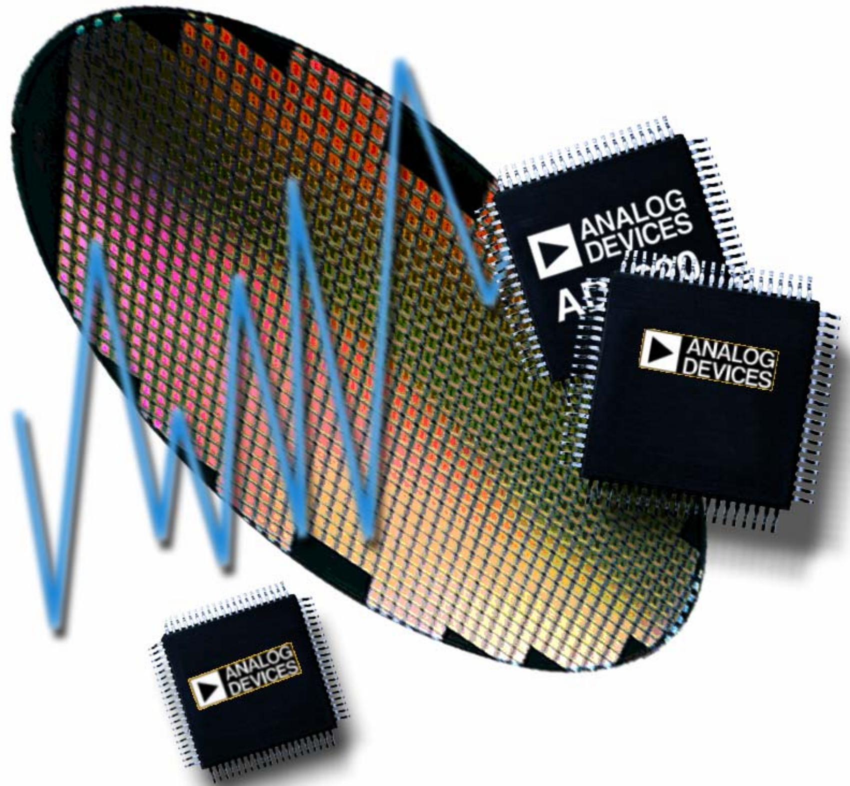
ANALOG DEVICES



Reliability Report

Report Title: **Product Transfer of the ADM70X family to 0.5um TSMC2B06**

Report Number: **6883**

Date: **3 March 2008**

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Summary

This report documents the successful completion of the reliability qualification requirements for release of the ADM705, ADM706, ADM707 and ADM708 products in a leaded and non-lead 8-SOICnb package. The ADM705 is a low cost microprocessor supervisory circuit.

Table 1: ADM705 Product Characteristics

Device

Maximum Power Dissipation (W)	0.009
Device / Die ID	C93A
Die Size (mm)	1.00 x 1.00
Wafer Fabrication Site	TSMC2B06
Wafer Fabrication Process	0.5um DHTM CMOS
Transistor Count	6682
Passivation Layer	undoped-oxide/SiN
Bond Pad Metal Composition	AlCu

Package/Assembly

Available Package(s)	8-SOICnb
Body Size (mm)	5.00 x 4.00 x 1.75
Assembly Location	Amkor-P
Die Attach	Ablestik 84-1LMIS R4
Lead Frame Material	Copper
Bond Wire Type	Gold
Bond Wire Dia. (mils)	1.00
Mold Compound	Sumitomo 6600H

Lead Finish	85Sn/15Pb
Moisture Sensitivity Level	1
Maximum Peak Reflow (°C)	225C

Lead Finish	100Sn
Moisture Sensitivity Level	1
Maximum Peak Reflow (°C)	260C

Description/Results of Tests Performed

Table 2 provides a description of the qualification tests conducted and the associated test results on the ADM705 and other products manufactured on the same technologies as described in the product characteristics table.

Table 2: Process Qualification Test Results

Test Name	Conditions	Specification	Part Number	Fab Process	Lot Number	Sample Size	Qty. Rejects
HTOL [1]	150C<Tj<175C, Biased 500hrs	JESD22-A108	ADM705	0.5um DHTM CMOS	S217679.2	77	0

Samples of the many devices manufactured with these process technologies are continuously undergoing reliability evaluation as part of the ADI Reliability Monitor Program. Additional qualification data is available on Analog Devices' web site at: http://www.analog.com/world/quality/read/1stpage.html.

[1] These Samples were subjected to preconditioning (per J-STD-020 Level 1) prior to the start of the stress test. Level 1 preconditioning consists of the following:

- Bake: 24 hrs @ 125°C
- Unbiased Soak: 168 hrs @ 85°C, 85%RH
- Reflow: 3 passes through an oven with a peak temperature of 260+0/-5°C

Samples of the many devices manufactured with this packaging technology are continuously undergoing reliability evaluation as part of the ADI Reliability Monitor Program. Additional qualification data is available on Analog Devices' web site at: http://www.analog.com/world/quality/read/1stpage.html.

ESD Testing

The results of Human Body Model (HBM) and Field Induced Charge Device Model (FICDM) ESD testing are summarized in Table 3.

ADI measures ESD results using stringent test procedures based on the specifications listed in the above table. Any comparison with another supplier's results should ensure that the same ESD test procedures have been used. For further details, please see the EOS/ESD chapter of the ADI Reliability Handbook at http://www.analog.com/world/quality/manuals/.

Table 3: ADM705 ESD Test Results

ESD Model	Package	ESD Test Spec	RC Network	Highest Pass Level	First Fail Level	Class
FICDM	8-SOICnb	JESD22-C101	1Ω, Cpkg	1500V	NA	C6
HBM	8-SOICnb	ESD Assoc. STM5.1-2001	1.5kΩ, 100pF	4500V	NA	3A

Latch-up Testing

Six samples of the AD705 passed Latch-up testing at Ta=25°C per JEDEC Standard JESD78, Class I, Level B.

Approvals

Reliability Engineer: Fergus Downey
This report has been approved by electronic means (3.5).

Additional Information

Data sheets and other additional information are available on Analog Devices' web site at the addresses shown below.

Home Page:	http://www.analog.com
Sales Info:	http://www.analog.com/world/corp_fin/sales_directory/distrib.html
Reliability Data:	http://www.analog.com/world/quality/read/1stpage.html
Reliability Handbook:	http://www.analog.com/corporate/quality/manuals/