

ESD Sensitivity of Bulk Acoustic Wave (BAW) Product Produced by TriQuint Semiconductor

BAW devices have a high resilience to Electrostatic Discharge (ESD) at frequencies up to 3500. This document provides typical Human Body Model (HBM) and Machine Model (MM) results for a cross section of BAW product frequencies, topologies and package sizes.

Failure Mode/ESD sensitivity dependence:

- 1st Tier: Frequency
- 2nd Tier: Topology and package size

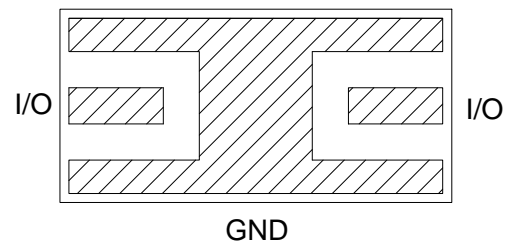
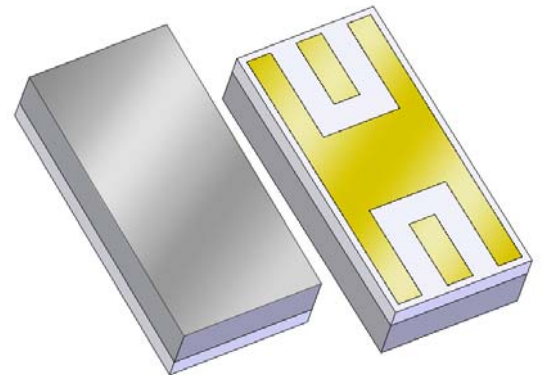
Test Specifications used:

- Human Body Model: JESD22-A114
- Machine Model: JESD22-A115

Factory Precautions:

Applicable to all die level product:

- ESD precautions are implemented on all die level handling and manufacturing.
 - Dissipative and grounded work areas
 - Continuous Monitor
 - Wrist Strap connected to continuous monitor
 - Suitable shipping and storage containers
 - Equipment is either grounded or dissipative.
 - Regular training of staff



Test Methodology & Results:

Test	CRF 392 MHz	SCF 437.75 MHz	LAD 620 MHz	LAD 1030 MHz	LAD 1575 MHz	SCF 1575 MHz	CRF 1575 MHz	CRF 1980 MHz	LAD 3500 MHz	SCF 12500 MHz
HBM Electro Static Discharge @ 2000V	pass	pass	pass	pass	pass	pass	pass	pass	pass	Fail
HBM Electro Static Discharge @ 4000V	pass	pass	pass	pass	pass	pass	pass	pass	pass	Fail
HBM Electro Static Discharge @ 8000V	pass	pass	pass	pass	pass	pass	fail	fail	fail	Fail
HBM Results pass @	8000V	8000V	8000V	8000V	8000V	8000V	4000V	4000V	4000V	400V
MM Electro Static Discharge 200V	pass	pass	pass	pass	pass	pass	Not Tested	pass	pass	not tested
MM Electro Static Discharge 400V	pass	pass	pass	pass	pass	pass	pass	fail	fail	not tested
MM Electro Static Discharge 800V	pass	pass	pass	pass	pass	pass	fail	fail	Not Tested	not tested
MM Electro Static Discharge +800V	pass	Fail @ 1500V	Pass @ 2000V	Fail @ 1000V	Fail @ 2000V	Fail @ 1000V	Not Tested	Not Tested	Not Tested	not tested
MM Results pass @	2000V	1000V	2000V	800V	1600V	800V	400V	200V	200V	not tested

