PRODUCT / PROCESS CHANGE NOTIFICATION

PCN-001085

Date: MAY-26-2026

Change Details

Part Number(s) Affected: **GS2989-INE3** **GS2989-INTE3** **GS2989-INTE3Z** **GS6081-INE3** **GS6081-INTE3** **GS6081-INTE3Z**	**Customer Part Number(s) Affected:** ☒ N/A

Description, Purpose and Effect of Change:

ALTERNATIVE FINAL ELECTRICAL TESTING LOCATIONS AND TEST PLATFORM

In an effort to boost supply chain efficiency and enhance supply security, Semtech has qualified alternative *final electrical testing locations*, *KYEC and GREATEK*, and *test platform*, *Advantest 93K*, for the abovementioned part numbers.

	CURRENT (As-Is)	FUTURE (To-Be)	
Testing Location	ASE - Malaysia	ASE - Malaysia	**KYEC & GREATEK - Taiwan**
Test Platform	LTX Fusion	LTX Fusion	**Advantest 93K**

- KYEC and GREATEK are already approved final electrical testing locations for many high volume products.
- Advantest 93K is a widely used and well-supported test platform in the semiconductor industry.

Change Classification	☐ **Major** ☒ **Minor**	**Impact to Form, Fit, Function**	☐ **Yes** ☒ **No**
Impact to Data Sheet	☐ **Yes** ☒ **No**	**New Revision or Date**	☒ **N/A**

Impact to Performance, Characteristics or Reliability:

- There is no impact to form, fit, function, characteristics, or reliability. The product is not changing.
- The existing test coverage was duplicated and qualified on the Advantest 93K at KYEC and GREATEK.

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Implementation Date	**AUG-26-2026**	**Work Week**	**35**
Last Time Ship (LTS) **Of unchanged product**	**N/A**	**Affecting Lot No. / Serial No. (SN)**	**N/A**
Sample Availability	**MAY-26-2026**	**Qualification Report Availability**	**Included in this PCN**

Supporting Documents for Change Validation/Attachments:

- PRODDOC036129: GS2989, GS6081 KYEC/GREATEK QUALIFICATION REPORT

Quality Assurance		
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SEMTECH

GS2989, GS6081
KYEC/GREATEK QUALIFICATION REPORT

Project:	GS2989, GS6081	**Revision Date:**	4/9/2026
Status:	Active	**Revision:**	1.0
Author(s):	Abubakar Irfan, Arturo Sosa	**Creation Date:**	4/9/2026

Location: Semtech Burlington

Document No: PRODDOC036129

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Revision History

Status	Date	Rev. #	Reviser/Group	Description
Release	04/09/2026	1.0	Abubakar Irfan, Arturo Sosa	Initial Release

1 Process Changes

1.1 Process Change Summary

Semtech is implementing additional sources for final electrical testing of GS2989 to improve security of supply and increase supply chain efficiency. Due to similarity, GS6081 results will be bridged to GS2989. This change will require qualification of a new test platform. Final electrical testing was previously performed at ASE Malaysia on the LTX test platform. Future testing will have the option of testing on a Verigy 93k (V93k) test platform at KYEC or Greatek. This report details the qualification procedure and correlation analysis performed to qualify the new test facility and test platform.

KYEC will be the primary target test facility and will be used to generate qualification results and PCN samples. Greatek will be added as an additional source by bridging as per the approach used under PCN-000783.

Test coverage for both test platforms (LTX and V93K) is similar but not identical.

