

Date Created : 2010/06/21
Date Issued On : 2010/08/06
PCN# : Q2102602

DESIGN/PROCESS CHANGE NOTIFICATION -- FINAL

The following Final PCN Q2102602 is an addendum to a previously distributed Final PCN Q2102102. This addendum PCN lists additional devices that are being affected by the changes described in this PCN.

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:

Technical Contact:

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PCN Originator:

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Implementation of change:

Expected 1st Device Shipment Date: 2010/11/02

Earliest Year/Work Week of Changed Product: 4510

Change Type Description: Manufacturing Location, Test Location

Description of Change (From): Current wafer fabrication is at Fairchild Semiconductor Mountain Top, Pennsylvania and Fairchild Semiconductor Salt Lake, Utah.

Description of Change (To): In addition to Fairchild Semiconductor Salt Lake, Utah, products will be manufactured using Taiwan Semiconductor Manufacturing Company Limited, Taiwan. Design, die size and layout of the affected products (see affected FSID list) remain unchanged. There are no changes in the datasheet or electrical performance between products manufactured at the Current and Alternate wafer fab locations.

Reason for Change : Fairchild Semiconductor is increasing wafer capacity by qualifying the PT4 process at Taiwan Semiconductor Manufacturing Company Limited, Taiwan. Quality and reliability will remain at the highest standards already demonstrated with Fairchild's existing products. If you require data or samples to evaluate this change, please contact Fairchild Semiconductor within 30 days of receipt of this notification. Unnecessary delays in requesting data or samples may limit Fairchild's ability to provide a continuous supply of product. Requests for samples or data received more than 90 days after receipt of this notification may not be accepted. This change is planned to take effect in 90 calendar days from the date of this notification. Please work with your local Fairchild sales representative to place orders for sufficient quantities of unchanged product to support your manufacturing needs if your evaluation of this change will require more than 90 calendar days.

Qual/REL Plan Number(s): Q20100276, Q20100306

Qualification :

All tests outlined in Q20100276 and Q20100306 qualification plans were successfully completed. As such, TSMC is qualified as an alternate wafer manufacturing site for PT4 process.

Results/Discussion for Qual Plan Number(s): Q20100276

Test: (High Temperature Gate Bias) Conditions: 150C, 100% VGS V Standard: JESD22-A108					
Lot	Device	500-HOURS	1000-HOURS	Failure Code	
Q20100276AAHTGB	FDMC8884	0/79			
Q20100276AAHTGB	FDMC8884		0/79		
Q20100276ABHTGB	FDMC8884	0/79			
Q20100276ABHTGB	FDMC8884		0/79		

Test: (High Temperature Reverse Bias) Conditions: 150C, 80% VDS V Standard: JESD22-A108					
Lot	Device	500-HOURS	1000-HOURS	Failure Code	
Q20100276AAHTRB	FDMC8884	0/79			
Q20100276AAHTRB	FDMC8884		0/79		
Q20100276ABHTRB	FDMC8884	0/79			
Q20100276ABHTRB	FDMC8884		0/79		

Test: (High Temperature Storage Life) Conditions: 150C Standard: JESD22-A103					
Lot	Device	168-HOURS	500-HOURS	1000-HOURS	Failure Code
Q20100276AAHTSL		0/79			
			0/79		
				0/79	
Q20100276ABHTSL		0/79			
			0/79		
				0/79	

Test: (Highly Accelerated Stress Test) Conditions: 85%RH, 130C, 80% VDS V Standard: JESD22-A110					
Lot	Device	96-HOURS		Failure Code	
Q20100276AAHAST1	FDMC8884	0/79			
Q20100276ABHAST1	FDMC8884	0/79			

Test: (Moisture Sensitivity) Conditions: Standard: J-STD_020					
Lot	Device	Results		Failure Code	
Q20100276AAMSLNL1A	FDMC8884	0/22			
Q20100276ABMSLNL1A	FDMC8884	0/22			

Test: (Power Cycle) Conditions: Delta 100CC, 2 Min cycle Standard: MIL-STD-750-1036					
Lot	Device	5000-CYCLES	10000-CYCLES	Failure Code	
Q20100276AAPRCL	FDMC8884	0/79			
Q20100276AAPRCL	FDMC8884		0/79		
Q20100276ABPRCL	FDMC8884	0/79			
Q20100276ABPRCL	FDMC8884		0/79		

