

Date Created : 2008/08/05  
Date Issued On : 2008/10/03  
PCN# : Q3083202

DESIGN/PROCESS CHANGE NOTIFICATION -- FINAL

This is to inform you that a design and/or process change will be made to the following product(s). This notification is for your information and concurrence.

If you require data or samples to qualify this change, please contact **Fairchild Semiconductor within 30 days of receipt of this notification.**

Updated process quality documentation, such as FMEAs and Control Plans, are available for viewing upon request.

If you have any questions concerning this change, please contact:

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Implementation of change:

Expected 1st Device Shipment Date: 2009/01/02

Earliest Year/Work Week of Changed Product: 0901

Change Type Description: Die Attach Material, Mold Compound

Description of Change (From): Fairchild's Micropak packages currently assembled at Hana-Ayutthaya using non-green mold compound and substrate materials.

Description of Change (To): Green, Halogen Free RoHS compliant packages. The Micropak packages assembled at Hana-Ayutthaya will be Green with the changes to mold compound and the substrate. (Note: Two mold compounds have been qualified to support the change to green materials and based on performance, can be interchanged.) Also refer to the tables below for comparisons of this change.

Reason for Change : Green initiative by Fairchild Semiconductor. Fairchild Semiconductor is dedicated to being a good corporate citizen. The reference material changes have been made to provide a Full Green (Halogen Free Flame Retardant) package. For additional details on the corporate wide green initiative please visit our Web site at:

<http://www.fairchildsemi.com/company/green/index.html>. Package outline drawings of the Micropak packages will remain unchanged. Green products will be fully compliant to all published datasheet specifications and will be interchangeable with current non-green product. Quality and Reliability will remain at the highest standards already demonstrated with Fairchild existing products.

Qual/REL Plan Numbers : Q20070331

Qualification :

Attached are the Reliability Test results to qualify the Green conversion of the Micropak

package assembled at Hana-Ayutthaya.

Change From

Assembly Site	Hana-Ayutthaya, Thailand
Substrate	BT CCL-HL832TF with NiPdAu plating
Die Attach	Die Attach Film, LE5000, LE5030
Wire	0.8mils Au
Mold Compound	HC-100-XG-BM
Lead Finish	NiAu

Change To

Assembly Site	Hana-Ayutthaya, Thailand
Substrate	BT CCL-HL832NXA with NiPdAu plating
Die Attach	Die Attach Film, LE5003
Wire	0.8mils Au
Mold Compound	Nitto GE-100-LFCG Alternate Mold: Sumitomo EME-G750L
Lead Finish	NiAu

### Results/Discussion for Qual Plan Number - Q20070331

Test: (Autoclave)   Conditions: 100%RH, 121C   Standard: JESD22-A102				
Lot	Device	Setpoint	Result	Failure Code
Q20070331AAACLVB	FSA2257L10X	96-HOURS	0/77	
Q20070331BAACLVB	NC7SZ125L6X	96-HOURS	0/77	
Q20070331CAACLVB	FHP3131IL6X	96-HOURS	0/77	
Q20070331DAACLVB	NC7SZ74L8X	96-HOURS	0/77	
Test: (C Scanning Acoustical Microscope)   Conditions:   Standard:				
Lot	Device	Setpoint	Result	Failure Code
Q20070331AACSAM1B	FSA2257L10X		0/10	
Q20070331AACSAM2B			0/10	
Q20070331BACSAM1B	NC7SZ125L6X		0/10	
Q20070331BACSAM2B			0/10	
Q20070331CACSAM1B	FHP3131IL6X		0/10	
Q20070331CACSAM2B			0/10	
Q20070331DACSAM1B	NC7SZ74L8X		0/10	
Q20070331DACSAM2B			0/10	
Test: (Construction Analysis)   Conditions:   Standard:				
Lot	Device	Setpoint	Result	Failure Code
Q20070331AACONSTB	FSA2257L10X		0/10	
Q20070331BACONSTB	NC7SZ125L6X		0/10	
Q20070331CACONSTB	FHP3131IL6X		0/10	
Q20070331DACONSTB	NC7SZ74L8X		0/10	
Test: (Flammability Certificate (3))   Conditions:   Standard: UL94-0				
Lot	Device	Setpoint	Result	Failure Code
Q20070331AAFLAMB	FSA2257L10X		0/1	
Q20070331BAFLAMB	NC7SZ125L6X		0/1	
Q20070331CAFLAMB	FHP3131IL6X		0/1	
Q20070331DAFLAMB	NC7SZ74L8X		0/1	
Test: (High Temperature Storage Life)   Conditions: 150C   Standard: JESD22-A103				
Lot	Device	Setpoint	Result	Failure Code
Q20070331AAHTSLB		168-HOURS	0/77	
		1000-HOURS	0/77	
Q20070331BAHTSLB	NC7SZ125L6X	168-HOURS	0/77	
		1000-HOURS	0/77	
Q20070331CAHTSLB	FHP3131IL6X	168-HOURS	0/77	
		1000-HOURS	0/77	
Q20070331DAHTSLB	NC7SZ74L8X	168-HOURS	0/77	
		1000-HOURS	0/77	
Test: (Highly Accelerated Stress Test)   Conditions: 85%RH, 110C, 0V   Standard: JESD22-A110				
Lot	Device	Setpoint	Result	Failure Code
Q20070331AAHAST2B	FSA2257L10X	264-HOURS	0/45	

