

## Summary

This FPGA IO Standards Reference provides an overview for the different IO Standards supported by various FPGA device families.

## Introduction

FPGA IO Standards Reference covers all the IO standards supported in Altium Designer. The device support tables given with individual IO standard provide information about the value for the standard when used as a constraints attribute.

## IO Standards

The available IO Standards are listed as follows:

AGP1x	AGP2x	BLVDS25	COMPACTPCI_3
CTT	DHSTL18I	DHSTL18II	DHSTL18II_DCI
DHSTL18III	DHSTLI	DHSTLII	DHSTLII_DCI
DHSTLIII	DSSTL2I	DSSTL2II	DSSTL2II_DCI
DSSTL3I	DSSTL3II	DSSTL18I	DSSTL18II
DSSTL18II_DCI	FPGA_DRIVE	FPGA_SLEW	GTL
GTL_DCI	GTLP	GTLP_DCI	HSTL_12
HSTLI	HSTLI_18	HSTLI_18_DCI	HSTLI_DCI
HSTLII	HSTLII_18	HSTLII_18_DCI	HSTLII_DCI
HSTLIII	HSTLIII_18	HSTLIII_18_DCI	HSTLIII_DCI
HSTLIV	HSTLIV_18	HSTLIV_18_DCI	HSTLIV_DCI
HTT	LDT	LDT_DT	LVC MOS5
LVC MOS12	LVC MOS15	LVC MOS15_DCI	LVC MOS15_DCI_DV2
LVC MOS18	LVC MOS18_DCI	LVC MOS18_DCI_DV2	LVC MOS25
LVC MOS25_DCI	LVC MOS25_DCI_DV2	LVC MOS33	LVC MOS33_DCI
LVC MOS33_DCI_DV2	LVDS	LVDS25_DCI	LVDS33
LVDS33_DCI	LVDS_DT	LVDS EXT25	LVDS EXT25_DCI
LVDS EXT25_DT	LVDS EXT33	LVDS EXT33_DCI	LVPECL
LVPECL25	LVTTL15	LVTTL18	LVTTL25
LVTTL33	MiniLVDS25	PCI33_3	PCI33_5
PCI66	PCIX_3	PCML	PCML15
RS DS25	SSTL2I	SSTL2I_DCI	SSTL2II
SSTL2II_DCI	SSTL3I	SSTL3I_DCI	SSTL3II

*SSTL3II\_DCI*

*SSTL18I*

*SSTL18I\_DCI*

*SSTL18II*

*SSTL18II\_DCI*

*TTL*

*ULVDS25*

*ULVDS25\_DT*

**AGP1X****Accelerated Graphics Port 1x**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	AGP 1X
Stratix2	-
StratixGX	AGP 1X
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**AGP2X****Accelerated Graphics Port 2x**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	AGP 2X
Stratix2	-
StratixGX	AGP 2X
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	AGP
Spartan2E	AGP
Spartan3	-
Spartan3E	-
Virtex	AGP
Virtex2	AGP
Virtex2p	-
VirtexE	AGP
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**BLVDS25****Bus Low Voltage Differential Signaling (2.5 Volts)**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	BLVDS_25
Spartan3E	BLVDS_25
Virtex	-
Virtex2	BLVDS_25
Virtex2p	BLVDS_25
VirtexE	-
Virtex4	BLVDS_25
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	BLVDS25
ECP	BLVDS25

**COMPACTPCI\_3****Compact Peripheral Component Interconnect (3.3 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	Compact PCI
Stratix2	-
StratixGX	Compact PCI
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**CTT****Center Tap Terminated**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	CTT
Stratix2	-
StratixGX	CTT
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	CTT
Spartan2E	CTT
Spartan3	-
Spartan3E	-
Virtex	CTT
Virtex2	-
Virtex2p	-
VirtexE	CTT
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**DHSTL18I****Differential High-Speed Transceiver Logic (1.8 Volts) Class I**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	Differential HSTL 1.8-V HSTL Class I
Stratix	-
Stratix2	Differential HSTL 1.8-V HSTL Class I
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	HSTL18D_I
ECP	HSTL18D_I



**DHSTL18II****Differential High-Speed Transceiver Logic (1.8 Volts) Class II**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	Differential HSTL 1.8-V HSTL Class II
Stratix	-
Stratix2	Differential HSTL 1.8-V HSTL Class II
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	DIFF_HSTL_II_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	HSTL18D_II
ECP	HSTL18D_II

**DHSTL18II\_DCI****Differential High-Speed Transceiver Logic (1.8 Volts) Class II with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	DIFF_HSTL_II_DCI_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**DHSTL18III****Differential High-Speed Transceiver Logic (1.8 Volts) Class III**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	HSTL18D_III
ECP	HSTL18D_III

