



**UC2879 Device Family
Transfer from UMK/MFAB to SFAB**

**(QP-1359)
Qualification Plan Approval**

Device Transfer Qualification Plan for the UC2879 Device Family QP-1359

Purpose of Fab Transfer Qualification: This Qualification Plan is to be used for products being transferred from one fabrication line to another. The new fabrication line must be fully qualified for the required process .

General Project Information

Device being transferred: UC2879Device Family

Current Fab: • MFAB

Current Mask Set: • JX

New Fab: • SFAB

New Mask Set: • JX

Name of the Fabrication Site (and division, if appropriate): Sherman Fab

Location: Sherman, Texas

What is the Qualification # for the Process: QP1229- BIP-DLM

Qualification Database #: QP-1359

Qual. Project Start Date: 1/01/03

Planned Completion Date: 3/31/03

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REQUIREMENTS – PROCESS/DEVICE/PACKAGE QUALIFICATION						
	CATEGORY	SUB-CATEGORY	NOTES/ REQUIREMENTS DETAIL	EVIDENCE OF COMPLETION	RESPONSIBLE PERSON	STATUS
1.	Customer Notification	<ul style="list-style-type: none"> Customers affected by qualifying this product need to be notified. 	<ul style="list-style-type: none"> Customers need to be notified for the following devices: Need a schedule of devices to be qualified by quarter 	<ul style="list-style-type: none"> Notifications issued to customers. 	<ul style="list-style-type: none"> Loren Reifsteck 	<p>Complete</p> <ul style="list-style-type: none"> PCN # 20010717003 was sent out on 7/30/01
2	Fab Process Qualification Data	<ul style="list-style-type: none"> Qualification/reliability results 	<ul style="list-style-type: none"> Process previously qualified 	<ul style="list-style-type: none"> Refer to original process qualification report 	<ul style="list-style-type: none"> Janice Halle' 	<p>Complete</p> <ul style="list-style-type: none"> Refer to Qual Plan #' 1229
3.	Manufacturability	<ul style="list-style-type: none"> SFAB 	<ul style="list-style-type: none"> Manufacturability test must include Cpk determination. 	<ul style="list-style-type: none"> Report 	<ul style="list-style-type: none"> Janice Halle' 	<p>Complete</p> <ul style="list-style-type: none"> Refer to Qual Plan #'s 1229
4.	Verification of Process through Manufacture and Probe of Qual Lot(s)	<ul style="list-style-type: none"> Lot(s) will be manufactured to a "frozen" process. <ul style="list-style-type: none"> – Minimum of 1 lot built to full production specifications on a "frozen" process. 	<ul style="list-style-type: none"> Lots will be tested to final E-Test parametric limits and accepted to the sample plan defined in the process acceptance specification. Specific testing problems may be excepted if bench data supports correct device performance. 	<ul style="list-style-type: none"> Summary of E Test Data 	<ul style="list-style-type: none"> Susan Wells 	<p>Complete</p> <p>The process was frozen and the E-Test Parameters were all in spec.</p>
5.	Reliability Test	<ul style="list-style-type: none"> ESD Testing 	<ul style="list-style-type: none"> Human body model 12 units/lot/ 3 units per voltage level 1 lot required QSS 009-501 Results must be within 500V Equivalent performance to product manufactured at UMK / MFAB or meet the requirement of QSS 009-501. 	<ul style="list-style-type: none"> Rel Report 	<ul style="list-style-type: none"> Mark Hayner 	<p>Complete</p> <p>Pass @ 3000V Refer to Rel # 1768</p> <p>MFAB @ 2000V</p>

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6.	Reliability Test	<ul style="list-style-type: none"> ESD Testing 	<ul style="list-style-type: none"> Charged Device model 12 units/lot / 3 units per voltage level 1 lot required QSS 009-501 Devices fabricated from both current and new fab sites to be tested as the measure of equivalency Results must be within 500V Equivalent performance to product manufactured at UMK / MFAB 	<ul style="list-style-type: none"> Rel Report 	<ul style="list-style-type: none"> Mark Hayner 	<p>Complete Pass @ 1500V Refer to Rel # 1768 No MFAB data – CDM not required during original RTP.</p>
7.	Device Characterization	<ul style="list-style-type: none"> Temperature Characterization 	<ul style="list-style-type: none"> 30 units from 1 lot needs to be characterized over temperature. Devices must meet full data sheet at specified temperatures. Cp, Cpk equivalent to MFab or ≥ 1.33, whichever is lower, for identified critical parameters. 	<ul style="list-style-type: none"> Copy of temperature characterization plots and statistics Delta Table Comparison 	<ul style="list-style-type: none"> Dion Soetadi 	<p>Complete</p> <ul style="list-style-type: none"> All devices meet full data sheet specs at required temperatures Action Items generated for any Cpk below 1.33
8.	Device Characterization	<ul style="list-style-type: none"> Probe Functional Test Yield 	<ul style="list-style-type: none"> Probe test yield from 1 wafer lot (6 wafers minimum with at least 3 wafers probed on production tester using production test) needs to demonstrate $\geq 90\%$ of standard yield or 3 different wafer lots (3 wafers minimum with at least 1 lot probed on production tester using production test) where 2 lots need to demonstrate $\geq 85\%$ of standard yield This is a UMK/MFAB standard and may be replaced with SFAB's requirement.. 	<ul style="list-style-type: none"> Lot #: JX2203744 SFAB Yield: 86.32% <p>Standard MFAB Yield = 83.17%</p>	<ul style="list-style-type: none"> Dion Soetadi 	<p>Complete Yield is equivalent to MFAB</p>

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9.	Device Characterization	<ul style="list-style-type: none"> Final Test Yield 	<ul style="list-style-type: none"> Final test yield from 1 assembly lot needs to demonstrate assembly yields appropriate to equivalent products and/or packages. 	SFAB Lot #: JX2203744 - 1000 pcs tested <ul style="list-style-type: none"> Yield: 97.4 % MFAB Yield – 97.36%	<ul style="list-style-type: none"> Dion Soetadi 	Complete Yield is equivalent to MFAB
10	Full Qualification	<ul style="list-style-type: none"> Summary Documentation complete Qualification 		<ul style="list-style-type: none"> Update this Qual Plan as summary report 	<ul style="list-style-type: none"> Janice Halle' 	Complete Verified that all qual requirements Have been met 3/25/03

-----**This Page for FINAL REPORTS Only**-----

Final Report Approval

Recommendation

The Qualification Team recommends Full Qualification, as all the requirements documented in the Qualification Plan have been satisfactorily completed.

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