Q20070331BAHAST2B	NC7SZ125L6X	264-HOURS	0/45	
Q20070331CAHAST2B	FHP3131L6X	264-HOURS	0/45	
Q20070331DAHAST2B	NC7SZ74L8X	264-HOURS	0/45	
<b>Test: (Physical Dimensions)   Conditions:   Standard: JESD22-B100</b>				
Lot	Device	Setpoint	Result	Failure Code
Q20070331AAPHYDB	FSA2257L10X		0/5	
Q20070331BAPHYDB	NC7SZ125L6X		0/5	
Q20070331CAPHYDB	FHP3131L6X		0/5	
Q20070331DAPHYDB	NC7SZ74L8X		0/5	
<b>Test: (Precondition)   Conditions:   Standard: JESD22-A113</b>				
Lot	Device	Setpoint	Result	Failure Code
Q20070331AAPCNL1AB	FSA2257L10X		0/353	
Q20070331BAPCNL1AB	NC7SZ125L6X		0/353	
Q20070331CAPCNL1AB	FHP3131L6X		0/353	
Q20070331DAPCNL1AB	NC7SZ74L8X		0/353	
<b>Test: (Solderability)   Conditions:   Standard: JESD22-B102</b>				
Lot	Device	Setpoint	Result	Failure Code
Q20070331AASOLDCAB	FSA2257L10X		0/11	
Q20070331AASOLDCBB			0/11	
Q20070331BASOLDCAB	NC7SZ125L6X		0/11	
Q20070331BASOLDCBB			0/11	
Q20070331CASOLDCAB	FHP3131L6X		0/11	
Q20070331CASOLDCBB			0/11	
Q20070331DASOLDCAB	NC7SZ74L8X		0/11	
Q20070331DASOLDCBB			0/11	
<b>Test: (Static Op Life)   Conditions: 150C, 0V   Standard: JESD22-A108</b>				
Lot	Device	Setpoint	Result	Failure Code
Q20070331AASOPL1B	FSA2257L10X	168-HOURS	0/77	
		1000-HOURS	0/77	
Q20070331BASOPL1B	NC7SZ125L6X	168-HOURS	0/77	
		1000-HOURS	0/77	
Q20070331CASOPL1B	FHP3131L6X	168-HOURS	0/77	
		1000-HOURS	0/77	
Q20070331DASOPL1B	NC7SZ74L8X	168-HOURS	0/77	
		1000-HOURS	0/77	
<b>Test: (Temperature Cycle)   Conditions:   Standard: JESD22-A104</b>				
Lot	Device	Setpoint	Result	Failure Code
Q20070331CATMCL1B	FHP3131L6X	500-CYCLES	0/77	
<b>Test: (Temperature Cycle)   Conditions: -65C, 150C   Standard: JESD22-A104</b>				
Lot	Device	Setpoint	Result	Failure Code
Q20070331AATMCL1B	FSA2257L10X	500-CYCLES	0/77	
Q20070331BATMCL1B	NC7SZ125L6X	500-CYCLES	0/77	
Q20070331DATMCL1B	NC7SZ74L8X	500-CYCLES	0/77	

Product Id Description : This change notification covers Fairchild Semiconductor Micropak 6-Lead, 8-Lead and 10-lead Micropak packages assembled at Hana. Please refer to the Affected FSID listing below for specific part numbers.

**Affected FSIDs :**

FHP3131L6X	FMS6151L6X	FMS6151L6X_F085
FSA1156L6X	FSA1156L6X_F042	FSA1157L6X
FSA1157L6X_F087	FSA1256AL8X	FSA1256L8X
FSA1257AL8X	FSA1257L8X	FSA1258AL8X
FSA1258L8X	FSA201L10X	FSA2156L6X
FSA221L10X	FSA223L10X	FSA2257L10X
FSA2257L10X_F087	FSA2267AL10X	FSA2267AL10X_F065
FSA2267AL10X_F087	FSA2267AL10X_F096	FSA2267L10X
FSA2269L10X	FSA2269TSL10X	FSA266L8X
FSA3157L6X	FSA3357L8X	FSA4157AL6X

