



PRODUCT / PROCESS CHANGE NOTIFICATION

PCN-000715

Date: APR-21-2022

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Semtech Corporation, 200 Flynn Road, Camarillo CA 93012

Change Details

Part Number(s) Affected:

Please see the next page for a list of affected part numbers.

Customer Part Number(s) Affected: 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	ASEM
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.

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

Implementation Date	JUL-21-2022	Work Week	27
Last Time Ship (LTS) Of unchanged product	N/A	Affecting Lot No. / Serial No. (SN)	N/A
Sample Availability	GS2972-IE3, GS2971AIE3, GS2960AIE3	Qualification Report Availability	Available upon request

Supporting Documents for Change Validation/Attachments:

Please see the following pages.



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

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).



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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