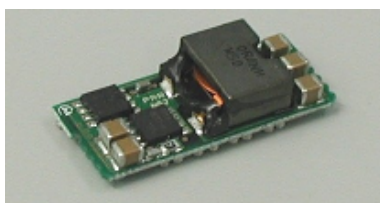


# Murata Manufacturing Co., Ltd

## Power Supply Reference Guide for XILINX® FPGAs



### Inside:

- Power Requirements of Xilinx Solutions in Typical Applications
- DC-DC Converter Selection Tables
- Reference Designs and List of Materials

Download data sheets for DC-DC Converters mentioned in this reference guide at <http://www.murata.com/power/fpga/xilinx/index.html>.

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# Power Requirements of Xilinx Solutions in Typical Applications

This information is intended to provide the designer with a general understanding of the power requirements of Xilinx FPGA families in typical applications. Simulation examples are shown in Appendix 1.

The number of logic gates, operating frequency and other factors affect the value of current consumption.

Please refer to the Xilinx Power Consumption Tools, available at

**www.xilinx.com/power**, for closer approximations specific to individual applications.

**\* Unless otherwise specified all ICCO estimates represent the total operating current contributions of all I/O banks on the FPGAs measured at 85°C ambient temperature.**

	Spartan™-3/3E/3L	Spartan™-IIE	Spartan™-II	Virtex™-5	Virtex™-4	Virtex-II Pro™	Virtex™-II
V <sub>CCINT</sub>	1.2V @0.2A-5A	1.8V @0.2A-1.5A	2.5V @0.2A-1A	1.0V @0.2A-15A	1.2V @0.2A-20A	1.5V @0.2A-20A	1.5V @0.2A-20A
V <sub>CCO</sub>	1.2V-3.3V @50mA-3A	1.5V-3.3V @50mA-0.5A	1.5V-3.3V @50mA-0.5A	1.2V-3.3V @50mA-5A	1.2V-3.3V @50mA-3A	1.5V-3.3V @50mA-3A	1.5V-3.3V @50mA-3A
V <sub>CCAUX</sub>	2.5V @50mA-0.3A	—	—	2.5V @50mA-0.7A	2.5V @50mA-0.7A	2.5V @50mA-0.3A	3.3V @50mA-0.3A
AV <sub>CCAUTX</sub>	—	—	—	—	1.2V @150mA	2.5V @60mA/MGT	—
AV <sub>CCAUXRX</sub>	—	—	—	—	1.2V @200mA	2.5V @35mA/MGT	—
AV <sub>TTX</sub>	—	—	—	—	1.2V-1.575V @50mA	1.8V-2.625V @15mA/MGT	—
AV <sub>TRX</sub>	—	—	—	—	1.0V-2.625V @15mA	1.8V-2.625V @30mA/MGT	—

## Cautionary Note:

1. These power requirement numbers are estimated using Xilinx power tools, and, these numbers represent specific applications or implementations of FPGAs.  
Users' specific applications may run at lower or higher power consumption levels.
2. Murata is happy to provide these estimates for use by customers as a guideline, however no guarantee is offered as to the accuracy of the numbers represented herein.

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# DC-DC Converter Selection Tables

## Selection Table for Spartan™-II/IE

**Table4. DC-DC Converter Selection Table for Spartan™-IE Device**

Xilinx				muRata Solutions	
Device	Type	Voltage	Current	Vin=3.0-5.5V	Vin=10.8-13.2V
XC2S50E	V <sub>CCINT</sub>	1.8V	0.2A-1.5A	MPD4S014S(1.3A/1A) MPD5S025S(1.6A/1.6A) MPDTY102S(2A)	MPD4S014S(1.3A/1A)
XC2S100E					
XC2S150E					
XC2S200E					
XC2S300E	V <sub>CCO</sub>	1.5V-3.3V	50mA-0.5A		
XC2S400E					
XC2S600E					

**Table5. DC-DC Converter Selection Table for Spartan™-II Device**

Xilinx				muRata Solutions	
Device	Type	Voltage	Current	Vin=3.0-5.5V	Vin=10.8-13.2V
XC2S15	V <sub>CCINT</sub>	2.5V	0.2A-1A	MPD4S014S(1.3A/1A) MPD5S025S(1.6A/1.6A) MPDTY102S(2A)	MPD4S014S(1.3A/1A)
XC2S30					
XC2S50					
XC2S100					
XC2S150	V <sub>CCO</sub>	1.5V-3.3V	50mA-0.5A		
XC2S200					

Note : The Xilinx devices' current requirements in these tables were calculated based on intensive design.  
Please refer to Appendix 1 for details.

Download data sheets for DC-DC Converters mentioned in this reference guide at <http://www.murata.com/power/fpga/xilinx/index.html>.

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# DC-DC Converter Selection Tables

## Selection Table for Virtex™-5

Table6. DC-DC Converter Selection Table for Virtex™-5 Device

Xilinx				muRata Solutions	
Device	Type	Voltage	Current	Vin=3.0-5.5V	Vin=10.8-13.2V
XC5VLX30 XC5VLX50 XC5VLX85 XC5VLX110 XC5VLX220 XC5VLX330	V <sub>CCINT</sub>	1.0V	0.2A-15A	MPDTY301S(7A) MPDTY302S(7A) MPDTY311S(16A) MPDTY312S(16A) MPDTY411S(7A) MPDTY412S(7A) MPDTH03050WAS(6A) MPDTH05050WAS(6A) MPDTH03060WAS(10A) MPDTH05060WAS(10A) MPDTH03010WAS(15A) MPDTH05010WAS(15A)	MPDTY303S(8A) MPDTH12050WAS(6A) MPDTH12060WAS(10A) MPDTH12010WAS(12A)
	V <sub>CCO</sub>	1.2V-3.3V	50mA-5A	MPD6S012S(3A) MPDTY102S(2A) MPDTY301S(7A) MPDTY302S(7A) MPDTY411S(7A) MPDTY412S(7A) MPDTH03050WAS(6A) MPDTH05050WAS(6A)	MPDTY303S(8A) MPDTH12050WAS(6A)
	V <sub>CCINT</sub> /V <sub>CCO</sub> with Large Load Transient	1.0V-3.3V	0.2A-15A	MPDRX002S(16A)	MPDRX004S(12A) MPDRX103S(12A) MPDRX104S(16A)

Note : The Xilinx devices' current requirements in these tables were calculated based on intensive design.  
Please refer to Appendix 1 for details.

Download data sheets for DC-DC Converters mentioned in this reference guide at <http://www.murata.com/power/fpga/xilinx/index.html>.

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