

ANSI/ESD S8.1-2017

ESD Association Standard

ANSI/ESD S8.1-2017

Revision of ANSI/ESD S8.1-2012

*For the Protection of Electrostatic
Discharge Susceptible Items –*

Symbols – ESD Awareness



*Electrostatic Discharge Association
7900 Turin Road, Bldg 3
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*An American National Standard
Approved May 11, 2017*

***ESD Association Standard
for Protection of Electrostatic Discharge
Susceptible Items –***

***Symbols –
ESD Awareness***

Approved December 7, 2016
EOS/ESD Association, Inc.



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FOREWORD

While a number of symbols have been used over time to designate that an electronic component, device, or item is susceptible to some level of ESD damage, the most recognized symbol is a triangle around a reaching hand that is covered by a diagonal slash. Another symbol is used to designate that a material, item or product has some electrostatic control property as defined by the manufacturer. The protective symbol has a hand inside a triangle without the slash across the hand. An arc is placed around the outside of the triangle to suggest the idea of protection. A third symbol is used to mark the location of a common point ground.

These three symbols have been in wide use since the early 1990's and have gained acceptance globally. The symbols have been used by military and commercial organizations and appear in international standards related to electrostatic control.

This standard¹ was originally designated EOS/ESD S8.1-1993 and approved on June 9, 1993. ANSI/ESD S8.1-2001 was a reaffirmation of EOS/ESD S8.1-1993 and was approved on September 9, 2001. ANSI/ESD S8.1-2007 was a reaffirmation of ANSI/ESD S8.1-2001 and was approved on September 16, 2007. ANSI/ESD S8.1-2012 is a revision of ANSI/ESD S8.1-2007 and was approved on June 10, 2012. ANSI/ESD S8.1-2017 is a revision of ANSI/ESD S8.1-2012 and was approved on December 7, 2016. ANSI/ESD S8.1-2017 was reviewed and revised by EOS/ESD Association, Inc.'s Technical and Administrative Support Committee.

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¹ **ESD Association Standards (S):** A precise statement of a set of requirements to be satisfied by a material, product, system or process that also specifies the procedures for determining whether each of the requirements is satisfied.

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**ESD Association Standard for the Protection of Electrostatic Discharge Susceptible Items
– Symbols – ESD Awareness****1.0 PURPOSE AND SCOPE****1.1 Purpose**

The purpose of this document is to standardize commonly available and in-use symbols and to clarify the meaning of each of these symbols.

The correct usage of symbols will eliminate confusion between symbols that indicate that an item or material is ESD susceptible and those that indicate that an item is designed to afford some degree of ESD protection. This symbol standard is developed in accordance with international graphical guidelines and standards.

1.2 Scope

Three symbols are covered in this document. The first indicates that an electrical or electronic device or assembly is susceptible to damage from an ESD event if not properly handled. The second indicates that the material or product on which the symbol is displayed is intended to provide some level of protection to ESD susceptible devices or assemblies. The third indicates the location of an ESD common point ground terminal or connection point.

The application of these ESD symbols on products is at the discretion of the supplier and does not constitute or imply a specific level of product performance.

2.0 REFERENCED PUBLICATIONS

Unless otherwise specified, the following documents of the latest issue, revision or amendment form a part of this standard to the extent specified herein:

ESD ADV1.0, ESD Association Glossary of Terms²

ANSI/ESDA/JEDEC JS-001 – ESDA/JEDEC Joint Standard for Electrostatic Discharge Sensitivity Testing - Human Body Model (HBM) – Component Level²

ANSI/ESD S6.1, Grounding²

Softcopy artwork is available at www.esda.org.

3.0 DEFINITIONS

The following definition shall apply for the purposes of this standard in addition to those specified in the ESD Association Glossary of Terms, available for complimentary download at www.esda.org:

common point ground. A grounded device or location where the conductors of one or more technical elements are bonded.

² EOS/ESD Association, Inc., 7900 Turin Road, Bldg. 3, Rome, NY 13440; Ph: 315-339-6937;
www.esda.org

4.0 ESD SUSCEPTIBILITY SYMBOL

The ESD susceptibility symbol incorporates a reaching hand in a triangle with a slash through it and is used to indicate that an electrical or electronic device or assembly is susceptible to damage from an ESD event.