**DHSTLI****Differential High-Speed Transceiver Logic Class I**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	Differential HSTL 1.5-V HSTL
Stratix	Differential HSTL 1.5-V HSTL
Stratix2	Differential HSTL 1.5-V HSTL
StratixGX	Differential HSTL 1.5-V HSTL
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	HSTL15D_I
ECP	HSTL15D_I

**DHSTLII****Differential High-Speed Transceiver Logic Class II**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	Differential HSTL 1.5-V HSTL Class II
Stratix	-
Stratix2	Differential HSTL 1.5-V HSTL Class II
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	DIFF_HSTL_II
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**DHSTLII\_DCI****Differential High-Speed Transceiver Logic Class II with Digitally Controlled Impedance technology**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	DIFF_HSTL_II_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**DHSTLIII****Differential High-Speed Transceiver Logic Class III**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	HSTL15D_III
ECP	HSTL15D_III

**DSSTL2I****Differential Stub Series Terminated Logic (2.5 Volts) Class I**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	Differential SSTL-2
Stratix	-
Stratix2	Differential SSTL-2
StratixGX	Differential SSTL-2
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	SSTL25D_I
ECP	SSTL25D_I



**DSSTL2II****Differential Stub Series Terminated Logic (2.5 Volts) Class II**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	Differential SSTL-2 Class II
Stratix	Differential SSTL-2 Class II
Stratix2	Differential SSTL-2 Class II
StratixGX	Differential SSTL-2 Class II
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	DIFF_SSTL2_II
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	SSTL25D_II
ECP	SSTL25D_II

**DSSTL2II\_DCI****Differential Stub Series Terminated Logic (2.5 Volts) Class II with Digitally Controlled Impedance technology**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	DIFF_SSTL2_II_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**DSSTL3I****Differential Stub Series Terminated Logic (3.3 Volts) Class I**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	SSTL33D_I
ECP	SSTL33D_I

**DSSTL3II****Differential Stub Series Terminated Logic (3.3 Volts) Class II**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	SSTL33D_II
ECP	SSTL33D_II

**DSSTL18I****Differential Stub Series Terminated Logic (1.8 Volts) Class I**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	Differential 1.8-V SSTL Class I
Stratix	-
Stratix2	Differential 1.8-V SSTL Class I
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	SSTL18D_I
ECP	SSTL18D_I

**DSSTL18II****Differential Stub Series Terminated Logic (1.8 Volts) Class II**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	Differential 1.8-V SSTL Class II
Stratix	-
Stratix2	Differential 1.8-V SSTL Class II
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	DIFF_SSTL18_II
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**DSSTL18II\_DCI****Differential Stub Series Terminated Logic (1.8 Volts) Class II with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	DIFF_SSTL18_II_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**FPGA\_DRIVE****FPGA Drive Strength**

<b>Device</b>	<b>Value</b>
Cyclone	2mA / 4mA / 8mA / 12mA / 16mA / 24mA
Cyclone2	2mA / 4mA / 6mA / 8mA / 10mA / 12mA / 16mA / 20mA / 24mA
Stratix	2mA / 4mA / 8mA / 12mA / 16mA / 24mA
Stratix2	2mA / 4mA / 6mA / 8mA / 10mA / 12mA / 16mA / 20mA / 24mA
StratixGX	2mA / 4mA / 8mA / 12mA / 16mA / 24mA
Max2	2mA / 3mA / 4mA / 6mA / 7mA / 8mA / 14mA / 16mA
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	2 / 4 / 6 / 8 / 12 / 16 / 24
Spartan2E	2 / 4 / 6 / 8 / 12 / 16 / 24
Spartan3	2 / 4 / 6 / 8 / 12 / 16 / 24
Spartan3E	2 / 4 / 6 / 8 / 12 / 16 / 24
Virtex	2 / 4 / 6 / 8 / 12 / 16 / 24
Virtex2	2 / 4 / 6 / 8 / 12 / 16 / 24
Virtex2p	2 / 4 / 6 / 8 / 12 / 16 / 24
VirtexE	2 / 4 / 6 / 8 / 12 / 16 / 24
Virtex4	2 / 4 / 6 / 8 / 12 / 16 / 24
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	2 / 4 / 6 / 8 / 12 / 16 / 20
ECP	2 / 4 / 6 / 8 / 12 / 16 / 20



