

## Advanced Low Voltage CMOS

## FUNCTION SELECTION GUIDE

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## LV FAMILY

## GATES

	FUNCTION	DEVICE NUMBER
INVERTERS	Hex Inverter	74LV04
	Hex Inverter (unbuffered)	74LVU04
	Hex Inverter (Schmitt-Trigger)	74LV14
NAND	Quad 2-input	74LV00
	Quad 2-input (Open Drain)	74LV03
	Triple 3-input	74LV10
	Dual 4-input	74LV20
	Quad 2-input (Schmitt-Trigger)	74LV132
AND	Quad 2-input	74LV08
	Triple 3-input	74LV11
NOR	Quad 2-input	74LV02
	Triple 3-input	74LV27
OR	Quad 2-input	74LV32
EXCLUSIVE-OR	Quad 2-input	74LV86
MULTIVIBRATOR	Dual retriggerable monostable with reset	74LV123

## FLIP-FLOPS

FUNCTION	DEVICE NUMBER	CLOCK EDGE	SET	RESET	OUTPUT
Dual D-type	74LV74	positive	LOW	LOW	NINV INV
Dual J-K	74LV107	negative	–	LOW	NINV INV
Dual J-K	74LV109	positive	LOW	LOW	NINV INV
Hex D-type	74LV174	positive	–	LOW	NINV
Quad D-type	74LV175	positive	–	LOW	NINV INV
Octal D-type	74LV273	positive	–	LOW	NINV
Octal D-type, 3-state	74LV374	positive	–	–	NINV
Octal D-type, data enable	74LV377	positive	–	–	NINV
Octal D-type, 3-state	74LV574	positive	–	–	NINV

## NOTE

1. INV = inverting; NINV = non-inverting

## LATCHES

FUNCTION	DEVICE NUMBER	RESET LEVEL	ENABLE LEVEL	OUTPUT
8-bit Addressable	74LV259	LOW	LOW	NINV
Octal D-type transparent, 3-state	74LV373	–	HIGH	NINV
Octal D-type transparent, 3-state	74LV573	–	HIGH	NINV

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## FUNCTION SELECTION GUIDE

## LV FAMILY (continued)

## MULTIPLEXERS

FUNCTION	DEVICE NUMBER	SELECT INPUTS	ENABLE LEVEL	OUTPUT
Dual 4 to 1	74LV153	2 (HIGH)	2 (LOW)	NINV
Quad 2-Input	74LV157	1 (HIGH)	1 (LOW)	NINV
8 to 1, 3-state	74LV251	3 (HIGH)	–	NINV INV
Quad 2 to 1, 3-state	74LV257	1 (HIGH)	–	NINV

## NOTE

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## DECODERS/MULTIPLEXERS

FUNCTION	DEVICE NUMBER	ADDRESS INPUTS	ENABLE LEVEL	OUTPUT
3-to-8 line Decoder/Demultiplexer	74LV138	3	2 (LOW) + 1 (HIGH)	INV
Dual 2-to-4 line Decoder/Demultiplexer	74LV139	2 + 2	1 (LOW) + 1 (LOW)	INV
4-to-16 line Decoder/Demultiplexer	74LV154	4	2 (LOW)	INV

## NOTE

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## SWITCHES/MULTIPLEXERS/DEMULPLEXERS

FUNCTION	DEVICE NUMBER	ADDRESS INPUTS	ENABLE LEVEL	OUTPUT
8-channel analog Multiplexer/Demultiplexer	74LV4051	3	1 (LOW)	NINV
Dual 4-channel analog Multiplexer/Demultiplexer	74LV4052	2	1 (LOW)	NINV
Triple 2-channel analog Multiplexer/Demultiplexer	74LV4053	3	1 (LOW)	NINV
Quad bilateral Switches	74LV4066	–	4 (HIGH)	NINV
16-channel analog Multiplexer/Demultiplexer	74LV4067	4	1 (LOW)	NINV
Quad bilateral analog Switches	74LV4316	4	1 (LOW)	NINV

## NOTE

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## BUFFERS, DRIVERS, AND TRANSCEIVERS, 3-STATE

FUNCTION	DEVICE NUMBER	OUTPUT ENABLE LEVEL	OUTPUT
Quad buffer/line driver	74LV125	4 (LOW)	NINV
Quad buffer/line driver	74LV126	4 (HIGH)	NINV
Dual Quad buffer/line driver	74LV240	2 (LOW)	INV
Dual Quad buffer/line driver	74LV241	1 (LOW) + 1 (HIGH)	NINV
Dual Quad buffer/line driver	74LV244	2 (LOW)	NINV
Octal bus transceiver	74LV245	LOW	NINV
Hex buffer/line driver	74LV365	2 (LOW)	NINV
4- plus 2 bit buffer/line driver	74LV367	2 (LOW)	NINV
4- plus 2 bit buffer/line driver	74LV368	2 (LOW)	INV
Octal buffer/line driver	74LV541	2 (LOW)	NINV

