March 11, 2013

Subject: PCN#01A-13 Notification of Changes to the iCE40 LP/HX Family Data Sheet

Dear Lattice Customer,

Lattice is providing this notification of changes to the iCE40^{TM} LP/HX Family Data Sheet.

<u>**Summary of the Changes**</u>

- Merged iCE40LP and iCE40HX product datasheets
- Added in depth architecture section
- Updated most performance specifications from typical to minimum or maximum
- Updated junction temperature basis
- Added commonly requested items such as:
  - Block performance
  - Power supply ramp rates
  - Maximum I/O frequency
  - Start-up and programming currents
  - Pin description and pin table section
- PLL out frequency changed from 533MHz to 275MHz
- Updated internal oscillator frequency
- Removed LVCMOS1.5 I/O
- Updated typical static I_{CC}

These changes are reflected in the iCE40 LP/HX Family Data Sheet released in March 2013 (DS1040 Version 02.1, released in March 2013).

<u>**Affected Products**</u>

The Ordering Part Numbers (OPNs) affected by this PCN are listed in Exhibit "A" (also available in an Excel spreadsheet here). This PCN also affects any custom devices (i.e. factory programmed, special test, tape and reel, non-standard speed grade and package, etc.), which are derived from any of the devices listed in the table.

<u>**Datasheet Specifications**</u>

The revised iCE40 LP/HX Family Data Sheet (DS1040 Version 02.1, released in March 2013) reflects these changes and available on Lattice website.

<u>**PCN Timing**</u>

These datasheet changes are effective immediately and retroactively.

Response

No customer response is required. If customers have questions about the datasheet changes described above, they should contact their local field support for further assistance.

Lattice PCNs are available on the Lattice PCN web page. Please sign up to receive e-mail PCN alerts by registering here. If you already have a Lattice web account and wish to receive PCN alerts, you can do so by logging into your account and making edits to your subscription options.

Contact

If you have any questions or require additional information, please contact pcn@latticesemi.com.

Sincerely,

Lattice Semiconductor PCN Administration

Exhibit A – Affected Devices

Device	Ordering Part Number	Package
iCE40LP1K	iCE40LP1K-CB121	121-csBGA
	iCE40LP1K-CM121	121-ucBGA
	iCE40LP1K-CM36	36-ucBGA (Tray Carrier)
	iCE40LP1K-CM36TR	36-ucBGA (Tape & Reel Carrier)
	iCE40LP1K-CM49	49-ucBGA (Tray Carrier)
	iCE40LP1K-CM49TR	49-ucBGA (Tape & Reel Carrier)
	iCE40LP1K-CM81	81-ucBGA (Tray Carrier)
	iCE40LP1K-CM81TR	81-ucBGA (Tape & Reel Carrier)
	iCE40LP1K-CB81	81-csBGA
	iCE40LP1K-QN84	84-QFN
iCE40LP4K	iCE40LP4K-CM121	121-ucBGA
	iCE40LP4K-CM225	225-ucBGA
	iCE40LP4K-CM81	81-ucBGA (Tray Carrier)
	iCE40LP4K-CM81TR	81-ucBGA (Tape & Reel Carrier)
iCE40LP8K	iCE40LP8K-CM121	121-ucBGA
	iCE40LP8K-CM225	225-ucBGA
iCE40HX1K	iCE40HX1K-VQ100	100-VQFP
	iCE40HX1K-CB132	132-csBGA
	iCE40HX1K-TQ144	144-TQFP
iCE40HX4K	iCE40HX4K-CB132	132-csBGA
	iCE40HX4K-TQ144	144-TQFP
iCE40HX8K	iCE40HX8K-CB132	132-csBGA
	iCE40HX8K-CM225	225-ucBGA
	iCE40HX8K-CT256	256-caBGA

Note: This PCN also affects any custom devices (i.e. factory programmed, special test, tape and reel, non-standard speed grade and package, etc.), which are derived from any of the devices listed above.