	74F379	↑		NINV INV
Hex D with Master Reset	74F174	↑	Low	NINV
Hex D with Enable	74F378	↑		NINV
Octal D	74F273	↑	Low	NINV
Octal D, 3-State	74F374	↑		NINV
Octal D, 3-State	74F534	↑		INV
Octal D with Enable	74F377	↑		NINV
Octal D, 3-State	74F564	↑		INV
Octal D, 3-State	74F574	↑		NINV

Function Selection Guide

OTHER REGISTERS, REGISTER FILES

FUNCTION	DEVICE NUMBER	CLOCK EDGE	PARALLEL ENTRY	BITS
Quad 2 Port, NINV, INV	74F398	↑	2D (Mux)	4 × 2
Quad 2 Port, NINV	74F399	↑	2D (Mux)	4 × 2
Dual Octal, 3-State	74F604	↑	8D	8
Register File	74F670	↑	2D	4 × 4
10-Bit, NINV, 3-State	74F821	↑	2D	10
10-Bit, INV, 3-State	74F822	↑	2D	10
9-Bit, NINV, 3-State	74F823	↑	2D	9
9-Bit, INV, 3-State	74F824	↑	2D	9
8-Bit, NINV, 3-State	74F825	↑	2D	8
8-Bit, INV, 3-State	74F826	↑	2D	8

LATCHES

FUNCTION	DEVICE NUMBER	ENABLE LEVEL	RESET LEVEL	OUTPUT
Dual Addressable	74F256	1 (Low)	Low	NINV
Dual Octal Latch	74F1604	1 (Low)		NINV
Octal Transparent, 3-State	74F373	1 (High)		INV
Octal Transparent, 3-State (Broadside version of 74F373)	74F533	1 (High)		INV
Octal Transparent, 3-State (Broadside version of 74F373)	74F573	1 (High)		NINV
8-Bit Addressable	74F259	1 (High)	Low	NINV
8-Bit Interface, 3-State	74F845	1 (High)	Low	NINV
8-Bit Interface, 3-State	74F846	1 (High)	Low	INV
9-Bit Interface, 3-State	74F843	1 (High)	Low	NINV
9-Bit Interface, 3-State	74F844	1 (High)	Low	INV
10-Bit Interface, 3-State	74F841	1 (High)		NINV
10-Bit Interface, 3-State	74F842	1 (High)		INV

MULTIPLEXERS

FUNCTION	DEVICE NUMBER	ENABLE LEVEL	SELECT INPUTS	OUTPUT
Dual 4-Input	74F153	2 (Low)	2 (High)	NINV
Dual 4-Input, 3-State	74F253		2 (High)	NINV
Dual 4-Input, 3-State	74F353		2 (High)	INV
Quad 2-Input	74F157/157A	1 (Low)	1 (High)	NINV
Quad 2-Input	74F158/158A	1 (Low)	1 (High)	INV
Quad 2-Input, 3-State	74F257A		1 (High)	NINV
Quad 2-Input, 3-State	74F258A		1 (High)	INV
Quad 2-Input	74F298		1 (High)	INV
Quad 3-Input	74F712A/712-1		2 (High)	NINV
Quad 3-Input	74F723A/723-1	1 (High)	2 (High)	NINV
Quad 4-Input	74F725A/725-1		2 (High)	NINV
Quint 2-Input	74F711A/711-1		1 (High)	NINV
8-Input	74F151A	1 (Low)	3 (High)	NINV, INV
8-Input, 3-State	74F251A		3 (High)	NINV, INV

Function Selection Guide

SECTION 1
INDICES

DECODER/MULTIPLEXERS

FUNCTION	DEVICE NUMBER	ADDRESS INPUTS	ENABLE LEVEL	OUTPUT
Dual 1-of-4	74F139	2 + 2	1 (Low) + 1 (Low)	4 (Low) + 4 (Low)
Dual 1-of-4	74F539	2 + 2	1 (Low) + 1 (Low)	4 (High) + 4 (High)
1-of-8	74F138	3	2 (Low), 1 (High)	8 (Low)
1-of-8	74F538	3	2 (Low), 1 (High)	8 (High)
1-of-10	74F537	4	1 (Low), 1 (High)	10 (High)
1-of-16	74F154	4	2 (Low)	16 (Low)