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## FUNCTION SELECTION GUIDE

## LV FAMILY (continued)

## SHIFT REGISTERS

FUNCTION	DEVICE NUMBER	BITS	CLOCK	MASTER RESET	OUTPUT
Serial-In / parallel-out	74LV164	8	positive	LOW	NINV
Parallel-In / Serial-out with clock enable	74LV165	8	positive	–	NINV INV
Serial-In / Serial or Parallel-out with output latches, 3-state	74LV595	8	positive	LOW	NINV
Shift-and-store bus register, 3-state	74LV4094	8	positive	–	NINV

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## COUNTERS

FUNCTION	DEVICE NUMBER	BITS	CLOCK	MASTER RESET	PRESETTABLE
Synchronous 4-bit binary, asynchronous reset	74LV161	4	positive	LOW	yes
Synchronous 4-bit binary, synchronous reset	74LV163	4	positive	LOW	yes
Dual 4-bit binary ripple counter	74LV393	4	negative	HIGH	–
14-stage binary ripple counter	74LV4020	14	negative	HIGH	–
12-stage binary ripple counter	74LV4040	12	negative	HIGH	–
14-stage binary ripple counter with oscillator	74LV4060	14	positive	HIGH	–

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## ARITHMETIC FUNCTION

FUNCTION	DEVICE NUMBER	OUTPUT ENABLE LEVEL
8-bit Magnitude Comparator	74LV688	LOW

## SPECIAL FUNCTION

FUNCTION	DEVICE NUMBER	NUMBER OF CELLS
Timer for NiCd and NiMH chargers	74LV4799	1 to 4

## FUNCTION SELECTION GUIDE

## LVC FAMILY

## GATES

	FUNCTION	DEVICE NUMBER
INVERTERS	Hex Inverter	74LVC04A
	Hex Inverter (unbuffered)	74LVCU04A
	Hex Inverter (Schmitt-Trigger)	74LVC14
NAND	Quad 2-input	74LVC00A
	Triple 3-input	74LVC10A
AND	Quad 2-input	74LVC08A
	Triple 3-input	74LV11
NOR	Quad 2-input	74LVC02A
	Triple 3-input	74LVC27
OR	Quad 2-input	74LVC32A
EXCLUSIVE-OR	Quad 2-input	74LVC86A

## FLIP-FLOPS

FUNCTION	DEVICE NUMBER	CLOCK EDGE	SET	RESET	OUTPUT
Dual D-type	74LVC74A	positive	LOW	LOW	NINV INV
Dual J-K	74LVC109	positive	LOW	LOW	NINV INV
Octal D-type	74LVC273	positive	–	LOW	NINV
Octal D-type, 3-State	74LVC374A	positive	–	–	NINV
Octal D-type, data enable	74LVC377	positive	–	–	NINV
Octal D-type, 3-State	74LVC574A	positive	–	–	NINV
10-Bit D-type, 3-State	74LVC821A	positive	–	–	NINV
9-Bit D-type, 3-State	74LVC823A	positive	–	LOW	NINV

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## LATCHES, 3-STATE

FUNCTION	DEVICE NUMBER	OUTPUT ENABLE LEVEL	INPUT ENABLE LEVEL	OUTPUT
Octal D-type transparent	74LVC373A	LOW	HIGH	NINV
Octal D-type transparent	74LVC573A	LOW	HIGH	NINV
10-bit transparent latch	74LVC841A	LOW	HIGH	NINV

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## MULTIPLEXERS

FUNCTION	DEVICE NUMBER	SELECT INPUTS	ENABLE LEVEL	OUTPUT
Quad 2-Input	74LVC157A	1 (HIGH)	1 (LOW)	NINV
Quad 2 to 1, 3-State	74LVC257A	1 (HIGH)	–	NINV

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## FUNCTION SELECTION GUIDE

## LVC FAMILY (continued)

## DECODERS/DEMULPLEXERS

FUNCTION	DEVICE NUMBER	ADDRESS INPUTS	ENABLE LEVEL	OUTPUT
3-to-8 line Decoder/Demultiplexer	74LVC138A	3	2 (LOW)+1 (HIGH)	INV
Dual 2-to-4 line Decoder/Demultiplexer	74LVC139	2 + 2	1 (LOW)+1 (LOW)	INV