	Current(single source)	**Future (multiple source)**
Test Location	ASEM	ASEM, KYEC, and Greatek
Test Platform	LTX	V93K and LTX

1.2 Affected Products

Final Product
GS2989-INE3
GS2989-INTE3
GS2989-INTE3Z
GS6081-INE3
GS6081-INTE3
GS6081-INTE3Z

2 Qualification Procedure

2.1 Procedure

Qualification of the V93k test platform at KYEC/GREATEK consisted of 3 main components:

1) Correlation testing

2) Gauge R&R (GR&R) testing

3) Large volume trial lot testing

Correlation testing was completed by testing many devices on the reference tester (LTX) and then testing these same units on the new tester (V93K). The correlation units consisted of both passing units and reject units captured from all major failure bin categories and from multiple foundry lots. The test data was then compared to ensure tester to tester correlation using the metrics detailed in section 3. Gauge R&R testing was performed to verify stability of the new test solution. Finally, a large volume trial lot was tested at KYEC to ensure that the final test program was adequate for mass production testing.

2.2 Qualification Devices

The sample size for correlation of test results on the LTX to the new platform at KYEC is summarized in the following table.

TABLE 1: LIST OF QUALIFICATION PARTS USED

Function	Test Part	Quantity	Comment
Yield Correlation	GS2989	428 units	A mix of bin 1 and 8 were used.
Bin Correlation	GS2989	416 units (failing)	No concerns, results as expected.
GR&R	GS2989	12 units (passing)	Another 12 passing units were available as a backup
Trial lot	GS2989	1000 units	Fresh material
QA run	GS2989	837 units	Yield comparable to historical

3 Analysis

The correlation exercise consisted of several types of analysis to ensure correlation between the Reference Test System (LTX) and the New Test System (V93K). Yield comparison and bin-to-bin correlation were completed over a large volume of correlation parts. Key parametric parameters were compared to ensure the results aligned between both testers. A visual verification of the individual test histograms was also completed to ensure consistent distributions. Based on the correlation results, test limits were adjusted on the new tester to ensure that parts were binned identically on both testers.

3.1 Yield Comparison

Overall yields were compared between the Reference Test System (LTX) and the New Test System (V93K).

Results

The correlation units tested had comparable yield on LTX at ASEM and V93k at KYEC.

3.2 Bin Correlation

The GS2989 final test program consists of multiple pass and fail software bins. The correlation units were tested on both test platforms, and a bin correlation table was created to identify if parts were binned identically on both test systems.

Results

It was found that all parts were binned equivalently on both test solutions.

3.3 Gauge R&R

GR&R analysis is a statistical method of systematically comparing the repeatability and reproducibility variances between two measurement systems. This is accomplished by using ANOVA (Analysis of Variance) to calculate the percentages of the repeatability and reproducibility variance components to the pass windows as defined by the test program limits. The goal of GR&R is to demonstrate that the new system will match or exceed the current benchmark, production test system performance on all critical parameters. The GRR maximum allowed for the total tolerance is 30%, which is an industry standard. This includes combined reproducibility and repeatability.

For this qualification, the GR&R experiment was conducted with the following control factors:

- 1 Test platforms
- 1 Loadboard per platform
- 2 insertions
- Different test sites per Loadboard
- 10 loops for repeatability
- 24 Known good samples

3.3.1 Results

The comparison of the LTX and V93k GRR showed no discrepancies between test results.

Test category	GR&R Total Tolerance Acceptance Criteria	V93K GR&R	Yield comparison	Bin correlation
Continuity	<30%	Pass	Pass	Pass
IIL/IIH	<30%	Pass	Pass	Pass
IDD Current/Power Test	<30%	Pass	Pass	Pass
Die Temperature Test	<30%	Pass	Pass	Pass
Power Test	<30%	Pass	Pass	Pass
Eye Parametrics	<30%	Pass	Pass	Pass
Output Swing	<30%	Pass	Pass	Pass

3.4 Large Volume Trial Test Run

A final trial lot test run of 1000 fresh units was completed at KYEC using the final V93k test program. Review of this data showed that yields and failure Pareto were as expected and comparable to LTX production history data.

4 Conclusion

The V93K test platform provides equivalent test coverage to the ASEM LTX test platform.

The V93K test platform is deemed qualified for production testing of GS2989 and GS6081.