



January 4, 2008

Subject: PCN# 01A-08, 90-Day Notification of Intent to Utilize an Alternate Qualified Assembly Site and an Alternate Qualified Material Set for Select Plastic Quad Flat Pack and Shrink Quad Flat Pack Devices

Dear Lattice Customers:

In accordance with our Product Change Notification (PCN) policy, Lattice is providing this 90-day notification of our intent to utilize an alternate qualified assembly site and/or alternate qualified material set for select Plastic Quad Flat Pack (PQFP) and Shrink Quad Flat Pack (SQFP) devices.

The Malaysian facility of Advanced Semiconductor Engineering (ASE) has been a primary source of Lattice devices for many years. In an effort to standardize the material set for these popular packages and to expand the manufacturing capacity, Lattice will now use ASE Malaysia for select PQFP and SQFP packaged devices. ASE Malaysia utilizes industry standard raw material, assembly and test processes. These material sets meet all external package dimension, footprints and specifications as published on the Lattice web site (www.latticesemi.com).

AFFECTED DEVICES AND APPLICABLE CHANGES

The affected devices and applicable changes are summarized in Exhibit A.

ALTERNATE QUALIFIED MATERIAL SET

The complete material set used is described in Exhibit B.

QUALIFICATION DATA

Reliability testing for the qualification of these ASE Malaysia manufactured devices is complete. A summary of the qualification data is attached in Exhibit C.

DATA SHEET SPECIFICATIONS

This PCN has no impact on any data sheet specifications.

CONVERSION TIMING

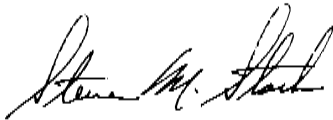
Conversion timing for this PCN is 90 days from the date of this Notice; however, device specific conversions will be driven by market demand. Initial products with this new material set from ASE Malaysia will ship no earlier than April 4, 2008. Should samples be required to complete evaluation of this PCN, such sample requests must be received **no later than February 4, 2008.**

CONVERSION TIMING – SUMMARY

- **Sample Request Cut-off Date:** **February 4, 2008**
- **PCN Expiration Date:** **April 4, 2008**

If you have any questions or require additional information, please contact your local Lattice Sales Representative or please feel free to call me at (503) 268-8386.

Regards,



Steven M. Stark
Director, Product Marketing

EXHIBIT "A" – AFFECTED DEVICE LIST

Device Family	Product Line	Package Code		Package Type	Leads	Alternate Qualified Assembly Site	Alternate Qualified Material Set
		Standard	Pb-Free				
LatticeEC™ LatticeECP™	LFEC1E	Q208		PQFP	208		✓
			QN208			✓	✓
	LFEC3E LFEC6E LFECP6E LFEC10E LFECP10E	Q208		PQFP	208	✓	✓
			QN208			✓	✓
		Q208				✓	✓
LatticeECP2™ LatticeECP2 "S-Series"	LFE2-12E	Q208		PQFP	208	✓	✓
	LFE2-12SE		QN208			✓	✓
	LFE2-20E	Q208				✓	✓
	LFE2-20SE		QN208			✓	✓
LatticeXP™	LFXP3C/E	Q208		PQFP	208	✓	✓
			QN208			✓	✓
	LFXP6C/E	Q208		PQFP	208	✓	✓
ORCA® 2 Series	OR2T15A	S208		SQFP	208	✓	✓
	OR2T26A		SN208 ¹			✓	✓
ORCA 3 Series	OR3T20	S208		SQFP	208		✓
	OR3T30	S208				✓	✓
			SN208 ¹				✓
	OR3T55	S208				✓	✓
	OR3T80	S208				✓	✓
ispGDX® A	ispGDX120A	Q160		PQFP	160		✓
	ispGDX160A	Q208				✓	✓
ispGDXV™	ispGDX160V	Q208		PQFP	208	✓	✓
			QN208 ¹			✓	✓
ispGDXVA	ispGDX160VA	Q208		PQFP	208	✓	✓
ispLSI® 1000	ispLSI 1048	Q		PQFP	120		✓
ispLSI 1000C	ispLSI 1048C	Q		PQFP	128		✓
ispLSI 1000E	ispLSI 1048E	Q		PQFP	128	✓	✓
			QN			✓	✓
ispLSI 1000EA	ispLSI 1048EA	Q128		PQFP	128		✓
ispLSI 2000A	ispLSI 2096A	Q128		PQFP	128	✓	✓
			QN128			✓	✓
	ispLSI 2128A	Q160		PQFP	160	✓	✓
ispLSI 2000E	ispLSI 2096E	Q128		PQFP	128	✓	✓
			QN128 ¹			✓	✓
ispLSI 2000VE	ispLSI 2128VE	Q160		PQFP	160		✓
ispLSI 3000	ispLSI 3320	Q		PQFP	208		✓
ispLSI 3000A	ispLSI 3256A	Q		PQFP	160		✓
ispLSI 5000VA	ispLSI 5256VA	Q208		PQFP	208	✓	✓
			QN208 ¹			✓	✓
	ispLSI 5384VA	Q208		PQFP	208	✓	✓
ispXPLD®	LC5512MC/B/V	Q208		PQFP	208	✓	✓
			QN208			✓	✓
ispMACH® 4A3	M4A3-128	Y		PQFP	100		✓
	M4A3-256	Y				✓	✓
			YN				✓
	M4A3-384	Y				✓	✓
ispMACH 4A5	M4A5-128	Y		PQFP	100	✓	✓
			YN			✓	✓
	M4A5-256	Y		PQFP	208	✓	✓

1. Only available for customer specific Pb-free support.

Note: This PCN affects all speed and temperature grades for the device families listed above. Please refer to the device family data sheets on the Lattice web site at <http://www.latticesemi.com> for the standard OPNs. This PCN also affects any custom devices (i.e. factory programmed, special test, tape and reel, non-standard speed grade, etc.), which are derived from any of the devices listed above.