4.1 Application

The ESD susceptibility symbol should be used on assemblies and devices that have been identified as being sensitive to ESD events.

The symbol shall not be used on materials designed for use in ESD protective areas, such as smocks, seating, worksurface materials, tools and equipment, packaging materials, or personnel grounding equipment. Refer to Section 5.0 of this standard.

The symbol may be incorporated on a sticker, label or seal used to close ESD protective packaging in order to indicate that materials inside the package are ESD susceptible.

4.2 Format

The symbol is a reaching hand with defined fingers and fingernail, in a contrasting triangle with a slash in front of the hand. See Figure 1A.

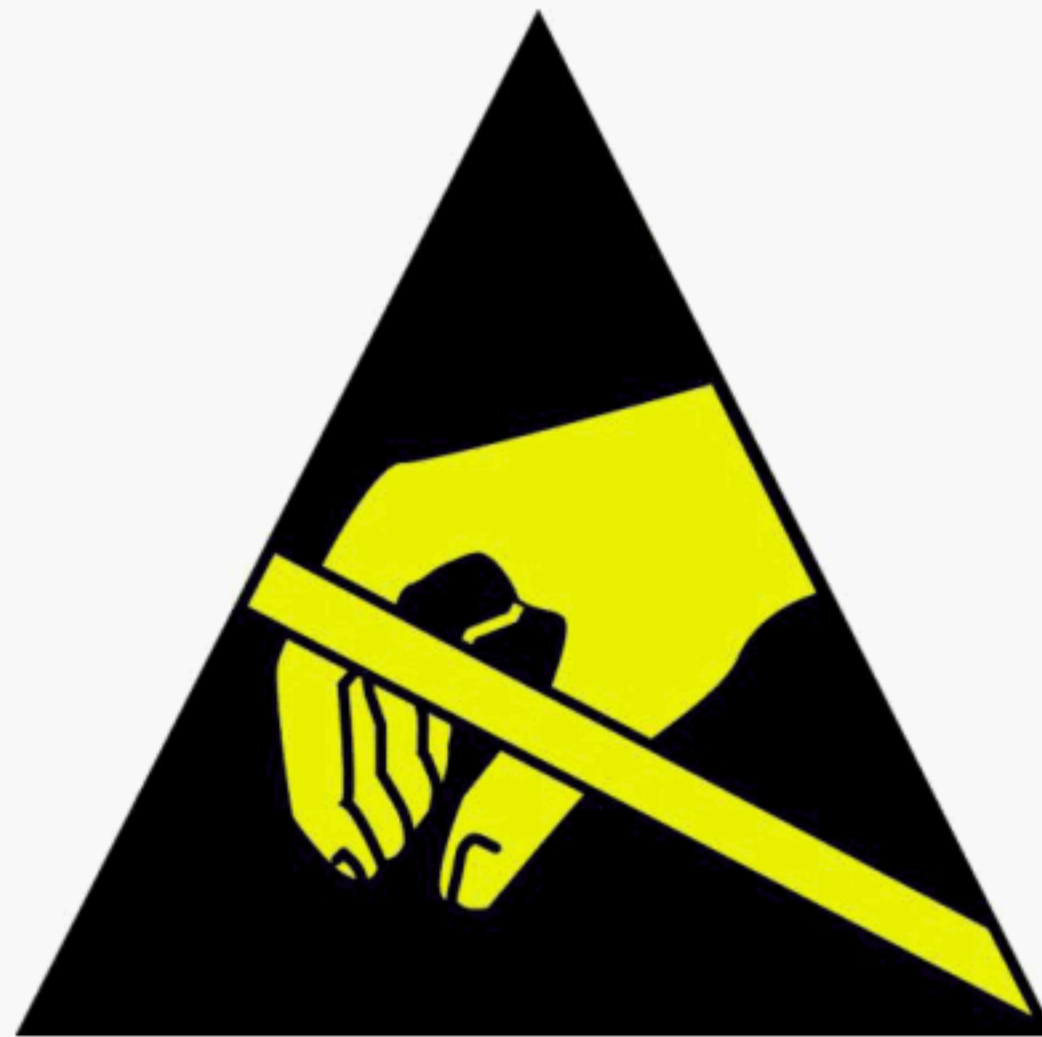


Figure 1A: ESD Susceptibility Symbol

When it is necessary to shrink the symbol due to the size of the item on which the symbol is placed, all detail possible should be included in the symbol. This symbol should not be decreased in size to less than 12 mm x 12 mm (0.5 inch x 0.5 inch), except in cases where available space is severely limited. See Figure 1B.



