Date Created : **2010/08/08**
Date Issued On : **2011/01/04**
PCN# : **Q3103204**

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:

Technical Contact:
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PCN Originator:
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Implementation of change:
Expected 1st Device Shipment Date: 2011/02/14

Earliest Year/Work Week of Changed Product: 51

Change Type Description: Lid or Base Material Composition

Description of Change (From): 3-lead TO263 package assembled with a K80 copper alloy leadframe

Description of Change (To): 3-lead TO263 package assembled with a 12SnOFC copper alloy leadframe

Reason for Change : Improved bonding surface with 12SnOFC leadframe. This change will have no impact on product quality, reliability, electrical, visual or mechanical performance and affected products will remain fully compliant to all published specifications. Products incorporating this change may be shipped interchangeably with existing unchanged products. 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 manage your inventory of unchanged product if your evaluation of this change will require more than 90 calendar days. Please contact your local Customer Quality Engineer within 30 days of receipt of this notification if you require any additional data or samples.

Qual/REL Plan Number(s): Q20100380

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Qual Plan Nbr : QP20100380-1
Title : Qualification of FSSZ TO263 12SnOfc Lead frame for Automotive application
Background/Description : Leadframe Cu alloy change from K80 to 12SnOfc to improve the bond lift issue.
SCOPE : Applies to FSSZ TO263 package for automotive products.

Process of Record (POR)

PROCESS	Current FSSZ TO263	Will change
Wafer Fab	Bucheon Korea; Mountaintop; Salt lake	N/A
Wafer saw Solder die bond Al wire bond Au wire bond	Blade Soft Solder Ultrasonic N/A	N/A N/A N/A N/A
Lead Finish	Lead Free	N/A
Lead Frame Vendor	TSP	N/A
Lead Frame Base Material	Copper	N/A
Lead Frame Cu Alloy	K80	12SnOFC
Mold Compound	EME6600CS; KTMC5900GM;	N/A

Release Criteria

Interim Release	Successful Completion of 1st Time point of all reliability tests per the qualification plan.
	Successful completion of all ALR tests
Final Release	Successful completion of all reliability test and ALR tests per the qualification plan
	Team Review and Approval of Manufacturability Requirements, Pre-production results, And other requirements to successfully support mass production. (if required) Completion of revised FMEA and Control Plans (if required) .

Qualification Vehicles

								# Of LOTS				REMARKS
DEVICE	CHIP TYPE	DIE SIZE (mils)	Wire SIZE (mils)	Die Run	Voltage Rating	TEMP RATING	ASSY SITE PKG	TEST A	TEST B	TEST C	TEST D	
FQB25N33TM_NB82122	MOSFET	4600*6200 mm	15mils*2+ 6mils*1	use inventory in suzhou	330V	150 C	FSSZ D2PAK	1	N/A	1	NA	
FFB20UP20DN_SB82216	Rectifier	143 x 77	20mils*2	use inventory in suzhou	200V	150 C	FSSZ D2PAK	1	N/A	1	NA	
IRFW644BTM_AS003	Trench	143 x 133	6 mil gate 10 mil source	use inventory in suzhou	250V	150 C	FSSZ D2PAK	1	N/A	1	NA	

Qualification :

All reliability tests outlined in the qualification plan Q20100380 has been successfully met.

Results/Discussion for Qual Plan Number(s): Q20100380

Test: (Autoclave) | Conditions: 100%RH, 121C | Standard: JESD22-A102			
Lot	Device	96-HOURS	Failure Code
Q20100380AAACLV	FQB25N33TM_NB82122	0/77	
Q20100380BAACLV	FFB20UP20DN_SB82216	0/77	
Q20100380CAACLV	IRFW644BTM_AS003	0/77	

Test: (Highly Accelerated Stress Test) | Conditions: 85%RH, 130C, 42V | Standard: JESD22-A110			
Lot	Device	96-HOURS	Failure Code
Q20100380AAHAST1	FQB25N33TM_NB82122	0/77	
Q20100380BAHAST1	FFB20UP20DN_SB82216	0/77	
Q20100380CAHAST1	IRFW644BTM_AS003	0/77	

Test: (Power Cycle) | Conditions: Delta 100C, 3.5min on, 3.5 min off | Standard: MIL-STD-750-1036				
Lot	Device	5000-CYCLES	8572-CYCLES	Failure Code
Q20100380AAPRCL	FQB25N33TM_NB82122	0/77		
Q20100380AAPRCL	FQB25N33TM_NB82122		0/77	
Q20100380BAPRCL	FFB20UP20DN_SB82216	0/77		
Q20100380BAPRCL	FFB20UP20DN_SB82216		0/77	
Q20100380CAPRCL	IRFW644BTM_AS003	0/77		
Q20100380CAPRCL	IRFW644BTM_AS003		0/77	

Test: (Precondition) | Conditions: | Standard: JESD22-A113			
Lot	Device	Results	Failure Code
Q20100380AAPCNL1B	FQB25N33TM_NB82122	0/308	
Q20100380BAPCNL1B	FFB20UP20DN_SB82216	0/308	
Q20100380CAPCNL1B	IRFW644BTM_AS003	0/308	

Test: (Temperature Cycle) | Conditions: -65C, 150C | Standard: JESD22-A104				
Lot	Device	500-CYCLES	1000-CYCLES	Failure Code
Q20100380AATMCL3	FQB25N33TM_NB82122	0/77		
Q20100380AATMCL3	FQB25N33TM_NB82122		0/77	
Q20100380BATMCL3	FFB20UP20DN_SB82216	0/77		
Q20100380BATMCL3	FFB20UP20DN_SB82216		0/77	
Q20100380CATMCL3	IRFW644BTM_AS003	0/77		
Q20100380CATMCL3	IRFW644BTM_AS003		0/77	

Product Id Description :

Affected FSIDs :

FFB20UP20DN_F085	FFB20UP20DN_SB82195	FQB12P20TM_SB82075
FQB25N33TM_NB82122	FQB34P10TM_F085	FQB7P20TM_F085
IRFW644BTM_AS003		