

TEST PRODUCT QUALIFICATION REPORT

TITLE:

Qualification of AMKOR Technology Philippines (AP3), as
an Alternate Test Site for ADM803/ADM809/ADM810
(SC70)

PCN NUMBER: 15_0188 (Rev -)

DATE: 28 October 2015

PROJECT BACKGROUND

The ADM803/ADM809/ADM810 supervisory circuits monitor the power supply voltage in microprocessor systems. It provides a reset output during power-up, power-down, and brownout conditions. On power-up, an internal timer holds reset asserted for 240ms. This holds the microprocessor in a reset state until conditions have stabilized. The reset output remains operational with VCC as low as 1V. ADM803 and adm809 provide an active low reset signal ($\overline{\text{RESET}}$), whereas ADM810 provides an active high signal (RESET) output. The ADM809 and ADM810 have push-pull outputs, whereas the ADM803 has an open-drain output, which requires an external pull-up resistor. Seven reset threshold voltage options are available, suitable for monitoring a variety of supply voltages. The reset comparator features built-in glitch immunity, making it immune to fast transients on VCC. ADM803/ADM809/ADM810 consume only 17 μ A, making them suitable for low power, portable equipment.

ADM803/ADM809/ADM810 are currently being tested in Carsem Malaysia (CRS). To make sure that we can continue to serve customer demands on whatever situation, a study was done to look at the different discrete packages currently being manufactured in Carsem to check whether we can use another supplier as an alternate source. Amkor Technology Philippines (AP3) was qualified as an additional test site for ADI devices to support production.

SUMMARY

The current test site for the ADM803/ADM809/ADM810 (SC70) is Carsem Malaysia (CRS) and the alternate test site is Amkor Technology Philippines (AP3).

This report documents the successful completion of test qualification requirements of ADM803/ADM809/ADM810 (SC70) at Amkor Technology Philippines (AP3), using ADM803 as the driver device.

Test qualification was performed according to Analog Devices Specifications (ADI0012 / TST000137 / TST00095)

TEST AND PRODUCT INFORMATION

Device:	ADM803/ADM809/ADM810
Package:	SC70
Leads:	3
Tester Platform:	CTS5040
Handler:	SRM XD248

DESCRIPTION AND TEST RESULTS

Table 1 provides a description of the test qualification conducted and corresponding test results for ADM803 (SC70). All the units have undergone electrical tests on both CRS and AP3 using the same test platform. Any device that did not meet the electrical qualification requirements without further analysis and data to prove passing, the qualification would be considered failed.

Table1. Test Product Qual Criteria

Generic	Package	Lot Size	Existing Site	Receiving Site	Mean Shift = $\leq 0.5\sigma$	Sigma Ratio = ≤ 1.3
ADM803	SC70	100	CRS	AP3	Passed	Passed

ADM803 was qualified by running a qualification lot with 100 units both in CRS and AP3. Data between sites were analyzed as summarized in Table 1.

A passing result was recorded when the yield from receiving site met or exceeded yield from sending site as summarized in Table 2. Succeeding lots with increased quantity will be closely monitored once the device has started production run at AP3.

Table2. Test Product Qualification Lot Run

GENERIC	Package	Lot Size	Test Site	Results
ADM803	SC70	100	AP3	Passed

No valid rejects were encountered during the said evaluation in both CRS and AP3.

REJECT VERIFICATION

5 valid rejects tested from CRS were tested at AP3 and ended with the same result.

Table3. Setup verification using Reject units

Unit #	CRS	AP3
1	Failed	Failed
2	Failed	Failed
3	Failed	Failed
4	Failed	Failed
5	Failed	Failed

CONCLUSION:

ADM803 (SC70) test data on both sites are correlated. Data are already approved by Engineering and Technical Review Board, it is acceptable. AP3 is now ready to test ADM803/ADM809/ADM810 (SC70) device.

APPROVALS:

Technical Review Board

ADDITIONAL INFORMATION:

Homepage: <http://www.analog.com/en/index.html>

Datasheet: http://www.analog.com/media/en/technical-documentation/data-sheets/ADM803_809_810.pdf

Customer Service: <http://www.analog.com/en/support/technical-support.html>

Material Set Change Description:

Package	Material	CARSEM	AMKOR
SC70 3/4/5/6Lead	Die Attach Adhesive	Loctite QMI519	Ablestik 84-1LMISR4
	Mold Compound	Hitachi CEL8240 HF10LX	Sumitomo G700LS

Mold Surface Finish: Smooth Surface Finish (Carsem) - Matte Surface Finish (Amkor)

**Addition of Amkor Philippines as Alternate Assembly and Test Sites
for SC70 Package**

SC70 at Amkor-P Qualification Results Summary

QUALIFICATION RESULT			
TEST	SPECIFICATION	SAMPLE SIZE	RESULT
Temperature Cycle (TC)*	JEDEC <i>JESD22-A104</i>	3 x 77	PASS
Highly Accelerated Stress Test (HAST)*	JEDEC <i>JESD22-A110</i>	3 x 77	PASS
Autoclave (AC)*	JEDEC <i>JESD22-A102</i>	3 x 77	PASS
Solder Heat Resistance (SHR)*	JEDEC/IPC <i>J-STD-020</i>	3 x 11	PASS
High Temperature Storage (HTS)	JEDEC <i>JESD22-A103</i>	1 x 77	PASS
Electrostatic Discharge <i>Field Induced Charge Device Model</i>	JEDEC <i>JESD22-C101</i>	3/voltage	PASS ±1250V

*Preconditioned per JEDEC/IPC J-STD-020