**FPGA\_SLEW****FPGA Slew Rate**

<b>Device</b>	<b>Value</b>
Cyclone	OFF / ON
Cyclone2	-
Stratix	OFF / ON
Stratix2	-
StratixGX	OFF / ON
Max2	OFF / ON
Max3000a	OFF / ON
Max7000b	OFF / ON
Max7000ae	OFF / ON
Max7000s	OFF / ON
Spartan2	FAST / SLOW
Spartan2E	FAST / SLOW
Spartan3	FAST / SLOW
Spartan3E	FAST / SLOW
Virtex	FAST / SLOW
Virtex2	FAST / SLOW
Virtex2p	FAST / SLOW
VirtexE	FAST / SLOW
Virtex4	FAST / SLOW
CoolRunner2	FAST / SLOW
CoolRunnerXpla3	FAST / SLOW
Xc9500	FAST / SLOW
Xc9500XL	FAST / SLOW
Xc9500XV	FAST / SLOW
ProAsicPlus	-
EC	FAST / SLOW
ECP	FAST / SLOW

**GTL****Gunning Transceiver Logic**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	GTL
Stratix2	-
StratixGX	GTL
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	GTL
Spartan2E	GTL
Spartan3	GTL
Spartan3E	-
Virtex	GTL
Virtex2	GTL
Virtex2p	GTL
VirtexE	GTL
Virtex4	GTL
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**GTL\_DCI****Gunning Transceiver Logic with Digitally Controlled Impedance**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	GTL_DCI
Spartan3E	-
Virtex	-
Virtex2	GTL_DCI
Virtex2p	GTL_DCI
VirtexE	-
Virtex4	GTL_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**GTLP****Gunning Transceiver Logic Plus**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	GTLP+
Stratix2	-
StratixGX	GTLP+
Max2	-
Max3000a	-
Max7000b	GTLP+
Max7000ae	-
Max7000s	-
Spartan2	GTLP
Spartan2E	GTLP
Spartan3	GTLP
Spartan3E	-
Virtex	GTLP
Virtex2	GTLP
Virtex2p	GTLP
VirtexE	GTLP
Virtex4	GTLP
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**GTLP\_DCI****Gunning Transceiver Logic Plus with Digitally Controlled Impedance**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	GTLP_DCI
Spartan3E	-
Virtex	-
Virtex2	GTLP_DCI
Virtex2p	GTLP_DCI
VirtexE	-
Virtex4	GTLP_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTL\_12****High-Speed Transceiver Logic (1.2 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	1.2-V HSTL
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTLI****High-Speed Transceiver Logic Class I**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	1.5-V HSTL CLASS I
Stratix	1.5-V HSTL CLASS I
Stratix2	1.5-V HSTL CLASS I
StratixGX	1.5-V HSTL CLASS I
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	HSTL_I
Spartan2E	HSTL_I
Spartan3	HSTL_I
Spartan3E	-
Virtex	HSTL_I
Virtex2	HSTL_I
Virtex2p	HSTL_I
VirtexE	HSTL_I
Virtex4	HSTL_I
CoolRunner2	HSTL_I
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	HSTL15_I
ECP	HSTL15_I

**HSTLI\_18****High-Speed Transceiver Logic (1.8 Volts) Class I**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	1.8-V HSTL CLASS I
Stratix	1.8-V HSTL CLASS I
Stratix2	1.8-V HSTL CLASS I
StratixGX	1.8-V HSTL CLASS I
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	HSTL_I_18
Spartan3E	HSTL_I_18
Virtex	-
Virtex2	HSTL_I_18
Virtex2p	HSTL_I_18
VirtexE	-
Virtex4	HSTL_I_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	HSTL18_I
ECP	HSTL18_I



**HSTLI\_18\_DCI****High-Speed Transceiver Logic (1.8 Volts) Class I with Digitally Controlled Impedance technology**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	HSTL_I_DCI_18
Spartan3E	-
Virtex	-
Virtex2	HSTL_I_DCI_18
Virtex2p	HSTL_I_DCI_18
VirtexE	-
Virtex4	HSTL_I_DCI_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTLI\_DCI****High-Speed Transceiver Logic Class I with Digitally Controlled Impedance technology**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	HSTL_I_DCI
Spartan3E	-
Virtex	-
Virtex2	HSTL_I_DCI
Virtex2p	HSTL_I_DCI
VirtexE	-
Virtex4	HSTL_I_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTLII****High-Speed Transceiver Logic Class II**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	1.5-V HSTL CLASS II
Stratix	1.5-V HSTL CLASS II
Stratix2	1.5-V HSTL CLASS II
StratixGX	1.5-V HSTL CLASS II
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	HSTL_II
Virtex2p	HSTL_II
VirtexE	-
Virtex4	HSTL_II
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTLII\_18****High-Speed Transceiver Logic (1.8 Volts) Class II**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	1.8-V HSTL CLASS II
Stratix	1.8-V HSTL CLASS II
Stratix2	1.8-V HSTL CLASS II
StratixGX	1.8-V HSTL CLASS II
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	HSTL_II_18
Spartan3E	-
Virtex	-
Virtex2	HSTL_II_18
Virtex2p	HSTL_II_19
VirtexE	-
Virtex4	HSTL_II_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	HSTL18_II
ECP	HSTL18_II