**NOTE**

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## REGISTERS, 3-STATE

FUNCTION	DEVICE NUMBER	BITS	LATCH ENABLE	OUTPUT
Octal D-type registered transceiver	74LVC543A	8	LOW	NINV
Octal registered transceiver	74LVC544A	8	LOW	INV
Octal bus transceiver/register	74LVC646A	8	–	NINV
Octal bus transceiver/register	74LVC652	8	–	NINV
Octal registered transceiver	74LVC2952A	8	–	NINV

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## LATCHES, COUNTERS

FUNCTION	DEVICE NUMBER	BITS	CLOCK EDGE	MASTER RESET	PRESETTABLE
Synchronous 4-bit binary, asynchronous reset	74LVC161	4	positive	LOW	yes
Synchronous 4-bit binary, synchronous reset	74LVC163	4	positive	LOW	yes
Synchronous 4-bit binary, up/down binary counter	74LVC169	4	positive	–	yes

## BUFFERS, DRIVERS, AND TRANSCEIVERS, 3-STATE

FUNCTION	DEVICE NUMBER	OUTPUT ENABLE LEVEL	BUS HOLD	OUTPUT
4-bit buffer/line driver	74LVC125A	4 (LOW)	–	NINV
4-bit buffer/line driver	74LVC126A	4 (HIGH)	–	NINV
4-bit buffer/line driver	74LVC240A	2 (LOW)	–	INV
4-bit buffer/line driver	74LVC241A	1 (LOW)+1 (HIGH)	–	NINV
4-bit buffer/line driver	74LVC244A	2 (LOW)	–	NINV
8-bit buffer/line driver	74LVCH244A	2 (LOW)	yes	NINV
Octal bus transceiver	74LVC245A	LOW	–	NINV
Octal bus transceiver	74LVCH245A	LOW	yes	NINV
Octal buffer/line driver	74LVC541A	2 (LOW)	–	NINV
Octal transceiver	74LVC623A	1 (LOW)+1 (HIGH)	–	NINV
10-bit buffer/line driver	74LVC827A	2 (LOW)	–	NINV

**NOTE**

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## FUNCTION SELECTION GUIDE

## LVC FAMILY (continued)

## 16-BIT BUFFERS, DRIVERS, AND TRANSCEIVERS, 3-STATE

FUNCTION	DEVICE NUMBER	OUTPUT ENABLE LEVEL	BUS HOLD	30 Ω SERIES RESISTOR	OUTPUT
16-bit Buffer/Line driver	74LVC16240A	4 (LOW)	–	–	INV
16-bit Buffer/Line driver	74LVC16241A	2 (LOW) + 2 (HIGH)	–	–	NINV
16-bit Buffer/Line driver	74LVC16244A	4 (LOW)	–	–	NINV
16-bit Buffer/Line driver	74LVCH16244A	4 (LOW)	yes	–	NINV
16-bit Buffer/Line driver	74LVC162244A	4 (LOW)	–	yes	NINV
16-bit Buffer/Line driver	74LVCH162244A	4 (LOW)	yes	yes	NINV
16-bit Buffer/Line driver	74LVCH16541A	2 (LOW) +2 (LOW)	yes	–	NINV
16-bit bus transceiver	74LVC16245A	2 (LOW)	–	–	NINV
16-bit bus transceiver	74LVCH16245A	2 (LOW)	yes	–	NINV
16-bit bus transceiver	74LVC162245A	2 (LOW)	–	yes	NINV
16-bit bus transceiver	74LVCH162245A	2 (LOW)	yes	yes	NINV

**NOTE**

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## 16-BIT FLIP-FLOPS, 3-STATE

FUNCTION	DEVICE NUMBER	OUTPUT ENABLE LEVEL	BUS HOLD	CLOCK EDGE	OUTPUT
16-bit D-type positive edge triggered	74LVC16374A	2 (LOW)	–	positive	NINV
16-bit D-type positive edge triggered	74LVCH16374A	2 (LOW)	yes	positive	NINV

**NOTE**

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## 16-BIT LATCHES, 3-STATE

FUNCTION	DEVICE NUMBER	OUTPUT ENABLE LEVEL	BUS HOLD	LATCH ENABLE	OUTPUT
16-bit D-type transparent latch	74LVC16373A	2 (LOW)	–	2 (HIGH)	NINV
16-bit D-type transparent latch	74LVCH16373A	2 (LOW)	yes	2 (HIGH)	NINV