Figure 1B: Size Constraints for ESD Susceptibility Symbol

This symbol may incorporate an alphanumeric character to indicate the ESD sensitivity (ESDS) classification of the device or assembly. These classifications should be in accordance with the ESD Sensitivity Components Classification of the referenced test standard. The ESDS classification, if used, should be placed in the central area of the symbol as indicated in Figure 1C.

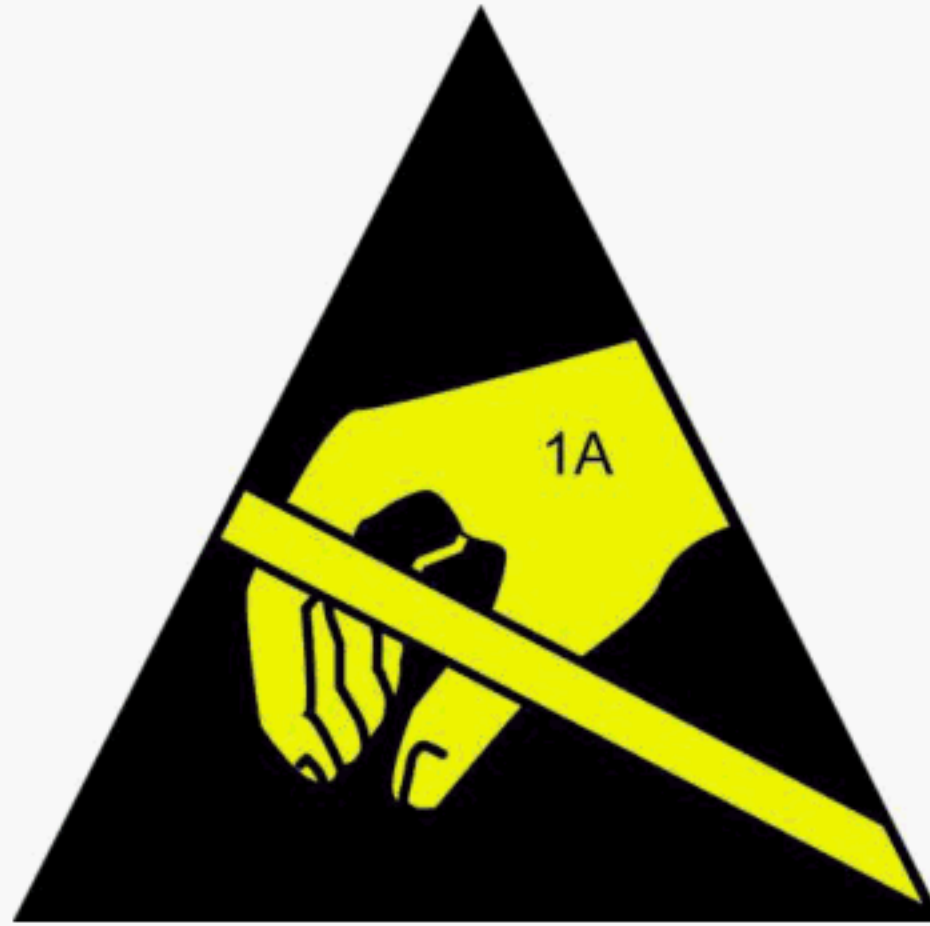


Figure 1C: ESD Susceptibility Symbol with Component Classification

4.2.1 Color

The color red shall not be used because it suggests a hazard to personnel.

The preferred color is a yellow hand and slash on a black background.

5.0 ESD PROTECTIVE SYMBOL

The ESD protective symbol differs from the ESD susceptibility symbol by the addition of an arc around the outside of the triangle and the omission of the slash across the hand and the triangle.

5.1 Application

The ESD protective symbol may be used to identify items that are specifically designed to provide ESD protection for ESDS assemblies and devices. Examples of these are packaging, ESD protective clothing, and personnel grounding equipment such as wrist straps, footwear, and footwear grounding devices. The ESD protective symbol may also be used on items designed to replace static generative materials. Examples of these items are ESD protective work station equipment, trash can liners, and chairs. The item is to be ESD protective or non-static generative by design.

