



AH101 & AH102

QUALIFICATION REPORT

I. INTRODUCTION

The AH101 and AH102 devices are medium power gain blocks that offer excellent dynamic range in a low cost surface mount package. The combination of a single supply voltage and an unconditionally stable internally matched device makes them ideal for both narrow band and broadband applications.

II. SCOPE

This report summarizes the reliability qualification of the AH101 and AH102 amplifiers manufactured at the WJ Communications facility in Milpitas, CA and assembled in a SOT-89 plastic package. The process used is our standard H10, 4-inch process.

The reliability data are obtained through the performance of specified accelerated stress tests described in this document.

III. APPLICABLE DOCUMENTS

All the test procedures and test methods are consistent with industry standards. The standards referenced in this document are JEDEC standard 22 and MIL STD 883.

IV. QUALIFICATION TEST PLAN

Level 3 preconditioning was performed in accordance with JEDEC method A113-A for the parts in this qualification.

The AH101, AH102, AH1, AH2, and AH3 are processed using the same process flow and are all packaged in the SOT-89, therefore package-related qualification testing done on one part qualifies the entire family of parts.

Stress or Test	Device Hours/ Cycles	Sample Size	Failed Units	Date	Reference Document	Part Tested
High Temp Op Life (HTOL)	78,000	78	0	2001	JESD22 A108	AH101
Accelerated Biased Humidity (HAST)	7,488	78	0	2001	JESD22 A110	AH101
Temperature Cycle	154,000	154	0	2001	JESD22 A104	AH101
Unbiased Autoclave	9,600	100	0	2001	JESD22 A102	AH101
Physical Dimensions		12	0	2000, 2001	JESD22 B100	AH1, AH3
Mark Permanency		9	0	2000, 2001	JESD22 B107	AH1, AH3
Solderability		101	0	1997, 1999, 2000, 2001	MS883 M2003	AH1, AH3
Lead Integrity		36	0	1997, 1999	JESD22 B105	AH1, AH3
Resistance to soldering heat		32	0	1997	JESD22 B106	AH1
Hi Temp Storage		75	1	1997	JESD22 A103	AH1
HALT		16	0	1997		AH1
Res. To Solvents		15	0	1997		AH1
Vibration		15	0	1997		AH1
Flammability		3	0	1997	IEC 695-2-2	AH1

V. DISCUSSION OF RESULTS

1. HTOL

78 AH101 devices have completed 1000 hours of HTOL with no failures.

2. HAST

78 AH101 devices have completed 96 hours of HAST with no failures.

3. TEMPERATURE CYCLE

154 AH101 devices have completed 1000 temperature cycles with no failures.

4. UNBIASED AUTOCLAVE

100 AH101 devices have completed 96 hours of Autoclave with no failures.

5. HIGH TEMPERATURE STORAGE

75 AH1 units completed 1000 hours of high temperature storage life testing. One part failed during the 1997 qual due to a broken bond wire. The manual bonding process has been changed to auto bonding.

VI. CONCLUSIONS

The Reliability Qualification Data demonstrates that the AH101 and AH102 amplifiers fabricated at the WJ Communications Milpitas facility and assembled in a SOT-89 package demonstrate high reliability and quality levels.