GS2985/GS2986/GS2965
Reliability Qualification Report

Revision History

Version	ECR	Date	Modifications / Changes
1	153200	Nov 2009	Reliability qualification completed
0	152340	July 2009	New document, preliminary report

Contents

1 Device Specifics

1.1 Manufacturing Summary

Table 1.: Manufacturing Summary

Gennum Device Codes	GS2985	GS2986	GS2965
Silicon Fab Technology	Jazz SiGe120 SBC18HA		
Package Assembly	Unisem		
Package Type	64 QFN, 9x9 mm, 0.5 mm pitch	40 QFN, 6x6 mm, 0.5 mm pitch	32 QFN, 5x5 mm, 0.5 mm pitch

1.2 Product Information

The GS2985, GS2986 and GS2965 are multi-rate serial digital reclockers designed to automatically recover the embedded clock from a digital video signal and retime the incoming video data. They will recover the embedded clock signal and retime the data from a SMPTE 424M, SMPTE 292M, or SMPTE 259M-C compliant digital video signal.

The devices shall be fully functional and shall meet all operational specifications over the ambient temperature range -40ºC to +85ºC.

1.3 Process Qualification

The die is manufactured by Jazz using their SiGe120 SBC18HA process. The Jazz process qualification report has been accepted and is stored in GenDoc ID# 48070.

1.4 Product Qualification Approach

The GS2985, GS2986 and GS2965 contain the same die. The features of the GS2985 are a superset of those on the GS2986 and GS2965; therefore, die-level stresses performed on the GS2985 can be bridged to the GS2986 and GS2965. The GS2985, GS2986, and GS2965 use packages from the same package family. The larger package size of the GS2985 means stresses performed on that product can be bridged to the smaller package size variants.

2 Reliability Qualification Stresses

2.1 Environmental Tests

Table 2.: Environmental Tests

Stress	Conditions	Duration	Qualification Vehicle	Sample Size	Failures
High Temperature Operating Life	JESD22-A108 $T_j \geq 125^oC$, $V_{cc} \geq V_{ccmax}$	1000 hours	GS2985	77	0
Temperature Cycling	JESD22-A104 MSL Preconditioning, -55^oC to $+125^oC$ (Condition B)	1000 cycles	GS2985	25	0
Temperature and Humidity Bias	JESD22-A101 MSL Preconditioning, 85^oC/85% RH	1000 hours	GS2985	25	0
High Temperature Storage	JEDSE22-A103 150 ^oC	1000 hours	GS2985	25	0
Pressure Cook Test	JESD22-A102 MSL Preconditioning, 121^oC, 100% RH, 29.7 Psi	96 hours	GS2985	25	0
Moisture Sensitivity Level	J-STD-020 MSL3, $T_{max}=260^oC$		GS2985	75	0

2.2 Electrostatic Discharge and Latch Up Tests

Table 3.: Electrostatic Discharge and Latch Up Tests

Stress	Conditions	Qualification Vehicle	Stress Level	Sample Size	Failures
Human Body Model ESD	JEDEC22-A114	GS2985	4 kV	3	0
Machine Model ESD	JESD22-A115	GS2985	300 V	3	0
Charged Device Model ESD	JESD22-C101	GS2985	900 V	3	0
		GS2986	1250 V	3	0
		GS2965	1500 V	3	0
Latch Up	JESD78 V_{cc}=3.5 V, 5.25 V; +/- 100 mA Level II, Class A	GS2985	25°C	6	0
			85°C	6	0

3 Conclusion

Reliability qualification of the GS2985, GS2986, GS2965 product family is complete. The products are considered fit for sale and customer use.

DOCUMENT IDENTIFICATION

RELIABILITY REPORT
The product is in production. Gennum reserves the right to make changes to the product at any time without notice to improve reliability, function or design, in order to provide the best product possible.

CAUTION

ELECTROSTATIC SENSITIVE DEVICES
DO NOT OPEN PACKAGES OR HANDLE EXCEPT AT A STATIC-FREE WORKSTATION

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