**HSTLII\_18\_DCI****High-Speed Transceiver Logic (1.8 Volts) Class II with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	HSTL_II_DCI_18
Spartan3E	-
Virtex	-
Virtex2	HSTL_II_DCI_18
Virtex2p	HSTL_II_DCI_18
VirtexE	-
Virtex4	HSTL_II_DCI_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTLII\_DCI****High-Speed Transceiver Logic Class II with Digitally Controlled Impedance technology**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	HSTL_II_DCI
Virtex2p	HSTL_II_DCI
VirtexE	-
Virtex4	HSTL_II_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTLIII****High-Speed Transceiver Logic Class III**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	HSTL_III
Spartan2E	HSTL_III
Spartan3	HSTL_III
Spartan3E	-
Virtex	HSTL_III
Virtex2	HSTL_III
Virtex2p	HSTL_III
VirtexE	HSTL_III
Virtex4	HSTL_III
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	HSTL15_III
ECP	HSTL15_III

**HSTLIII\_18****High-Speed Transceiver Logic (1.8 Volts) Class III**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	HSTL_III_18
Spartan3E	HSTL_III_18
Virtex	-
Virtex2	HSTL_III_18
Virtex2p	HSTL_III_18
VirtexE	-
Virtex4	HSTL_III_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	HSTL18_III
ECP	HSTL18_III



**HSTLIII\_18\_DCI****High-Speed Transceiver Logic (1.8 Volts) Class III with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	HSTL_III_DCI_18
Spartan3E	-
Virtex	-
Virtex2	HSTL_III_DCI_18
Virtex2p	HSTL_III_DCI_18
VirtexE	-
Virtex4	HSTL_III_DCI_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTLIII\_DCI****High-Speed Transceiver Logic Class III with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	HSTL_III_DCI
Spartan3E	-
Virtex	-
Virtex2	HSTL_III_DCI
Virtex2p	HSTL_III_DCI
VirtexE	-
Virtex4	HSTL_III_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTLIV****High-Speed Transceiver Logic Class IV**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	HSTL_IV
Spartan2E	HSTL_IV
Spartan3	-
Spartan3E	-
Virtex	HSTL_IV
Virtex2	HSTL_IV
Virtex2p	HSTL_IV
VirtexE	HSTL_IV
Virtex4	HSTL_IV
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTLIV\_18****High-Speed Transceiver Logic (1.8 Volts) Class IV**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	HSTL_IV_18
Virtex2p	HSTL_IV_18
VirtexE	-
Virtex4	HSTL_IV_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTLIV\_18\_DCI****High-Speed Transceiver Logic (1.8 Volts) Class IV with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	HSTL_IV_DCI_18
Virtex2p	HSTL_IV_DCI_18
VirtexE	-
Virtex4	HSTL_IV_DCI_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HSTLIV\_DCI****High-Speed Transceiver Logic Class IV with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	HSTL_IV_DCI
Virtex2p	HSTL_IV_DCI
VirtexE	-
Virtex4	HSTL_IV_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**HTT****HyperTransport Technology**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	HyperTransport
Stratix2	HyperTransport
StratixGX	HyperTransport
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LDT****Lightning Data Transport**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LDT_25
Spartan3E	LDT_25
Virtex	-
Virtex2	LDT_25
Virtex2p	LDT_25
VirtexE	-
Virtex4	LDT_25
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-



**LDT\_DT****Lightning Data Transport with Differential Termination**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	LDT_25_DT
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVC MOS5****Low-Voltage Complementary Metal-Oxide Semiconductor (5 Volts)**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVC MOS12****Low-Voltage Complementary Metal-Oxide Semiconductor (1.2 Volts)**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVC MOS12
Spartan3E	LVC MOS12
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	LVC MOS12
ECP	LVC MOS12

**LVC MOS15****Low-Voltage Complementary Metal-Oxide Semiconductor (1.5 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	1.5 V
Cyclone2	1.5 V
Stratix	1.5 V
Stratix2	1.5 V
StratixGX	1.5 V
Max2	1.5 V
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVC MOS15
Spartan3E	LVC MOS15
Virtex	-
Virtex2	LVC MOS15
Virtex2p	LVC MOS15
VirtexE	-
Virtex4	LVC MOS15
CoolRunner2	LVC MOS15
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	LVC MOS15
EC	LVC MOS15
ECP	LVC MOS15

**LVCMOS15\_DCI****Low-Voltage Complementary Metal-Oxide Semiconductor (1.5 Volts) with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVDCI_15
Spartan3E	-
Virtex	-
Virtex2	LVDCI_15
Virtex2p	LVDCI_15
VirtexE	-
Virtex4	LVDCI_15
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVC MOS15\_DCI\_DV2**