**NOTE**

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## SPECIAL FUNCTION

FUNCTION	DEVICE NUMBER
Parallel printer Interface transceiver, buffer	74LVC1284
8-Bit dual supply translating transceiver, 3-State	74LVC4245A

## FUNCTION SELECTION GUIDE

## ALVCFAMILY

## MULTI-BIT BUFFERS, DRIVERS, AND TRANSCEIVERS, 3-STATE

FUNCTION	DEVICE NUMBER	OUTPUT ENABLE LEVEL	BUS HOLD	30 $\Omega$ TERMINATION RESISTOR	OUTPUT <sup>1</sup>
16-bit buffer/line driver	74ALVC16244	4 (LOW)	–	–	NINV
16-bit buffer/line driver	74ALVCH16244	4 (LOW)	YES	–	NINV
16-bit buffer/line driver	74ALVCH162244	4 (LOW)	YES	YES	NINV
16-bit bus transceiver	74ALVC16245	2 (LOW)	–	–	NINV
16-bit bus transceiver	74ALVCH16245	2 (LOW)	YES	–	NINV
16-bit bus transceiver	74ALVCH162245	2 (LOW)	YES	YES	NINV
18-bit Universal Bus transceiver	74ALVCH16500	1 (LOW) + 1 (HIGH)	YES	–	NINV
18-bit Universal Bus transceiver	74ALVCH16501	1 (LOW) + 1 (HIGH)	YES	–	NINV
16-bit buffer/line driver	74ALVCH16540	2 (LOW) + 2 (LOW)	YES	–	INV
18-bit Universal Bus transceiver	74ALVCH16600	2 (LOW)	YES	–	NINV
18-bit Universal Bus transceiver	74ALVCH16601	2 (LOW)	YES	–	NINV
16-bit bus transceiver	74ALVCH16623	1 (LOW) + 1 (HIGH)	YES	–	NINV
18-bit buffer/driver	74ALVCH16825	2 (LOW) + 2 (LOW)	YES	–	NINV
20-bit buffer/driver	74ALVCH16827	2 (LOW) + 2 (LOW)	YES	–	NINV
20-bit buffer/driver	74ALVCH162827	2 (LOW) + 2 (LOW)	YES	YES	NINV
18-bit buffer/driver	74ALVC16835	1 (LOW)	–	–	NINV
18-bit buffer/driver	74ALVC162835	1 (LOW)	–	YES	NINV

**NOTE**

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## MULTI-BIT FLIP-FLOPS, 3-STATE

FUNCTION	DEVICE NUMBER	CLOCK EDGE	SET	RESET	BUS HOLD	OUTPUT <sup>1</sup>
16-bit D-type	74ALVCH16374	positive	–	–	YES	NINV
20-bit D-type	74ALVCH16821	positive	–	–	YES	NINV
18-bit D-type	74ALVCH16823	positive	–	LOW	YES	NINV

**NOTE**

1. NINV = non-inverting

## MULTI-BIT LATCH, 3-STATE

FUNCTION	DEVICE NUMBER	OUTPUT ENABLE LEVEL	INPUT ENABLE LEVEL	BUS HOLD	OUTPUT <sup>1</sup>
16-bit D-type transparent latch	74ALVCH16373	2 (LOW)	2 (HIGH)	YES	NINV
20-bit D-type transparent latch	74ALVCH16841	2 (LOW)	2 (HIGH)	YES	NINV
18-bit latch with set and reset	74ALVCH16843	2 (LOW)	2 (HIGH)	YES	NINV

**NOTE**

1. NINV = non-inverting

**FUNCTION SELECTION GUIDE**

**ALVC FAMILY (continued)**

**REGISTERS, 3-STATE**

FUNCTION	DEVICE NUMBER	INPUT ENABLE LEVEL	OUTPUT ENABLE LEVEL	BUS HOLD	OUTPUT <sup>1</sup>
16-bit D-type registered transceiver	74ALVCH16543	2 (LOW) + 2 (LOW)	2 (LOW) + 2 (LOW)	YES	NINV
16-bit transceiver/register	74ALVCH16646	–	1 (LOW) + 1 (LOW)	YES	NINV
16-bit transceiver/register	74ALVCH16652	–	2 (LOW) + 2 (HIGH)	YES	NINV
16-bit transceiver/register	74ALVCH16952	–	2 (LOW) + 2 (LOW)	YES	NINV

**NOTE**

1. NINV = non-inverting

**SPECIAL FUNCTION**

FUNCTION	DEVICE NUMBER
16-Bit dual supply translating transceiver, 3-state	74ALVC164245