BUFFERS, DRIVERS AND TRANSCEIVERS

FUNCTION	DEVICE NUMBER	OUTPUT
Dual 4-Input NAND Transmission Line Driver	74F3040	INV
Dual 4-Input NAND Buffer	74F40	INV
Quad 2-Input NAND Buffer	74F37	INV
Quad 2-Input NAND Buffer, OC	74F38	INV
Quad 2-Input NAND Transmission Line Driver	74F3037/174F3037	INV
Quad 2-Input Transmission Line Driver	74F3038	NINV
Quad Futurebus Backplane Transceiver, OC + 3-State	74F3893	NINV
Hex Inverter Buffer/Driver, OC	74F06/A	INV
Hex Inverter Buffer/Driver, OC	74F07/A	INV
Hex 2-Input NAND Driver, OC (Corner V _{CC} and GND)	74F804	INV
Hex 2-Input NAND Driver, OC (Corner V _{CC} and GND)	74F1804	INV
Hex 2-Input NOR Driver, OC (Corner V _{CC} and GND)	74F805	INV
Hex 2-Input NOR Driver, OC (Corner V _{CC} and GND)	74F1805	INV
Hex 2-Input AND Driver, OC (Corner V _{CC} and GND)	74F808	INV
Hex 2-Input AND Driver, OC (Corner V _{CC} and GND)	74F1808	INV
Hex 2-Input OR Driver, OC (Corner V _{CC} and GND)	74F832	INV
Hex 2-Input OR Driver, OC (Corner V _{CC} and GND)	74F1832	INV
Octal Inverter Buffer, OC	74F756	INV
Octal Buffer, OC	74F757	NINV
Octal Buffer, OC	74F760	NINV
Octal 30Ω Transmission Line/Backplane Driver, OC	74F30240	INV
Octal 30Ω Transmission Line/Backplane Driver, OC	74F30244	NINV
Octal Transceiver, OC	74F621	NINV
Octal Transceiver, OC	74F623	NINV
Octal Transceiver, OC	74F641	NINV
Octal Transceiver, OC	74F642	INV
Octal Transceiver/Register, OC	74F647	NINV
Octal Transceiver/Register, OC	74F649	INV
Octal Transceiver/Register, OC + 3-State	74F653	INV
Pi-Bus Transceiver (Octal Bidirectional Latched Transceiver), OC	74F776	NINV
Octal Latched Bidirectional Futurebus Transceiver, OC	74F8960	INV
Octal Latched Bidirectional Futurebus Transceiver, OC	74F8961	NINV

Function Selection Guide

SHIFT REGISTERS

FUNCTION	DEVICE NUMBER	BITS	SERIAL ENTRY	PARALLEL ENTRY	CLOCK EDGE
Serial-In/Parallel-Out	74F164	8	D_{sa}, D_{sb}		↑
Serial-In/Parallel-Out Output Latch, 3-State	74F595	8	D_S		↑
Serial-In/Parallel-In/Serial-Out, Parallel-Out	74F195	4	J, K	4D	↑
Serial-In/Parallel-In/Parallel-Out, Shift Right	74F199	8	J, K	8D	↑
Serial-In/Parallel-In/Serial-Out, Parallel-Out	74F598	8	D_{s0}, D_{s1}	8 I/O	↑
Serial-In/Parallel-In/Serial-Out	74F674	16	SI/O	SI/O, 16D	↓
Serial-In/Parallel-In/Serial-Out	74F676	16	SI	16D	↑
Serial-In/Parallel-In/Serial-Out, 10/9 Bit	74F847	10/9	D_S	10D	↑
Serial-In/Parallel-In/Parallel-Out, Shift Right, 3-State	74F395	4	D_S	4D	↑
Serial-In/Parallel-In/Serial-Out, Parallel-Out, 3-State	74F322	8	D_0, D_1	8 I/O	↑
Serial-In/Parallel-In/Parallel-Out	74F194	4	D_{sr}, D_{sl}	4D	↑
Serial-In/Parallel-In/Parallel-Out, Shift Right	74F199	8	J, K		↑
Serial-In/Parallel-In/Serial-Out	74F166	8	D_S		↑
Serial-In/Parallel-In/Parallel-Out, Bidirectional	74F198	8	D_{sr}, D_{sl}	8D	↑
Serial-In/Parallel-In/Serial-Out, Parallel-Out, 3-State	74F299	8	D_{s0}, D_{s7}	8 I/O	↑
Serial-In/Parallel-In/Serial-Out, Parallel-Out, 3-State	74F323	8	D_{s0}, D_{s7}	8 I/O	↑
Parallel-In/Serial-In/Serial-Out, Multiplexed Inputs	74F539	8	D_s, D_{na}, D_{nb}	8D	↑
Parallel-In/Serial-In/Serial-Out, 2:1 Multiplexed Inputs	74F835	8	D_s, D_{na}, D_{nb}	8D	↑
Parallel-In/Serial-Out, Input Latch	74F597	8	D_S	8D	↑
Parallel-In/Parallel-Out, 3-State	74F350	4	SI/O	4Y	↑
Parallel-In/Parallel-Out, 3-State	74F604	16		A_0-A_7, B_0-B_7	↑
Parallel-In/Parallel-Out, True & Complement Output	74F398	8	S	$I_{0a}-I_{0d}, I_{1a}-I_{1d}$	↑
Parallel-In/Parallel-Out	74F399	8	S	$I_{0a}-I_{0d}, I_{1a}-I_{1d}$	↑