**Low-Voltage Complementary Metal-Oxide Semiconductor (1.5 Volts) with Digitally Controlled Impedance technology supporting controlled impedance drivers with half-impedance**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVDCI_DV2_15
Spartan3E	-
Virtex	-
Virtex2	LVDCI_DV2_15
Virtex2p	LVDCI_DV2_15
VirtexE	-
Virtex4	LVDCI_DV2_15
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVC MOS18****Low-Voltage Complementary Metal-Oxide Semiconductor (1.8 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	1.8 V
Cyclone2	1.8 V
Stratix	1.8 V
Stratix2	1.8 V
StratixGX	1.8 V
Max2	1.8 V
Max3000a	-
Max7000b	1.8 V
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	LVC MOS18
Spartan3	LVC MOS18
Spartan3E	LVC MOS18
Virtex	-
Virtex2	LVC MOS18
Virtex2p	LVC MOS18
VirtexE	LVC MOS18
Virtex4	LVC MOS18
CoolRunner2	LVC MOS18
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	LVC MOS18
ECP	LVC MOS18

**LVCMOS18\_DCI****Low-Voltage Complementary Metal-Oxide Semiconductor (1.8 Volts) with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVDCI_18
Spartan3E	-
Virtex	-
Virtex2	LVDCI_18
Virtex2p	LVDCI_18
VirtexE	-
Virtex4	LVDCI_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-



**LVC MOS18\_DCI\_DV2**

**Low-Voltage Complementary Metal-Oxide Semiconductor (1.8 Volts) with Digitally Controlled Impedance technology supporting controlled impedance drivers with half-impedance**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVDCI_DV2_18
Spartan3E	-
Virtex	-
Virtex2	LVDCI_DV2_18
Virtex2p	LVDCI_DV2_18
VirtexE	-
Virtex4	LVDCI_DV2_18
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVC MOS25****Low-Voltage Complementary Metal-Oxide Semiconductor (2.5 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	2.5 V
Cyclone2	2.5 V
Stratix	2.5 V
Stratix2	2.5 V
StratixGX	2.5 V
Max2	2.5 V
Max3000a	2.5 V
Max7000b	2.5 V
Max7000ae	2.5 V
Max7000s	-
Spartan2	LVC MOS2
Spartan2E	LVC MOS2
Spartan3	LVC MOS25
Spartan3E	LVC MOS25
Virtex	LVC MOS2
Virtex2	LVC MOS25
Virtex2p	LVC MOS25
VirtexE	LVC MOS2
Virtex4	LVC MOS25
CoolRunner2	LVC MOS25
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	LVC MOS25
Xc9500XV	LVC MOS2
ProAsicPlus	LVC MOS25
EC	LVC MOS25
ECP	LVC MOS25

**LVCMOS25\_DCI****Low-Voltage Complementary Metal-Oxide Semiconductor (2.5 Volts) with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVDCI_25
Spartan3E	-
Virtex	-
Virtex2	LVDCI_25
Virtex2p	LVDCI_25
VirtexE	-
Virtex4	LVDCI_25
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVC MOS25\_DCI\_DV2**

**Low-Voltage Complementary Metal-Oxide Semiconductor (2.5 Volts) with Digitally Controlled Impedance technology supporting controlled impedance drivers with half-impedance**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVDCI_DV2_25
Spartan3E	-
Virtex	-
Virtex2	LVDCI_DV2_25
Virtex2p	LVDCI_DV2_25
VirtexE	-
Virtex4	LVDCI_DV2_25
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVC MOS33****Low-Voltage Complementary Metal-Oxide Semiconductor (3.3 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	LVC MOS
Cyclone2	LVC MOS
Stratix	LVC MOS
Stratix2	LVC MOS
StratixGX	LVC MOS
Max2	LVC MOS
Max3000a	LVC MOS
Max7000b	LVC MOS
Max7000ae	LVC MOS
Max7000s	LVC MOS
Spartan2	-
Spartan2E	-
Spartan3	LVC MOS33
Spartan3E	LVC MOS33
Virtex	-
Virtex2	LVC MOS33
Virtex2p	LVC MOS33
VirtexE	-
Virtex4	LVC MOS33
CoolRunner2	LVC MOS33
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	LVC MOS33
ECP	LVC MOS33

**LVCMOS33\_DCI****Low-Voltage Complementary Metal-Oxide Semiconductor (3.3 Volts) with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVDCI_33
Spartan3E	-
Virtex	-
Virtex2	LVDCI_33
Virtex2p	LVDCI_33
VirtexE	-
Virtex4	LVDCI_33
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVC MOS33\_DCI\_DV2**

