July 25, 2011

PCN Number: 1111

PCN Change Level: Major

Subject: RT ProASIC3 Datasheet Updates

Dear Customer,

Microsemi has updated the Radiation-Tolerant ProASIC®3 Low Power Spaceflight Flash FPGAs datasheet from Advance to Production status. The latest revision can be downloaded here: http://www.actel.com/documents/RTPA3_DS.pdf.

Some of the major updates in this revision are listed below.

1. Device status:

   RT3PE600L and RT3PE3000L have moved to Production status with completed characterization on DC, timing, and power characteristics.

2. Radiation performance:

   Total ionizing dose (TID) improved from 15 Krad to the following:

   - 25 to 30 Krad with 10% propagation delay increase, dose rate 5 Krad/min
   - Up to 40 Krad with 10% propagation delay increase, dose rate < 1 Krad/min
   - Up to 55 Krad with 15% propagation delay increase, dose rate < 1 Krad/min

3. I/O DC output levels:

   - VOL and VOH for all I/O standards have been updated for operating in the following junction temperature (T_J) ranges:

     $-55°C < T_J \le 100°C$ and $100°C < T_J \le 125°C$

   - Drive strength for 3.3 V GTL and 2.5 V GTL I/O standards have been updated from 25 mA to 20 mA.

4. Quiescent supply current in different operating modes has been updated in Tables 2-6, 2-7, 2-8, 2-9, and 2-10.

5. Support for wide range core voltage was added; 3.3 V LVCMOS wide range and 1.2 V LVCMOS wide range I/O standards were added.

   A wide range operating core voltage VCCA can be selected for operation at any point in the nominal range of 1.2 V to 1.5 V, providing system designers flexibility for power supply options such as dual voltage, dynamic voltage/frequency scaling, and unregulated battery applications.

6. The Pin Descriptions chapter was added to the datasheet.

   The VPUMP recommendation was updated to 0 V during operation (non-programming) to optimize TID performance in spaceflight applications.

For a complete list of changes made in this revision of the RT ProASIC3 datasheet, refer to the List of Changes on page 5-1: http://www.actel.com/documents/RTPA3_DS.pdf.

If you have any questions, please contact Microsemi's SoC Products Group ITAR Technical Support at soc_tech_itar@microsemi.com.

Regards,

Microsemi Corporation

Table 1 •   Affected Part Numbers

RT3PE600L		
RT3PE600L-CG484B	RT3PE600L-LG484B	RT3PE600L-CQ256B
RT3PE600L-1CG484B	RT3PE600L-1LG484B	RT3PE600L-1CQ256B
RT3PE600L-CG484PROTO	RT3PE600L-LG484PROTO	RT3PE600L-CQ256PROTO
RT3PE600L-1CG484PROTO	RT3PE600L-1LG484PROTO	RT3PE600L-1CQ256PROTO
RT3PE3000L		
RT3PE3000L-CG484B	RT3PE3000L-1LG484PROTO	RT3PE3000L-LG896PROTO
RT3PE3000L-1CG484B	RT3PE3000L-CG896B	RT3PE3000L-1LG896PROTO
RT3PE3000L-CG484PROTO	RT3PE3000L-1CG896B	RT3PE3000L-CQ256B
RT3PE3000L-1CG484PROTO	RT3PE3000L-CG896PROTO	RT3PE3000L-1CQ256B
RT3PE3000L-LG484B	RT3PE3000L-1CG896PROTO	RT3PE3000L-CQ256PROTO
RT3PE3000L-1LG484B	RT3PE3000L-LG896B	RT3PE3000L-1CQ256PROTO
RT3PE3000L-LG484PROTO	RT3PE3000L-1LG896B	