COUNTERS

FUNCTION	DEVICE NUMBER	MODULUS	PRESETTABLE	PARALLEL ENTRY	CLOCK EDGE
Synchronous (Asynchronous Reset)	74F161A	16	X	Synchronous	↑
Synchronous (Synchronous Reset)	74F163A	16	X	Synchronous	↑
Up/Down, Binary	74F169	16	X	Synchronous	↑
Up/Down, BCD Binary	74F191	16	X	Asynchronous	↑
Up/Down, BCD Binary	74F193	16	X	Asynchronous	↑
Bidirectional, Binary	74F269	256	X	Synchronous	↑
Up/Down, 3-State	74F569	16	X	Synchronous	↑
Up/Down	74F579	256	X	Synchronous (I/O)	↑
Up/Down, 3-State Multiplexed	74F779	256	X	Synchronous (I/O)	↑
Up/Down, 3-State Multiplexed	74F1779	256	X	Synchronous (I/O)	↑
Ripple Counter	74F393	10	X		↓

Function Selection Guide

SECTION 1
INDICES

THREE-STATE BUFFERS, DRIVERS AND TRANSCEIVERS

FUNCTION	DEVICE NUMBER	OUTPUT
Quad Buffer	74F125	NINV
Quad Buffer	74F126	INV
Quad Bus Transceiver	74F242	INV
Quad Bus Transceiver	74F243	NINV
Quad Bus Transceiver	74F1243	NINV
Hex Buffer	74F365	NINV
Hex Inverter	74F366	INV
Hex Buffer, 4-Bit and 2-Bit	74F367	NINV
Hex Inverter, 4-Bit and 2-Bit	74F368	INV
Octal Buffer	74F240	INV
Octal Buffer	74F241	NINV
Octal Buffer	74F244/174F244	NINV
Octal Buffer	74F1240	INV
Octal Buffer	74F1241	NINV
Octal Buffer	74F1244	NINV
Octal Buffer with Parity	74F455	INV
Octal Buffer with Parity	74F456	NINV
Octal Buffer with Parity	74F655A/174F655A	INV
Octal Buffer with Parity	74F656A/174F656A	NINV
Octal Driver	74F540	INV
Octal Driver	74F541	NINV
Octal Transceiver	74F245	NINV
Octal Transceiver	74F545	NINV
Octal Transceiver	74F620	INV
Octal Transceiver	74F640	INV
Octal Transceiver	74F1245	NINV
Octal Transceiver with Parity	74F657/174F657	NINV
Octal Transceiver/Register	74F646/646A	NINV
Octal Transceiver/Register	74F648/648A	INV
Octal Transceiver/Register	74F651/651A	INV
Octal Transceiver/Register	74F652/652A	NINV
10-Bit Buffer	74F827	NINV
10-Bit Buffer	74F828	INV
10-Bit Transceiver	74F861	NINV
10-Bit Transceiver	74F862	INV
9-Bit Transceiver	74F863	NINV
9-Bit Transceiver	74F864	INV
Octal Registered Transceiver	74F543	NINV
Octal Registered Transceiver	74F544	INV
8-Bit Registered Transceiver	74F2952	NINV
8-Bit Registered Transceiver	74F2953	INV
Octal Registered Transceiver with Parity and Status Flags	74F552	INV
Octal Shift/Count Transceiver with Adder and Parity	74F807	INV

Function Selection Guide

PRIORITY ENCODERS

FUNCTION	DEVICE NUMBER	ENABLE LEVEL	INPUT/OUTPUT LEVEL
8-to-3	74F148	Low	Active Low

ARITHMETIC FUNCTIONS

FUNCTION	DEVICE NUMBER
4-Bit Arithmetic Logic Unit	74F181
4-Bit Arithmetic Logic Unit	74F381
4-Bit ALU with Overflow Output for Two's Complement	74F382
4-Bit Binary Full Adder with Fast Carry	74F283
Look Ahead Carry Generator	74F182
Quad Serial Adder/Subtractor	74F285

COMPARATORS

FUNCTION	DEVICE NUMBER
4-Bit Identity Comparator	74F85
8-Bit Comparator	74F521
8-Bit Register Comparator	74F524

PARITY

FUNCTION	DEVICE NUMBER
9-Bit Odd/Even Parity Generator/Checker	74F280A/280B/174F280B

SPECIAL FUNCTIONS

FUNCTION	DEVICE NUMBER
16 × 5 Asynchronous FIFO (3-State)	74F225
64-Bit RAM	74F189A/219A
Register Stack -- 16 × 4 RAM 3-State Output Register	74F410
DRAM Dual-Ported Controller with Refresh	74F764-1
DRAM Dual-Ported Controller without Latch	74F765-1
4-Bit Asynchronous Bus Arbiter	74F786
1-MBit Memory Address Controller	74F1762
1-MBit Intelligent DRAM Controller	74F1763
1-MBit DRAM Dual-Ported Controller with Latch	74F1764
1-MBit DRAM Dual-Ported Controller without Latch	74F1765
Burst Mode DRAM Controller	74F1776
LED Driver	74F5300