**Low-Voltage Complementary Metal-Oxide Semiconductor (3.3 Volts) with Digitally Controlled Impedance technology supporting controlled impedance drivers with half-impedance**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVDCI_DV2_33
Spartan3E	-
Virtex	-
Virtex2	LVDCI_DV2_33
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVDS****Low Voltage Differential Signaling**

<b>Device</b>	<b>Value</b>
Cyclone	LVDS
Cyclone2	LVDS
Stratix	LVDS
Stratix2	LVDS
StratixGX	LVDS
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	LVDS
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	LVDS
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	LVDS25
ECP	LVDS25



**LVDS25\_DCI****Low Voltage Differential Signaling (2.5 Volts) with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVDS_25_DCI
Spartan3E	-
Virtex	-
Virtex2	LVDS_25_DCI
Virtex2p	LVDS_25_DCI
VirtexE	-
Virtex4	LVDS_25_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVDS33****Low Voltage Differential Signaling (3.3 Volts)**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	LVDS_33
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVDS33\_DCI****Low Voltage Differential Signaling (3.3 Volts) with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	LVDS_33_DCI
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVDS\_DT****Low Voltage Differential Signaling with Differential Termination**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	LVDS_25_DT
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVDSEXT25****Extended Low Voltage Differential Signaling (2.5 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVDSEXT_25
Spartan3E	-
Virtex	-
Virtex2	LVDSEXT_25
Virtex2p	LVDSEXT_25
VirtexE	-
Virtex4	LVDSEXT_25
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVDSEXT25\_DCI****Extended Low Voltage Differential Signaling (2.5 Volts) with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVDSEXT_25_DCI
Spartan3E	-
Virtex	-
Virtex2	LVDSEXT_25_DCI
Virtex2p	LVDSEXT_25_DCI
VirtexE	-
Virtex4	LVDSEXT_25_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVDSEXT25\_DT****Extended Low Voltage Differential Signaling (2.5 Volts) with Differential Termination**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	LVDSEXT_25_DT
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVDSEXT33****Extended Low Voltage Differential Signaling (3.3 Volts)**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	LVDSEXT_33
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-



**LVDSEXT33\_DCI****Extended Low Voltage Differential Signaling (3.3 Volts) with Digitally Controlled Impedance technology**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	LVDSEXT_33_DCI
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVPECL****Low-Voltage Positive Emitter-Coupled Logic**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	Differential LVPECL
Stratix	Differential LVPECL
Stratix2	Differential LVPECL
StratixGX	Differential LVPECL
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	LVPECL
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	LVPECL_33
Virtex2p	-
VirtexE	LVPECL
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	LVPECL
EC	LVPECL33
ECP	LVPECL33

**LVPECL25****Low-Voltage Positive Emitter-Coupled Logic (2.5 Volts)**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	LVPECL_25
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	LVPECL_25
VirtexE	-
Virtex4	LVPECL_25
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVTTTL15****Low-Voltage Transistor-Transistor Logic (1.5 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	1.5 V
StratixGX	1.5 V
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVTTTL18****Low-Voltage Transistor-Transistor Logic (1.8 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	1.8 V
Cyclone2	1.8 V
Stratix	1.8 V
Stratix2	1.8 V
StratixGX	1.8 V
Max2	1.8 V
Max3000a	-
Max7000b	1.8 V
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVTTTL25****Low-Voltage Transistor-Transistor Logic (2.5 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	2.5 V
Cyclone2	2.5 V
Stratix	2.5 V
Stratix2	2.5 V
StratixGX	2.5 V
Max2	2.5 V
Max3000a	2.5 V
Max7000b	2.5 V
Max7000ae	2.5 V
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**LVTTTL33****Low-Voltage Transistor-Transistor Logic (3.3 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	LVTTTL
Cyclone2	LVTTTL
Stratix	LVTTTL
Stratix2	LVTTTL
StratixGX	LVTTTL
Max2	LVTTTL
Max3000a	LVTTTL
Max7000b	LVTTTL
Max7000ae	LVTTTL
Max7000s	LVTTTL
Spartan2	LVTTTL
Spartan2E	LVTTTL
Spartan3	LVTTTL
Spartan3E	LVTTTL
Virtex	LVTTTL
Virtex2	LVTTTL
Virtex2p	LVTTTL
VirtexE	LVTTTL
Virtex4	LVTTTL
CoolRunner2	LVTTTL
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	LVTTTL
ProAsicPlus	LVTTTL
EC	LVTTTL33
ECP	LVTTTL33

**MINILVDS25****Mini Low Voltage Differential Signaling with Differential Termination (2.5 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	mini-LVDS
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	MINI_LVDS_25
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-



