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Understanding [Embedded - FPGAs \(Field Programmable Gate Array\)](#)

Embedded - FPGAs, or Field Programmable Gate Arrays, are advanced integrated circuits that offer unparalleled flexibility and performance for digital systems. Unlike traditional fixed-function logic devices, FPGAs can be programmed and reprogrammed to execute a wide array of logical operations, enabling customized functionality tailored to specific applications. This reprogrammability allows developers to iterate designs quickly and implement complex functions without the need for custom hardware.

Applications of Embedded - FPGAs

The versatility of Embedded - FPGAs makes them indispensable in numerous fields. In telecommunications.

Details

Product Status	Active
Number of LABs/CLBs	-
Number of Logic Elements/Cells	-
Total RAM Bits	276480
Number of I/O	280
Number of Gates	1500000
Voltage - Supply	1.425V ~ 1.575V
Mounting Type	Surface Mount
Operating Temperature	-40°C ~ 100°C (TJ)
Package / Case	484-BGA
Supplier Device Package	484-FPBGA (23x23)
Purchase URL	https://www.e-xfl.com/product-detail/microchip-technology/a3pe1500-1fg484i

PLL Behavior at Brownout Condition

Microsemi recommends using monotonic power supplies or voltage regulators to ensure proper power-up behavior. Power ramp-up should be monotonic at least until VCC and VCCPLXL exceed brownout activation levels. The VCC activation level is specified as 1.1 V worst-case (see [Figure 2-1 on page 2-4](#) for more details).

When PLL power supply voltage and/or VCC levels drop below the VCC brownout levels ($0.75\text{ V} \pm 0.25\text{ V}$), the PLL output lock signal goes low and/or the output clock is lost. Refer to the "Power-Up/Down Behavior of Low Power Flash Devices" chapter of the [ProASIC3E FPGA Fabric User's Guide](#) for information on clock and lock recovery.

Internal Power-Up Activation Sequence

1. Core
2. Input buffers
3. Output buffers, after 200 ns delay from input buffer activation

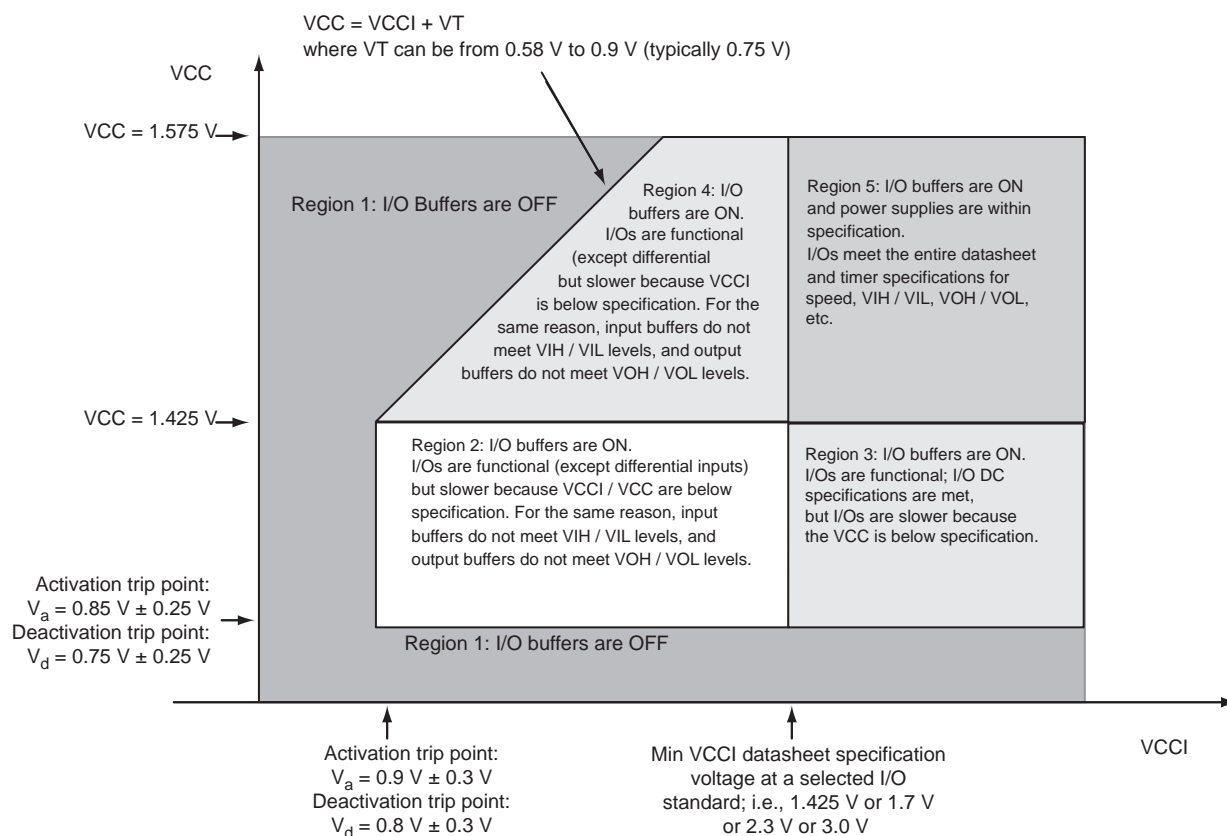


Figure 2-1 • I/O State as a Function of VCCI and VCC Voltage Levels

