



EIA STANDARD

ANSI/EIA-747-B

Approved: February 4, 2014

Adhesive Backed Punched Plastic Carrier Taping of Singulated Bare Die and Other Surface Mount Components for Automatic Handling of Devices Generally Less Than 1.0mm Thick

EIA-747-B

(Revision of EIA-747-A)

February 2014



Documents

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(From Standards Proposal No. 5254, formulated under the cognizance of the Automated Component Handling Committee.

Published by

©Electronic Components Industry Association 2014
Engineering Department
2214 Rock Hill Road, Suite 265
Herndon, VA 20170

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**ADHESIVE BACKED PUNCHED PLASTIC CARRIER TAPING OF
SINGULATED BARE DIE AND OTHER SURFACE MOUNT
COMPONENTS FOR AUTOMATIC HANDLING OF DEVICES
GENERALLY LESS THAN 1.0mm THICK**

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1. SCOPE

This Standard covers requirements for 8mm, 12mm, 16mm and 24mm taping of surface mount components generally less than 1.0mm thick and requiring high precision taping for automatic handling of devices such as singulated bare die and other surface mount components. Refer to EIA-481 for the current Industry Standard for 8mm and 12 mm punched and 8mm to 24mm embossed taping requirements.

2. INTRODUCTION

This Standard was formulated to provide dimensions and tolerances necessary to tape surface mount components generally less than 1.0mm thick so that they may be automatically handled. The tape system described herein requires some explanation of the coordinate system and tape parameters since, although it is similar to punched carrier tape which has cavities sized to the component dimensions, this tape system uses standard compartment sizes much larger than the component, the orientation and repeatable positioning of which is fixed by being placed with respect to standard tape coordinate dimensions on a backing of adhesive film. Component placement accuracy is not determined by the dimensions of the tape itself but is determined during component taping, when the component is placed into the tape relative to the sprocket or index hole.

3. APPLICABLE DOCUMENTS

Unless otherwise specified, the following documents form a part of this Standard to the extent specified herein:

EIA-383 "Preparation for the Delivery of Electrical and Electronic Components"

EIA-481 "8 mm Through 200 mm Embossed Carrier Taping and 8 mm & 12 mm Punched Carrier Taping of Surface Mount Components for Automatic Handling"

EIA-541 "Packaging Material Standards for ESD Sensitive Items"

EIA-556 "Outer Shipping Container Bar Code Label Standard"

EIA-583 "Packaging Material Standards for Moisture Sensitive Items"

EIA-624 "Electronics Industries Association-Product Package Bar Code Label Standard for Non-Retail Applications"

4. REQUIREMENTS

- 4.1 Taped components must meet the requirements defined in the Figures and Tables presented herein.
- 4.1.1 Procurement documents and quotation requests shall include the following information as applicable:
- a) Reference to this Standard by Title and Number.
 - b) Taping quality requirements including maximum number of missing parts.
 - c) Container and reel marking requirements (including bar code labelling, if required) and reel diameter. (See Note 3, Table 2)
 - d) Shipping conditions, storage conditions and storage time.
 - e) Component orientation with respect to User Direction of Unreeling. See Fig. 1.
 - f) ESD protection requirements, if any.
 - g) Smaller tolerances for dimension criteria described in Subclause 4.13, 4.14, and 6.6, when maximum repeatability of component location at the pick point is imperative to the User's assembly process(es).
- 4.1.2 Based on the tape thickness T and the virtual boundary compartment pitch P_1 (see Fig. 3) as well as the style and characteristics of the adhesive backing used, the following must be considered when preparing the procurement documents and quotation requests as applicable:
- a) If T (Fig. 3 (sketch A) and Table 2) exceeds 1.1mm or if the component/compartment pitch P_1 (Fig.5) is 2.0mm, the tape may not feed through all tape feeders.
 - b) If the tape feeders do not incorporate push-up pins, the components may not release from the adhesive backing when pickup is attempted.
- 4.4 Components are to be prevented from falling off the adhesive backing of the carrier tape and shall remain in fixed position for automatic handling. Components shall be firmly affixed to the adhesive backing. No lateral or rotational movement of the component is allowed after placement on the adhesive backing.
- 4.5 During de-reeling components shall be capable of clean release from the carrier tape, without damage or adhesive residue.
- 4.6 The adhesive backing shall not extend over the edge of the punched plastic carrier, nor cover any part of the sprocket holes.
- 4.7 Tapes in adjacent layers shall not stick together when wound on the carrier reel.