Test: (Precondition) Conditions: Standard: JESD22-A113					
Lot	Device	Results		Failure Code	
Q20100276AAPCNL1A	FDMC8884	0/158			
Q20100276ABPCNL1A	FDMC8884	0/158			

Test: (Temperature Cycle) Conditions: -65C, 150C Standard: JESD22-A104					
Lot	Device	100-CYCLES	500-CYCLES	Failure Code	
Q20100276AATMCL1	FDMC8884	0/79			
Q20100276AATMCL1	FDMC8884		0/79		
Q20100276ABTMCL1	FDMC8884	0/79			
Q20100276ABTMCL1	FDMC8884		0/79		

Results/Discussion for Qual Plan Number(s): Q20100306

Test: (High Humidity, High Temp, Rev. Bias) Conditions: 85%RH, 130C, 80% of Rated BV Standard: JESD22-A101B					
Lot	Device	168-HOURS	500-HOURS	1000-HOURS	Failure Code
Q20100306AAH3TRB	FDD8874	0/77			
			0/77		
				0/77	
Q20100306BCH3TRB	FDB8447L	0/77			
			0/77		

				0/77	
Test: (High Temperature Gate Bias) Conditions: 150C, 100 % Rated VGSV Standard: JESD22-A108					
Lot	Device	168-HOURS	500-HOURS	1000-HOURS	Failure Code
Q20100306BCHTGB		0/77			
			0/77		
				0/77	
Test: (High Temperature Gate Bias) Conditions: 175C, 100 % Rated VGSV Standard: JESD22-A108					
Lot	Device	168-HOURS	500-HOURS	1000-HOURS	Failure Code
Q20100306AAHTGB	FDD8874	0/77			
			0/77		
				0/77	
Test: (High Temperature Reverse Bias) Conditions: 150C, 80% rated BV Standard: JESD22-A108					
Lot	Device	168-HOURS	500-HOURS	1000-HOURS	Failure Code
Q20100306BAHTRB	FDB8447L	0/77			
			0/77		
				0/77	
Q20100306BBHTRB		0/77			
			0/77		
				0/77	
Q20100306BCHTRB		0/77			
			0/77		
				0/77	
Test: (High Temperature Reverse Bias) Conditions: 175C, 80% rated BV Standard: JESD22-A108					
Lot	Device	168-HOURS	500-HOURS	1000-HOURS	Failure Code
Q20100306AAHTRB	FDD8874	0/77			
			0/77		
				0/77	
Test: (Power Cycle) Conditions: Delta 100CC, 2 Min cycle Standard: MIL-STD-750-1036					
Lot	Device	5000-CYCLES	10000-CYCLES	Failure Code	
Q20100306AAPRCL	FDD8874	0/77			
Q20100306AAPRCL	FDD8874		0/77		
Test: (Power Cycle) Conditions: Delta 100CC, 3.5 Min/3.5minites on/off time Standard: MIL-STD-750-1036					
Lot	Device	5000-CYCLES	8572-CYCLES	Failure Code	
Q20100306BCPRCL	FDB8447L	0/77			
Q20100306BCPRCL	FDB8447L		0/77		
Test: (Precondition) Conditions: Standard: JESD22-A113					
Lot	Device	Results	Failure Code		
Q20100306AAPCNL1A	FDD8874	0/231			
Q20100306BCPCNL1B	FDB8447L	0/231			
Test: (Temperature Cycle) Conditions: -65C, 150C Standard: JESD22-A104					
Lot	Device	200-CYCLES	500-CYCLES	Failure Code	
Q20100306AATMCL1	FDD8874	0/77			
Q20100306AATMCL1	FDD8874		0/77		
Q20100306BCTMCL1	FDB8447L	0/77			
Q20100306BCTMCL1	FDB8447L		0/77		

Product Id Description : Selected Fairchild Semiconductor products. For complete listing, please refer to the Affected FSIDs section.

Affected FSIDs :

FD6S6N548	FDS8447	FDS8447_G
FDS8870	FDS8870_G	FDS8870_NBSC001
FDS8876	FDS8876_F40	FDS8878
FDS8878_G	FDS8878_NBSE002	FDS8880
FDS8880_G	FDS8880_SN00134	FDS8884
FDS8884_G	FDS8896	FDS8896_SBSW008
FDS8978	FDS8978_F40	FDS8978_G
FDS8984	FDS8984_F40	FDU8780_F071

FDU8796_F071	PCFD8870W	
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