

## Reliability Data Sheet

### Description

This document's reliability data includes the Broadcom reliability test data from the tests done on this product family. All of these products use similar process and materials. The data in [Table 1](#) and [Table 2](#) reflect actual test data for devices. Before stress, all devices are preconditioned at MSL 1 using a solder reflow process (260°C peak temp) and 20 temperature cycles (–55°C to +125°C, 15 min. dwell, 1 min. transfer). This data is taken from testing on Broadcom devices using internal Broadcom processes, material specifications, design standards, and statistical process controls. **This data is not transferable to other manufacturer's similar part types.**

### Definition of Failure

Abnormal resistance (meaning open or short failure) is the definition of failure in this data sheet. Specifically, failure occurs when the device fails contact resistance either high or low, and/or when the device experiences abnormal leakages.

### Reliability Testing

Broadcom subjects the devices to a series of reliability tests (including environmental, mechanical, and electrical tests) to ensure they meet the intended reliability expectation. The following tables show the results of reliability testing conducted by Broadcom over a period of time (as shown in the test conditions).

**Table 1 Mechanical Tests (Testing Done on a Constructional Basis)**

Test Name	Reference Standard	Test Condition	Units Tested	Units Failed
Temp Cycling	JESD-A104	–55°C to 125°C Transfer = 1 min, Dwell = 15 mins 1000 cycles	231	0
Preconditioning	JESD-020 JESD-A113	As per reference standard (to conform to MSL 1)	1155	0

**Table 2 Environmental Tests**

Test Name	Reference Standard	Test Condition	Units Tested	Units Failed
HAST	JESD-A110	T <sub>A</sub> = 130°C, RH = 85% Unbiased, Time = 96 hrs	231	0
Unbiased HAST	JESD-A118	T <sub>A</sub> = 130°C, RH = 85% Unbiased, Time = 96 hrs	231	0
High Temperature Bake	JESD-A103	T <sub>A</sub> = 150°C Unbiased, Time = 1000 hrs	231	0

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