FSA4157L6X	FSA4157L6X_F065	FSA4157L6X_F087
FSA4157L6X_F096	FSA5157L6X	FSA66L6X
FSUSB11L10X	FSUSB20L10X	FSUSB20L10X_F087
FSUSB23L10X	FSUSB23L10X_F087	FSUSB30L10X
FSUSB30L10X_F087	FSUSB30L10X_F096	FSUSB31L8X
FSUSB31L8X_F087	FSUSB40L10X	FSUSB45L10X
FSUSB46L8X	FXL2T245L10X	FXL2T245L10X_F065
FXL2T245L10X_F096	FXL2TD245L10X	FXLH1T45L6X
FXP34L6X	FXP34L6X_F065	FXP34L6X_F087
NC7NP04L8X	NC7NP14L8X	NC7NP34L8X
NC7NZ04L8X	NC7NZ14L8X	NC7NZ17L8X
NC7NZ34L8X	NC7NZU04L8X	NC7S00L6X
NC7S02L6X	NC7S04L6X	NC7S08L6X
NC7S14L6X	NC7S32L6X	NC7S86L6X
NC7SB3157L6X	NC7SP00L6X	NC7SP00L6X_F087
NC7SP02L6X	NC7SP02L6X_F087	NC7SP04L6X
NC7SP04L6X_F087	NC7SP05L6X	NC7SP08L6X
NC7SP08L6X_F087	NC7SP125L6X	NC7SP126L6X
NC7SP14L6X	NC7SP157L6X	NC7SP157L6X_F087
NC7SP158L6X	NC7SP17L6X	NC7SP19L6X
NC7SP32L6X	NC7SP34L6X	NC7SP38L6X
NC7SP57L6X	NC7SP58L6X	NC7SP74L8X
NC7SP74L8X_F087	NC7SP86L6X	NC7SPU04L6X
NC7ST00L6X	NC7ST02L6X	NC7ST04L6X
NC7ST08L6X	NC7ST32L6X	NC7ST32L6X_F087
NC7ST86L6X	NC7SU04L6X	NC7SV00L6X
NC7SV00L6X_F087	NC7SV02L6X	NC7SV04L6X
NC7SV04L6X_F087	NC7SV05L6X	NC7SV08L6X
NC7SV08L6X_F087	NC7SV11L6X	NC7SV125L6X
NC7SV126L6X	NC7SV14L6X	NC7SV157L6X
NC7SV157L6X_F087	NC7SV158L6X	NC7SV17L6X
NC7SV19L6X	NC7SV32L6X	NC7SV32L6X_F087
NC7SV32L6X_F115	NC7SV34L6X	NC7SV38L6X
NC7SV57L6X	NC7SV57L6X_F087	NC7SV58L6X
NC7SV58L6X_F087	NC7SV74L8X	NC7SV74L8X_F087
NC7SV86L6X	NC7SVU04L6X	NC7SZ00L6X
NC7SZ02L6X	NC7SZ04L6X	NC7SZ04L6X_F087
NC7SZ05L6X	NC7SZ08L6X	NC7SZ08L6X_F087
NC7SZ10L6X	NC7SZ11L6X	NC7SZ11L6X_F087
NC7SZ125L6X	NC7SZ125L6X_F087	NC7SZ126L6X
NC7SZ126L6X_F087	NC7SZ14L6X	NC7SZ14L6X_F087
NC7SZ157L6X	NC7SZ157L6X_F065	NC7SZ175L6X
NC7SZ175L6X_F115	NC7SZ18L6X	NC7SZ19L6X
NC7SZ19L6X_F065	NC7SZ27L6X	NC7SZ32L6X
NC7SZ32L6X_F087	NC7SZ332L6X	NC7SZ332L6X_F087
NC7SZ373L6X	NC7SZ374L6X	NC7SZ386L6X
NC7SZ38L6X	NC7SZ38L6X_F087	NC7SZ57L6X
NC7SZ57L6X_F065	NC7SZ58L6X	NC7SZ58L6X_F065

NC7SZ58L6X_F087	NC7SZ66L6X	NC7SZ74L8X
NC7SZ74L8X_F087	NC7SZ86L6X	NC7SZU04L6X
NC7WB66L8X	NC7WB66L8X_F087	NC7WP00L8X
NC7WP02L8X	NC7WP02L8X_F087	NC7WP08L8X
NC7WP125L8X	NC7WP14L6X	NC7WP240L8X
NC7WP32L8X	NC7WV04L6X	NC7WV07L6X
NC7WV07L6X_F065	NC7WV14L6X	NC7WV16L6X
NC7WV17L6X	NC7WZ00L8X	NC7WZ00L8X_F087
NC7WZ02L8X	NC7WZ04L6X	NC7WZ04L6X_F065
NC7WZ07L6X	NC7WZ07L6X_F065	NC7WZ08L8X
NC7WZ08L8X_F087	NC7WZ125L8X	NC7WZ125L8X_F087
NC7WZ126L8X	NC7WZ132L8X	NC7WZ14L6X
NC7WZ14L6X_F065	NC7WZ14L6X_F087	NC7WZ16L6X
NC7WZ16L6X_F065	NC7WZ16L6X_F087	NC7WZ17L6X
NC7WZ17L6X_F065	NC7WZ17L6X_F087	NC7WZ240L8X
NC7WZ241L8X	NC7WZ32L8X	NC7WZ38L8X
NC7WZ86L8X	NC7WZ86L8X_F087	NC7WZU04L6X
NC7WZU04L6X_F065		