**PCI33\_3****Peripheral Component Interconnect (33 MHz, 3.3 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	3.3-V PCI
Cyclone2	3.3-V PCI
Stratix	3.3-V PCI
Stratix2	3.3-V PCI
StratixGX	3.3-V PCI
Max2	3.3-V PCI
Max3000a	3.3-V PCI
Max7000b	3.3-V PCI
Max7000ae	3.3-V PCI
Max7000s	-
Spartan2	PCI33_3
Spartan2E	PCI33_3
Spartan3	PCI33_3
Spartan3E	PCI33_3
Virtex	PCI33_3
Virtex2	PCI33_3
Virtex2p	PCI33_3
VirtexE	PCI33_3
Virtex4	PCI33_3
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	PCI
EC	PCI33
ECP	PCI33

**PCI33\_5****Peripheral Component Interconnect (33 MHz, 5 Volts)**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	PCI33_5
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	PCI33_5
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	PCI
EC	-
ECP	-

**PCI66****Peripheral Component Interconnect (66 MHz, 3.3 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	3.3-V PCI
Cyclone2	3.3-V PCI
Stratix	3.3-V PCI
Stratix2	3.3-V PCI
StratixGX	3.3-V PCI
Max2	3.3-V PCI
Max3000a	3.3-V PCI
Max7000b	3.3-V PCI
Max7000ae	3.3-V PCI
Max7000s	-
Spartan2	PCI66_3
Spartan2E	PCI66_3
Spartan3	PCI66_3
Spartan3E	PCI66_3
Virtex	PCI66_3
Virtex2	PCI66_3
Virtex2p	PCI66_3
VirtexE	PCI66_3
Virtex4	PCI66_3
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	PCI
EC	PCI33
ECP	PCI33

**PCIX\_3****Peripheral Component Interconnect - X (3.3 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	3.3-V PCI-X
Stratix	3.3-V PCI-X
Stratix2	3.3-V PCI-X
StratixGX	3.3-V PCI-X
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	PCIX66_3
Spartan3	-
Spartan3E	PCIX
Virtex	-
Virtex2	PCIX
Virtex2p	PCIX
VirtexE	PCIX66_3
Virtex4	PCIX
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**PCML****Pseudo Current Mode Logic**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	3.3-V PCML
Stratix2	-
StratixGX	3.3-V PCML
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**PCML15****Pseudo Current Mode Logic (1.5 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	1.5-V PCML
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**RSDS25****Reduced Swing Differential Signaling (2.5 Volts)**

<b>Device</b>	<b>Value</b>
Cyclone	RSDS
Cyclone2	RSDS
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	RSDS_25
Spartan3E	RSDS_25
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	RSDS_25
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	RSDS
ECP	RSDS

**SSTL2I****Stub Series Terminated Logic (2.5 Volts) Class I**

<b>Device</b>	<b>Value</b>
Cyclone	SSTL-2 CLASS I
Cyclone2	SSTL-2 CLASS I
Stratix	SSTL-2 CLASS I
Stratix2	SSTL-2 CLASS I
StratixGX	SSTL-2 CLASS I
Max2	-
Max3000a	-
Max7000b	SSTL-2 CLASS I
Max7000ae	-
Max7000s	-
Spartan2	SSTL2_I
Spartan2E	SSTL2_I
Spartan3	SSTL2_I
Spartan3E	SSTL2_I
Virtex	SSTL2_I
Virtex2	SSTL2_I
Virtex2p	SSTL2_I
VirtexE	SSTL2_I
Virtex4	SSTL2_I
CoolRunner2	SSTL2_I
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	SSTL25_I
ECP	SSTL25_I



**SSTL2I\_DCI****Stub Series Terminated Logic (2.5 Volts) Class I with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	SSTL2_I_DCI
Spartan3E	-
Virtex	-
Virtex2	SSTL2_I_DCI
Virtex2p	SSTL2_I_DCI
VirtexE	-
Virtex4	SSTL2_I_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**SSTL2II****Stub Series Terminated Logic (2.5 Volts) Class II**

<b>Device</b>	<b>Value</b>
Cyclone	SSTL-2 CLASS II
Cyclone2	SSTL-2 CLASS II
Stratix	SSTL-2 CLASS II
Stratix2	SSTL-2 CLASS II
StratixGX	SSTL-2 CLASS II
Max2	-
Max3000a	-
Max7000b	SSTL-2 CLASS II
Max7000ae	-
Max7000s	-
Spartan2	SSTL2_II
Spartan2E	SSTL2_II
Spartan3	SSTL2_II
Spartan3E	-
Virtex	SSTL2_II
Virtex2	SSTL2_II
Virtex2p	SSTL2_II
VirtexE	SSTL2_II
Virtex4	SSTL2_II
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	SSTL25_II
ECP	SSTL25_II

