

Date Created : 2008/03/18
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PCN# : Q3073502-B

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:

Name: Yang, Johnson

E-mail: Johnson.Yang@fairchildsemi.com

Phone: 86-51267623311 ext 86718

PCN Originator:

Name: Sun, Brian

E-mail: Brian.Sun@fairchildsemi.com

Phone:

Implementation of change:

Expected 1st Device Shipment Date: 2008/07/06

Earliest Year/Work Week of Changed Product: 0828

Change Type Description: Alternate Assembly/Test Location/Qualification

Description of Change (From): TO3PF 3 Leads product is currently manufactured at SP Semiconductor & Communication Co Ltd. located in Korea using materials referenced in table 1.

Description of Change (To): TO3PF 3 leads product will be manufactured at Fairchild Semiconductor located in Suzhou, China using materials referenced in table 1. Changes in soft solder die attach material, Leadframe base materials and lead finish plating bath have been made to align with standard materials and process currently utilized in FSC, Suzhou Manufacturing line. Package outline drawing of the affected products remains un-changed. Product will be fully compliant to all published data sheet specifications and will be interchangeable with current material. Quality and reliability will remain at the highest standards already demonstrated with Fairchild's existing products.

Reason for Change : Qualify Suzhou Fairchild manufacturing site to improve capacity and flexibility.

Qual/REL Plan Numbers : Q20080231

Qualification :

Passed and met Fairchild qualification test requirement

Change From

Table 1

PROCESS	Current SUBCON TO3PF 3L	New SUZHOU TO3PF 3L
Technology	IGBT, Transistor, Diode,	IGBT, Transistor, Diode
Package	TO3PF 3L	TO3PF 3L
Molding Compound	KTMC-3090FP (KCC)	KTMC-3090FP (KCC)
	ST-7100HF (CHEIL)	ST-7100HF (CHEIL)
Die Attach		
Solder Wire Composition	Solder - Umicore Pb:Sn:Ag = 88:10:2	Solder - Umicore Pb:Sn:Ag = 93.5:5:1.5
Solder Wire Size	25mil diameter	25mil diameter
Bonding wire material and size	Al Wire - HOT	Al Wire - HOT
Lead Finish	Matte pure Sn plating	Matte pure Sn plating
Lead Frame	Base Material: TAMAC/KOBE	Base Material: KFC
	Supplier: TOSHIBA(Japan)	Supplier: TOSHIBA(Japan)
	Die Attach Pad Size: 9.0 * 9.0 mm	Die Attach Pad Size: 9.0 * 9.0 mm
Lead Frame Plating	Pad Plating – Bare Cu	Pad Plating – Bare Cu
Temperature Rating (Storage)	150°C	150°C
Marking Method	Laser	Laser

Results/Discussion

Test: (Autoclave)					
Lot	Device	96-HOURS	Failure Code		
Q20080231AAACLV	FFAF40U60DNTU	0/77			
Q20080231BAACLV	KSC5030FRTU	0/77			
Test: (High Humidity, High Temp, Rev. Bias)					
Lot	Device	168-HOURS	500-HOURS	1000-HOURS	Failure Code
Q20080231AAH3TRB	FFAF40U60DNTU	0/77	0/77	0/77	
Q20080231BAH3TRB	KSC5030FRTU	0/77	0/77	0/77	
Q20080231CAH3TRB	SGF5N150UFTU	0/77	0/77	0/77	
Test: (High Temperature Gate Bias)					
Lot	Device	168-HOURS	500-HOURS	1000-HOURS	Failure Code
Q20080231CAHTGB	SGF5N150UFTU	0/77	0/77	0/77	
Test: (High Temperature Reverse Bias)					
Lot	Device	168-HOURS	500-HOURS	1000-HOURS	Failure Code
Q20080231AAHTRB	FFAF40U60DNTU	0/77	0/77	0/77	
Q20080231BAHTRB	KSC5030FRTU	0/77	0/77	0/77	
Q20080231CAHTRB	SGF5N150UFTU	0/77	0/77	0/77	
Test: (High Temperature Storage Life)					
Lot	Device	168-HOURS	500-HOURS	1000-HOURS	Failure Code

Q20080231AAHTSL	FFAF40U60DNTU	0/77		
			0/77	
				0/77
Q20080231BAHTSL	KSC5030FRTU	0/77		
			0/77	
				0/77
Q20080231CAHTSL	SGF5N150UFTU	0/77		
			0/77	
				0/77

Test: -65C, 150C (Temperature Cycle)

Lot	Device	200-CYCLES	500-CYCLES	Failure Code
Q20080231AATMCL1	FFAF40U60DNTU	0/77		
Q20080231AATMCL1	FFAF40U60DNTU		0/77	
Q20080231BATMCL1	KSC5030FRTU	0/77		
Q20080231CATMCL1	SGF5N150UFTU	0/77		

Test: Medium Size Pkg's (TO-220, D2) (Power Cycle)

Lot	Device	4000-CYCLES	6000-CYCLES	Failure Code
Q20080231AAPRCL1	FFAF40U60DNTU	0/77		
Q20080231AAPRCL1	FFAF40U60DNTU		0/77	
Q20080231BAPRCL1	KSC5030FRTU	0/77		
Q20080231BAPRCL1	KSC5030FRTU		0/77	
Q20080231CAPRCL1	SGF5N150UFTU	0/77		
Q20080231CAPRCL1	SGF5N150UFTU		0/77	

Product Id Description :

Affected FSIDs :

FFAF30U60DNTU	FFAF40U60DNTU	FFAF40UP20DNTU
FGAF40N60UFDU	FGAF40N60UFTU	FJAF4210OTU
FJAF4210RTU	FJAF4210YTU	FJAF4310OTU
FJAF4310YTU	FJAF5804TU	KSC5030FRTU
KSD5703YDTBTU	SGF23N60UFDU	SGF23N60UFTU
SGF5N150UFTU	SGF80N60UFTU	TIP142FTU
TIP147FTU		