



## PRODUCT / PROCESS CHANGE NOTIFICATION

**PCN-000715**

**Date: APR-21-2022**

P1/3

**Semtech Corporation, 200 Flynn Road, Camarillo CA 93012**

### Change Details

<b>Part Number(s) Affected:</b>  Please see the next page for a list of affected part numbers.	<b>Customer Part Number(s) Affected:</b> <input checked="" type="checkbox"/> N/A
--	--

### Description, Purpose and Effect of Change:

Semtech has qualified ASEM as an alternative source for the assembly of 11x11mm 100L BGA package products.

Process	Current	Alternative
Assembly	ASEK	<b>ASEM</b>
FT (Final Test)	ASEM	ASEM

The change will ensure adequate capacity and flexibility from two qualified assembly sites (ASEK and ASEM). Furthermore, assembly-test turnkey in ASEM will shorten the production lead time.

<b>Change Classification</b>	<input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor	<b>Impact to Form, Fit, Function</b>	<input checked="" type="checkbox"/> Yes <input 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:

Overall qualification meets the requirements for assembly, testing, and reliability. The change has no effect on performance, characteristics, or reliability.

<b>Implementation Date</b>	JUL-21-2022	<b>Work Week</b>	30
<b>Last Time Ship (LTS) Of unchanged product</b>	N/A	<b>Affecting Lot No. / Serial No. (SN)</b>	N/A
<b>Sample Availability</b>	GS2972-IE3, GS2971AIE3, GS2960AIE3	<b>Qualification Report Availability</b>	Available upon request

### Supporting Documents for Change Validation/Attachments:

Please see the following pages.



## PRODUCT / PROCESS CHANGE NOTIFICATION

### PCN-000715

**Date: APR-21-2022**

P2/3

Issuing Authority	
<b>Semtech Business Unit:</b>	Signal Integrity Product Group (SIP)
<b>Semtech Contact Info:</b>	<div style="display: flex; justify-content: space-between;"> <div> <p>Pedro Jr. Bernas pbernas@semtech.com (289) 856-9326 x1162</p> </div> <div style="text-align: right;"> </div> </div>
<b>FOR FURTHER INFORMATION &amp; WORLDWIDE SALES COVERAGE:</b> <a href="http://www.semtech.com/contact/index.html#support">http://www.semtech.com/contact/index.html#support</a>	

### Part Number(s) Affected

1	GS1660-IBE3	13	GS1670AIBE3	25	GS2962-IBTE3
2	GS2960AIBE3	14	GS1671AIBE3	26	GS2970AIBE3
3	GS2961-IBTE3	15	GS1671AIBTE3	27	GS2970AIBTE3
4	GS1661-IBE3	16	GS1672-IBE3	28	GS2970-IBE3
5	GS1670AIBTE3	17	GS1672-IBTE3	29	GS2970-IBTE3
6	GS2971-IBTE3	18	GS2960AIBTE3	30	GS2971AIBE3
7	GS1660AIBE3	19	GS2960-IBE3	31	GS2971AIBTE3
8	GS1660AIBTE3	20	GS2960-IBTE3	32	GS2971-IBE3
9	GS1660-IBTE3	21	GS2961AIBE3	33	GS2972-IBE3
10	GS1661AIBE3	22	GS2961AIBTE3	34	GS2972-IBTE3
11	GS1661AIBTE3	23	GS2961-IBE3		
12	GS1661-IBTE3	24	GS2962-IBE3		

### Bill of Material Comparison

OSAT	ASEK	ASEM	ASEK	ASEM	ASEK	ASEM
Device	GS2972		GS2971A		GS2960A	
Substrate supplier	ASE-Mat	ASE-Mat	UMTC	ASE-Mat	ASE-Mat	ASE-Mat
Epoxy	Ablebond 2100A	Ablebond 2100A	Ablebond 2100A	Ablebond 2100A	Ablebond 2100A	Ablebond 2100A
Wire	1mil Au	1mil Au	1mil Au	1mil Au	1mil Au	1mil Au
Mold compound	KE-G1250LKDS	KE-G1250LKDS	KE-G1250LKDS	KE-G1250LKDS	KE-G1250LKDS	KE-G1250LKDS
Solder ball	SAC 305	SAC 305	SAC 305	SAC 305	SAC 305	SAC 305

- ASEK and ASEM are using identical BOM on die attach epoxy, wire type, mold compound, and solder ball type.
- ASE-Mat substrate, Ablebond 2100A, and KE-G1250 have been qualified and used in by ASEM for mass production of GV7704-IE3 (11x11mm 169L BGA package).



# PRODUCT / PROCESS CHANGE NOTIFICATION

## PCN-000715

Date: APR-21-2022

P3/3

### Process Flow & Machine list

Assembly Process	ASEM	ASEK
Wafer Backgrind	Disco PG300RMA	TSK
Wafer Saw	Disco D641	Disco
Die Attach	ASM 898	Hitachi
Wire Bond	KNS Maxum	K&S
Molding	Daiichi GP-PRO	FICO
PMC	DESPATCH Oven	CSUN
Laser mark	MIT LH100ST	E&R
Solder Ball Mount	Aurigin	Aurigin
Package Saw	Disco D6340	Hanmi

### Reliability qualification stresses for GS2972, GS2971 and GS2960 assembled at ASEM

Stress Test	Conditions	Duration	Qualification Vehicle	Sample Size	Result
High Temperature Storage (HTS)	JESD22-A103	1000 hours	GS2972	80 pcs/lots (3 lots)	Pass
	Pre and post CSAM		GS2971A	80 pcs/lots (3 lots)	Pass
	T=150 °C		GS2960A	80 pcs/lots (3 lots)	Pass
UHAST	JESD22-A118	96hrs	GS2972	80 pcs/lots (3 lots)	Pass
	MSL3 preconditioning		GS2971A	80 pcs/lots (3 lots)	Pass
	Pre and post CSAM 130°C, 85 % RH (Condition A)		GS2960A	80 pcs/lots (3 lots)	Pass
TC	JESD22-A104	850 cycles	GS2972	80 pcs/lots (3 lots)	Pass
	MSL3 preconditioning		GS2971A	80 pcs/lots (3 lots)	Pass
	Pre and Post CSAM -40°C to +125°C (Condition G)		GS2960A	80 pcs/lots (3 lots)	Pass