



Date Created: 12/12/2003
Date Issued: 2/9/2004
PCN # 20035002

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.**

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

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PCN Type: Plating Material Change

Effectivity

Expected 1st Device Shipment Date: 5/17/2004
Earliest Year/Work Week of Changed Product: 0421
(Note: Package marking may differ from this format)

Product ID (Description):

This change will affect Analog devices of SOT 23 package assembled in Fairchild Cebu.

Description of Change:

The process change involves the qualification of silver (Ag) plated quadstrand leadframe for analog devices in SOT-23 package. The existing is Au plated dual strand leadframe.

Effect of Change:

The quality and reliability performance of the silver (Ag) plated quadstrand leadframe is comparable to that of the existing gold (Au) plated dual strand leadframe. The Ag plated quadstrand leadframe is a qualified leadframe in other packages built in-house.

Qualification:

The qualification plan and the qualification results are intended to meet all our criteria for new process, material and design changes and the over-all quality and reliability of our products.

Qual/REL Plan Numbers

Qual Results: FMV20040004

Test: Autoclave Test (ACLV) + MSL1 Preconditioning

Test Request	Device	Sbgrp	TP	Duration	Sample Size	Rejects
RCB200400007	FAN4040AIS325X	A	1	96	77	0
RCB200400007	FAN4040AIS325X	B	1	96	77	0
RCB200400007	FAN4040AIS325X	C	1	96	77	0

Test: High Temperature Storage test (bake) (HTSL)

Test Request	Device	Sbgrp	TP	Duration	Sample Size	Rejects
RCB200400007	FAN4040AIS325X	A	1	168	77	0
RCB200400007	FAN4040AIS325X	A	2	500	77	0
RCB200400007	FAN4040AIS325X	A	3	1000	77	0
RCB200400007	FAN4040AIS325X	B	1	168	77	0
RCB200400007	FAN4040AIS325X	B	2	500	77	0
RCB200400007	FAN4040AIS325X	B	3	1000	77	0
RCB200400007	FAN4040AIS325X	C	1	168	77	0
RCB200400007	FAN4040AIS325X	C	2	500	77	0
RCB200400007	FAN4040AIS325X	C	3	1000	77	0

Test: Temperature Humidity Bias Test (THBT) + MSL1 Preconditioning

Test Request	Device	Sbgrp	TP	Duration	Sample Size	Rejects
RCB200400007	FAN4040AIS325X	A	1	168	77	0
RCB200400007	FAN4040AIS325X	A	2	500	77	0
RCB200400007	FAN4040AIS325X	A	3	1000	77	0
RCB200400007	FAN4040AIS325X	B	1	168	77	0
RCB200400007	FAN4040AIS325X	B	2	500	77	0
RCB200400007	FAN4040AIS325X	B	3	1000	77	0
RCB200400007	FAN4040AIS325X	C	1	168	77	0
RCB200400007	FAN4040AIS325X	C	2	500	77	0
RCB200400007	FAN4040AIS325X	C	3	1000	77	0

Test: Temperature Cycle (TMCL) + MSL1 Preconditioning

Test Request	Device	Sbgrp	TP	Duration	Sample Size	Rejects
RCB200400007	FAN4040AIS325X	A	1	100	77	0
RCB200400007	FAN4040AIS325X	A	2	500	77	0
RCB200400007	FAN4040AIS325X	B	1	100	77	0
RCB200400007	FAN4040AIS325X	B	2	500	77	0
RCB200400007	FAN4040AIS325X	C	1	100	77	0
RCB200400007	FAN4040AIS325X	C	2	500	77	0

Assembly Level Reliability Test Results

Test: Die Shear (grams/mil²)

25 FAN4040

	Qual Lot	Control Lot
Mean:	1.20	1.15
Std Dev:	0.21	0.18
Upper 95% mean:	1.28	1.21
Lower 95% mean:	1.12	1.08
Lower Spec Limit:	0.30	0.30

33 FAN4040

	Qual Lot	Control Lot
Mean:	3.04	2.62
Std Dev:	0.46	0.19
Upper 95% mean:	3.21	2.69
Lower 95% mean:	2.87	2.55
Lower Spec Limit:	0.72	0.72

Test: Wire Pull (grams)

25 FAN4040

	Qual Lot	Control Lot
Mean:	11.32	12.28
Std Dev:	0.70	1.10
Upper 95% mean:	11.58	12.69
Lower 95% mean:	11.06	11.87
Lower Spec Limit:	3.00	3.00

33 FAN4040

	Qual Lot	Control Lot
Mean:	12.30	11.27
Std Dev:	1.76	0.74
Upper 95% mean:	12.96	11.54
Lower 95% mean:	11.65	10.99
Lower Spec Limit:	3.00	3.00

Conclusion

Based on the test results, in accordance with the guidelines in FSC-QAR-0006, a code R release is recommended for the new silver plated quad stranded leadframes to be used with the Cebu Assembled SOT-23 package.

Affected FSIDs

FAN4040AES35X
FAN4040AIS35X
FAN4040BES35X
FAN4040BIS35X
FAN4040CES35X
FAN4040CIS35X
FAN4040DES35X
FAN4040DIS35X
FAN4041CIS3X
FAN4050AIS333X
FAN4050CIS325X

FAN4040AIS325X
FAN4040BES325X
FAN4040BIS325X
FAN4040CES325X
FAN4040CIS325X
FAN4040DES325X
FAN4040DIS325X
FAN4041AIS3X
FAN4041DIS3X
FAN4050BIS325X
FAN4050CIS333X

FAN4040AIS333X
FAN4040BES333X
FAN4040BIS333X
FAN4040CES333X
FAN4040CIS333X
FAN4040DES333X
FAN4040DIS333X
FAN4041BIS3X
FAN4050AIS325X
FAN4050BIS333X