The symbol shall not be used on ESD susceptible devices or assemblies. Refer to Section 4.0 of this standard.

5.2 Format

The symbol is a reaching hand with defined fingers and fingernail, in a contrasting triangle, surrounded by a bold arc. See Figure 2A.



Figure 2A: ESD Protective Symbol

When it is necessary to shrink the symbol due to the size of the item on which the symbol is placed, this symbol may be simplified as a function of the size. All detail possible should be included in the symbol. This symbol should not be decreased in size to less than 12 mm x 12 mm (0.5 inch x 0.5 inch), except in cases where available space is severely limited. See Figure 2B.



Figure 2B: Size Constraint for ESD Protective Symbol

The ESD protective symbol may be printed, embossed, hot stamped, silk screened, or incorporated through other mechanisms. In addition to the symbol, the manufacturer's name, date of manufacture, or lot date code may be included where applicable. See Figure 2C.



Figure 2C: ESD Protective Symbol with Identification

5.2.1 Color

The color red shall not be used because it suggests a hazard to personnel. The preferred color is a yellow hand on a black background with a black arc.

6.0 ESD COMMON POINT GROUND SYMBOL

This symbol is established to indicate an ESD common point ground, which is described in ANSI/ESD S6.1.

6.1 Application

The ESD common point ground symbol should be used to indicate the location of an acceptable common point ground as described in ANSI/ESD S6.1.

6.2 Format

This symbol consists of a bold outer circle inside of which are the words ESD COMMON POINT GROUND, in bold type. Inside of that are two thick contrasting circles and one thick circle that may fill the center or extend to the center where a snap, plug or other fastener may be connected. See Figure 3A.



Figure 3A: ESD Common Point Ground

When it is necessary to shrink the symbol due to the size of the item on which the symbol is placed, this symbol may be simplified as a function of the size. All detail possible should be included in the symbol. This symbol should not be decreased in size to less than 12 mm x 12 mm (0.5 inch x 0.5 inch), except in cases where available space is severely limited. See Figure 3B.



Figure 3B: Size Constraint for ESD Common Point Ground

6.2.1 Color

There is no preferred color; however, the color red shall not be used because it suggests a hazard to personnel.

(This annex is not part of ESD Association Standard ANSI/ESD S8.1-2017)

ANNEX A (INFORMATIVE) – BIBLIOGRAPHY

IEC 60417, Graphical Symbols for Use on Equipment

IEC 61340-5-2, Electrostatics – Part 5-2: Protection of Electronic Devices from Electrostatic Phenomena – User Guide

JEDEC JESD471, Symbol and Label for Electrostatic Sensitive Devices

ESD TR20.20, Technical Report for the Development of an Electrostatic Discharge Control Program for the Protection of Electronic Parts, Assemblies and Equipment – Handbook

(This annex is not part of ESD Association Standard ANSI/ESD S8.1-2017)

ANNEX B (INFORMATIVE) – ANSI/ESD S8.1 REVISION HISTORY

B.1 2012 Version

The 2012 edition of ANSI/ESD S8.1 had minor revisions to the document text to update it from the 2007 version.

The Foreword was updated to remove very early statements about why the document was needed. Since the document has been in use for nearly 20 years, the Foreword statements were quite dated and needed revision. No technical information was removed or added to the Foreword.

The Scope was modified to update language and application information.

Section 2.0 – Referenced Publications was updated to include new standards where the symbology information is relevant.

Section 3.0 – Definitions was added to include definition for common point ground.

Section 4.1 – Application was updated for language.

Section 4.2 – The Format section was updated for language and standards reference.

Section 5.1 – Application was updated to include guidelines for use of the Protection Symbol.

B.2 2017 Version

The 2017 edition of ANSI/ESD S8.1 had minor revisions to the document text to update it from the 2012 version.

The symbol images were updated to reflect the recommended color format.

Figure 3B and a paragraph explaining size constraints were added to Section 6.2.

Removed sentence “The choice of color for this symbol is arbitrary.” from Section 5.2.1.

Changed the sentence “The choice of color for this symbol is arbitrary, but black or white on green is suggested” in Section 6.2.1 to “There is no preferred color; however, the color red shall not be used because it suggests a hazard to personnel.”

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