EXHIBIT “A” – AFFECTED DEVICE LIST (Cont’d)

Device Family	Product Line	Package Code		Package Type	Leads	Alternate Qualified Assembly Site	Alternate Qualified Material Set
		Standard	Pb-Free				
ispMACH 5	M5-320	Y		PQFP	208		✓
	M5-384	Y		PQFP	208		✓
	M5-512	Y		PQFP	208		✓
	M5-128 /1	Y		PQFP	100		✓
		Y		PQFP	160		✓
	M5-192 /1	Y		PQFP	160		✓
	M5-256 /1	Y		PQFP	160		✓
Y			PQFP	208		✓	
ispMACH 5LV	M5LV-128	Y		PQFP	160		✓
	M5LV-256	Y		PQFP	100		✓
		Y		PQFP	160		✓
		Y		PQFP	208		✓
	M5LV-320	Y		PQFP	160		✓
		Y		PQFP	208		✓
	M5LV-384	Y		PQFP	160		✓
		Y		PQFP	208		✓
	M5LV-512	Y		PQFP	160		✓
		Y		PQFP	208		✓

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EXHIBIT “B” – ASE Malaysia Alternate Qualified Material Set

	CURRENT					ALTERNATE QUALIFIED				
	Assembly Site	Material Set				Assembly Site	Material Set			
		Die Attach	Wire	Mold Compound	Plating		Die Attach	Wire	Mold Compound	Plating
Standard	Amkor Korea	8361J	Au (Gold)	MP8000CH4	SnPb	ASE Malaysia	8361J	Au (Gold)	G700	SnPb
	Amkor Philippines	3230		G700						
	ASE Malaysia	84-1LMISR4		6600H						
	AIT Indonesia	CRM1076NS		G700						
Pb-Free	Amkor Korea	3230	Au (Gold)	G700	Sn					Sn
	Amkor Philippines									
	AIT Indonesia									

EXHIBIT "C" – Qualification Data



ASEM 208 PQFP Standard and Pb-free Package QUALIFICATION SUMMARY

Results

HTSL (150°C)

<u>Product</u>	<u>Lot#</u>	<u>Package</u>	<u>Quantity</u>	<u>1000 Hrs</u>
ECP2-12	LOT#1	208 PQFP	45	0
ECP2-12	LOT#2	208 PQFP	45	0
ECP2-12	LOT#3	208 PQFP	45	0

Surface Mount Preconditioning

MSL 3, 192Hrs 30°C/60% RH soak, 3 passes through convection oven at 245°C (Pb-Free)

<u>Product</u>	<u>Lot#</u>	<u>Package</u>	<u>Quantity</u>	<u>Result</u>
ECP2-12	LOT#1	208 PQFP	45	0
ECP2-12	LOT#2	208 PQFP	45	0
ECP2-12	LOT#3	208 PQFP	45	0
5384VA	LOT#4	208 PQFP w/HS	81	0
5384VA	LOT#5	208 PQFP w/HS	81	0
ECP2-20	LOT#6	208 PQFP	45	0
ECP2-20	LOT#7	208 PQFP	45	0

Temperature Cycles (-55°C to 125°C)

<u>Product</u>	<u>Lot#</u>	<u>Package</u>	<u>Quantity</u>	<u>1000 Cycles</u>
5384VA	LOT#4	208 PQFP w/HS	45	0
5384VA	LOT#5	208 PQFP w/HS	45	0
ECP2-20	LOT#6	208 PQFP	45	0
ECP2-20	LOT#7	208 PQFP	45	0

UnBiased HAST (130°C, 33.3 psia, 85% R.H.)

<u>Product</u>	<u>Lot#</u>	<u>Package</u>	<u>Quantity</u>	<u>96 Hrs</u>
5384VA	LOT#4	208 PQFP w/HS	36	0
5384VA	LOT#5	208 PQFP w/HS	36	0

Biased HAST (130°C, 33.3 psia, 85% R.H., Vcc max)

<u>Product</u>	<u>Lot#</u>	<u>Package</u>	<u>Quantity</u>	<u>96 Hrs</u>
ECP2-12	LOT#1	208 PQFP	45	0
ECP2-12	LOT#2	208 PQFP	45	0
ECP2-12	LOT#3	208 PQFP	45	0

Results Cont'd**Surface Mount Preconditioning**

MSL 3, 192Hrs 30°C/60% RH soak, 3 passes through convection oven at 225°C (Standard)

<u>Product</u>	<u>Lot#</u>	<u>Package</u>	<u>Quantity</u>	<u>Result</u>
OR3T80	LOT#8	208 PQFP w/HS	42	0
OR3T80	LOT#9	208 PQFP w/HS	45	0

Temperature Cycles (-55°C to 125°C)

<u>Product</u>	<u>Lot#</u>	<u>Package</u>	<u>Quantity</u>	<u>1000 Cycles</u>
OR3T80	LOT#8	208 PQFP w/HS	42	0
OR3T80	LOT#9	208 PQFP w/HS	45	0

The ispLSI 5384VA and OR3T80 in the 208 LD PQFP with the Heat spreader and the LFCEP2-12E and LFCEP2-20E in the 208 PQFP were the qualification vehicles for this package type.