**SSTL2II\_DCI****Stub Series Terminated Logic (2.5 Volts) Class II with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	SSTL2_II_DCI
Spartan3E	-
Virtex	-
Virtex2	SSTL2_II_DCI
Virtex2p	SSTL2_II_DCI
VirtexE	-
Virtex4	SSTL2_II_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**SSTL3I****Stub Series Terminated Logic (3.3 Volts) Class I**

<b>Device</b>	<b>Value</b>
Cyclone	SSTL-3 Class I
Cyclone2	-
Stratix	SSTL-3 Class I
Stratix2	-
StratixGX	SSTL-3 Class I
Max2	-
Max3000a	-
Max7000b	SSTL-3 Class I
Max7000ae	-
Max7000s	-
Spartan2	SSTL3_I
Spartan2E	SSTL3_I
Spartan3	-
Spartan3E	-
Virtex	SSTL3_I
Virtex2	SSTL3_I
Virtex2p	-
VirtexE	SSTL3_I
Virtex4	-
CoolRunner2	SSTL3_I
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	SSTL33_I
ECP	SSTL33_I

**SSTL3I\_DCI****Stub Series Terminated Logic (3.3 Volts) Class I with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	SSTL3_I_DCI
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**SSTL3II****Stub Series Terminated Logic (3.3 Volts) Class II**

<b>Device</b>	<b>Value</b>
Cyclone	SSTL-3 Class II
Cyclone2	-
Stratix	SSTL-3 Class II
Stratix2	-
StratixGX	SSTL-3 Class II
Max2	-
Max3000a	-
Max7000b	SSTL-3 Class II
Max7000ae	-
Max7000s	-
Spartan2	SSTL3_II
Spartan2E	SSTL3_II
Spartan3	-
Spartan3E	-
Virtex	SSTL3_II
Virtex2	SSTL3_II
Virtex2p	-
VirtexE	SSTL3_II
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	SSTL33_II
ECP	SSTL33_II

**SSTL3II\_DCI****Stub Series Terminated Logic (3.3 Volts) Class II with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	SSTL3_II_DCI
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**SSTL18I****Stub Series Terminated Logic (1.8 Volts) Class I**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	SSTL-18 Class I
Stratix	SSTL-18 Class I
Stratix2	SSTL-18 Class I
StratixGX	SSTL-18 Class I
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	SSTL18_I
Spartan3E	SSTL18_I
Virtex	-
Virtex2	SSTL18_I
Virtex2p	SSTL18_I
VirtexE	-
Virtex4	SSTL18_I
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	SSTL18_I
ECP	SSTL18_I



**SSTL18I\_DCI****Stub Series Terminated Logic (1.8 Volts) Class I with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	SSTL18_I_DCI
Spartan3E	-
Virtex	-
Virtex2	SSTL18_I_DCI
Virtex2p	SSTL18_I_DCI
VirtexE	-
Virtex4	SSTL18_I_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**SSTL18II****Stub Series Terminated Logic (1.8 Volts) Class II**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	SSTL-18 Class II
Stratix	SSTL-18 Class II
Stratix2	SSTL-18 Class II
StratixGX	SSTL-18 Class II
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	SSTL18_II
Virtex2p	SSTL18_II
VirtexE	-
Virtex4	SSTL18_II
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**SSTL18II\_DCI****Stub Series Terminated Logic (1.8 Volts) Class II with Digitally Controlled Impedance technology**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	SSTL18_II_DCI
Virtex2p	SSTL18_II_DCI
VirtexE	-
Virtex4	SSTL18_II_DCI
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**TTL****Transistor-Transistor Logic**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	TTL
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	-
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**ULVDS25****Ultra Low Voltage Differential Signaling with Differential Termination (2.5 Volts)**

Device	Value
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	ULVDS_25
Spartan3E	-
Virtex	-
Virtex2	ULVDS_25
Virtex2p	ULVDS_25
VirtexE	-
Virtex4	ULVDS_25
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

**ULVDS25\_DT****Ultra Low Voltage Differential Signaling with Differential Termination (2.5 Volts)  
with Differential Termination**

<b>Device</b>	<b>Value</b>
Cyclone	-
Cyclone2	-
Stratix	-
Stratix2	-
StratixGX	-
Max2	-
Max3000a	-
Max7000b	-
Max7000ae	-
Max7000s	-
Spartan2	-
Spartan2E	-
Spartan3	-
Spartan3E	-
Virtex	-
Virtex2	-
Virtex2p	ULVDS_25_DT
VirtexE	-
Virtex4	-
CoolRunner2	-
CoolRunnerXpla3	-
Xc9500	-
Xc9500XL	-
Xc9500XV	-
ProAsicPlus	-
EC	-
ECP	-

## Revision History

Date	Version No.	Revision
22-Aug-2005	1.0	New document release
17-Aug-2011	-	Updated template.

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