

ESD SP5.2-2019

ESD Association Standard Practice

ESD SP5.2-2019

Revision and Redesignation of ANSI/ESD STM5.2-2012

***For Electrostatic Discharge
Sensitivity Testing –***

***Machine Model (MM) –
Component Level***



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***ESD Association Standard Practice
for Electrostatic Discharge Sensitivity Testing –
Machine Model (MM) –
Component Level***

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EOS/ESD Association, Inc.



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FOREWORD

This document defines a standard practice¹ that was originally intended to simulate an electrostatic discharge (ESD) event occurring from a low resistance source. However, component damage caused by the machine model (MM) described herein is similar to that caused by the human body model (HBM), but this damage occurs at a significantly lower voltage. Other forms of ESD-related component damage, such as that induced by the charged device model (CDM), may result in a different failure signature for some components.

To fully characterize a component's electrostatic discharge susceptibility, it should be tested to the following two ESD test standards:

- Human Body Model
- Charged Device Model

EOS/ESD Association, Inc. standards ANSI/ESDA/JEDEC JS-001 and ANSI/ESDA/JEDEC JS-002 contain the requirements for HBM and CDM testing, respectively.

It should be noted that contact of devices to charged metal can occur, and is a threat if proper precautions are not taken. The CDM test method is the better method for simulating metal-metal discharges arising from the discharging of charged metal objects to devices at different potentials.

This model can be useful for producing HBM-like ESD effects at lower voltages and for failure mode determination. The method produces results which are closely related to HBM and produces similar failure modes.

This document was originally designated ESD S5.2-1994 and approved on June 22, 1994. ANSI/ESD STM5.2-1999 was a revision, re-designation of ESD S5.2-1994, and approved on May 16, 1999. ANSI/ESD S5.2-2009 was a revision, re-designation of ANSI/ESD STM5.2-1999, and approved on September 16, 2009. ANSI/ESD STM5.2-2012 was a revision, re-designation of ANSI/ESD S5.2-2009 and approved on February 3, 2012. ESD SP5.2-2019 is a revision, re-designation of ANSI/ESD STM5.2-2012 and approved on February 22, 2019.

¹ **ESD Association Standard Practice:** A procedure for performing one or more operations or functions that may or may not yield a test result. Note, if a test result is obtained it may not be reproducible.

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