

Reliability Report

Product: **ADIS16220 9.2mm X 9.2mm**
LGA Package Assembly
Transfer to IMI

PCN#: **PCN 10_0181**

Date: **11-February-11**



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RELIABILITY REPORT FOR ADIS16220 9.2mm X 9.22mm packages

Analog Devices
Greensboro Manufacturing
Greensboro, NC

Introduction

This qualification was completed as a requirement for the ADIS16220 9.2mm X 9.2mm LGA Package assembly site transfer from Universal Scientific Inc. (USI) in Taiwan to Integrated Microelectronics Inc. (IMI) in the Philippines.

Product Description

The ADIS16220 is a digital vibration sensor that combines industry – leading MEMS® sensor technology with a signal processor that provides a convenient user interface, optimizes power dissipation and manages user operational controls. The ADIS16220 is packaged in a 9.2 mm x 9.2 mm x 3.9 mm Land Grid Array (LGA) package. All remaining ADIS162XX / 9.2mm x 9.2mm LGA packaged devices, including the ADIS16201, ADIS16203, ADIS16204 and ADIS16209 are similar to The ADIS16220 device in terms of assembly construction process, assembly materials and component configuration and are therefore considered qualified through extension of the ADIS16220.

Device Characteristics

Greensboro Part Number ADIS16220
Process..... Epoxy chip attach on BT laminate substrate
Package Type..... 9.2 mm x 9.2 mm 16 leads Stacked Frame CSP LGA
Encapsulation MaterialHysol FP4470
Die Attach..... Ablestik 84-3J Non-Conductive epoxy
Soldered Component Attach... SN95/Sb5 Solder Paste
Wire Bonding..... 1.0 mil Gold wirebond
Assembly Location..... IMI-Philippines
Test Location ADI Greensboro, NC

Description/Results of Tests Performed

Qualification tests and results appear in Table 1. All qualification samples were electrically tested for all defined parameters at +25°C at each endpoint. The qualification samples consisted of devices from the first engineering build from IMI Philippines.

Table 1: ADI Qualification Results

TEST NAME	TEST METHOD / CONDITIONS	SAMPLE SIZE	RESULTS
Temperature Cycle*	JESD22, Method A104 Condition G -40°C to +125°C 1000 cycles	32	Pass
Temperature/Humidity /Bias*	JESD22, Method A101 130°C / 85%RH 2atm Biased 96 hours	32	Pass
Cross Section Analysis*	GSD00086	10	Pass
Sample wire bond pull data	MIL-STD-883 Test Method 2011	3 devices	Pass
Sample final package physical dimensions	Applicable Product Dimension Specification	3	Pass

*Test samples were subjected to preconditioning per J-STD-020D.1 MSL Level 5 prior to the start of the stress test. Level 5 preconditioning consists of the following:

- Bake 24 Hours @ +125°C.
- Unbiased soak, 48 hours @ +30°C / 60% RH.
- Reflow – 3 passes thru a convection / IR oven for a duration of 10-30 seconds at or above with a peak temperature of +260°C.
- All sample pieces passed post conditioning test.

Conclusion

The ADIS16220, ADIS16201, ADIS16203, ADIS16204 and ADIS16209 manufactured by IMI in the Philippines are accepted for production release.

	Quality Engineer	Quality Engineer Mgr.
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Signed	Signature on file	Signature on file
Date	22-February-11	22-February-11