



# PRODUCT / PROCESS CHANGE NOTIFICATION

## PCN-000778

Date: JUL-29-2022

P1/1

Semtech Corporation, 200 Flynn Road, Camarillo CA 93012

### Change Details

<b>Part Number(s) Affected:</b>  <p style="text-align: center;">GS4915-INE3</p>	<b>Customer Part Number(s) Affected:</b> <input checked="" type="checkbox"/> N/A
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**Description, Purpose and Effect of Change:**

To meet customer demands, ASEM, Semtech's supplier, will replace its lead frame for GS4915-IE3 6x6 40L package assembly. The current lead frame's supplier has rendered it obsolete. The current and new lead frames are identical in design, and there is no difference in POD.

Current supplier	New supplier
Dynacraft (DCI)	QPL

<b>Change Classification</b>	<input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor	<b>Impact to Form, Fit, Function</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Impact to Data Sheet</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>New Revision or Date</b>	<input checked="" type="checkbox"/> N/A

**Impact to Performance, Characteristics or Reliability:**

There is no impact to form, fit, function, performance, characteristics, or reliability.

<b>Implementation Date</b>	AUG-29-2022	<b>Work Week</b>	WW36
<b>Last Time Ship (LTS)</b> <small>Of unchanged product</small>	N/A	<b>Affecting Lot No. / Serial No. (SN)</b>	N/A
<b>Sample Availability</b>	JUL-01-2022	<b>Qualification Report Availability</b>	JUL-29-2022

**Supporting Documents for Change Validation/Attachments:**

- PRODDOC026869 Rev. 0 GS4915 (QPL Leadframe) Reliability Qualification Report

### Issuing Authority

<b>Semtech Business Unit:</b>	Signal Integrity Product Group (SIP)	
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# **SEMTECH**

## **GS4915 (QPL Leadframe) Reliability Qualification Report**

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## Revision History

Version	ECO	Date	Modifications
0	ECO-062282	Jun 2022	New Release

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# 1 Background

Semtech's GS4915 currently uses leadframe from Dynacraft (DCI). To meet customer demands, ASEM, Semtech's supplier, will replace the leadframe for GS4915 assembly. The new leadframes will come from QPL and are identical in design and BOM as leadframes from DCI. This qualification intends to qualify the use of QPL leadframe on GS4915 at ASEM

# 2 Product Scope

The only product affected by this change is GS4915. Please find more details about the package type and lot numbers of parts used in this qualification in table 1 below.

Table1: Package type and lot number information for GS4915 used in this qualification.

<b>Semtech Device Codes</b>	GS4915
<b>Package Type</b>	6x6mm 40L QFN
<b>Lot Numbers</b>	7607.1, 7607.2, 7607.3

# 3 Qualification Approach

GS4915 has been fully qualified previously. For more information on the original qualification of GS4915, please refer to the GS4915 Qualification Report (GENDOC-046742)

This qualification only intends to assess the reliability impact of using substrate from QPL on GS4915. Thus, die-level reliability stresses (HTOL, ESD and LU) were not planned. TC, UHAST and HTS were carried out on three lots of 80 devices of each product using QPL substrate at the vendor side. A separate MSL qualification was also carried out at a Semtech facility for information. Please refer to table 1 in section 3 for more details about conditions of each qualification stresses.

## 4 Reliability Qualification Stresses

Table 3: Reliability qualification stresses for GS4915 with QPL substrate

Stress Test	Conditions	Duration	Qualification Vehicle	Sample Size	Result
High Temperature Storage (HTS)	JESD22-A103	500 hours	GS4915	80 pcs/lots * 3 lots	Pass
	Pre and post CSAM T=150 °C				
uHAST	JESD22-A118	96hrs	GS4915	80 pcs/lots * 3 lots	Pass
	MSL3 preconditioning Pre and post CSAM 130 °C, 85 % RH (Condition A)				
TC	JESD22-A104	850 cycles	GS4915	80 pcs/lots * 3 lots	Pass
	MSL3 preconditioning Pre and Post CSAM -55 °C to +125 °C (Condition B)				
Cross Sectional Analysis	Cross section analysis to inspect layer integrity	N/A	GS4915	1	Pass
MSL 3	JSTD020	N/A	GS4915	80 pcs/lots * 3 lots	Pass
	MSL3 preconditioning Pre and post CSAM				

## 5 Conclusion

In conclusion, GS4915 with QPL leadframe has successfully passed required reliability stresses. Thus, QPL substrate can be considered qualified for use in GS4915 at ASEM.