NEDA

PUBLICATION

Handling Guidelines for the Transference of Tray Packaged IC's

---

NIGP 106.01

Revised March 1997

NATIONAL ELECTRONIC DISTRIBUTORS ASSOCIATION

Industry Guidelines

NOTICE

NEDA Industry Guidelines and Publications contain material that has been prepared, progressively reviewed, and approved through various NEDA sponsored industry task forces comprised of NEDA member distributors and manufacturers and subsequently reviewed and approved by the NEDA Board of Directors.

NEDA Industry Guidelines and Publications are designed to serve the public interest including electronic component distributors through the promotion of standardized practices between manufacturers and distributors resulting in improved efficiency, profitability and product quality. Existence of such guidelines shall not in any respect preclude any member or nonmember of NEDA from selling or manufacturing products not in conformance to such guidelines, nor shall the existence of such guidelines preclude their voluntary use by those other than NEDA members, whether the guideline is to be used either domestically or internationally.

NEDA does not assume any liability or obligation whatever to parties adopting NEDA Industry Guidelines and Publications.

Inquiries, comments and suggestions relative to the content of this NEDA Industry Guideline should be addressed to NEDA headquarters.

Published by

NATIONAL ELECTRONIC DISTRIBUTORS ASSOCIATION
1111 Alderman Drive, Suite 400
Alpharetta, GA 30005
(678) 393-9990

Copyright 1997

Printed in U.S.A.

All rights reserved

HANDLING GUIDELINES
FOR THE TRANSFERENCE
OF IC's PACKAGES

1. Purpose

This guideline is to establish proper handling procedures when transferring tray packaged IC's from one tray to another. The term "tray" refers to flat containers for holding bare IC's securely.

2. Scope

These guidelines are recommended for use by all distributors, suppliers and end users who handle tray packaged IC's.

3. Definitions

3.1. Tray	A tray for this application is considered to be any container, other than tubes, specifically designed to hold IC's.
3.2. "Full" Tray	The term designated for trays from which the IC's are being transferred. (It does not imply that every pocket of the tray is occupied.)
3.3. Cover Tray	An identical empty tray or a cover specifically designed to match and mate with the receiving tray.

4. Reference Documents

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

JESD 42 "Requirements for Handling Electrostatic Sensitive Devices (ESD)"

NIGP 105.00 "Handling Guidelines for Moisture Sensitive Plastic Surface Mount Components".

5. Background

IC's are susceptible to lead and other mechanical damage during handling. This handling procedure outlines the recommended methods for transferring IC's from one tray to another.

6. Equipment and Materials

6.1. Equipment

6.1.1. Automatic or Semi-automatic pick-and-place machine
6.1.2. Manual or Electric vacuum pen/wand
6.1.3. Strapping Machine

6.2. Materials

6.2.1. Trays and Covers
6.2.2. Straps or other banding material
6.2.3. Pick-up tips (made of rubber or similar material) of various sizes.

7. Procedures

CAUTION: 1. Appropriate ESD handling procedures must be followed when handling or storing these ESD sensitive devices.

2. Follow handling guidelines outlined in NIGP 105.00, "Handling Guidelines for Moisture Sensitive Plastic Surface Mount Components" where applicable.

7.1. MANUAL TRAY TO TRAY TRANSFER

7.1.1. Place the banded stack of trays on a flat surface and remove the banding from around the trays, being careful not to jar the tray stack.

7.1.2. Select an empty tray that is identical to the tray that the part was originally packaged by the manufacturer. This means matching tray manufacturer and tray part number.

7.1.3. Place the empty tray adjacent to the stack of "full" trays. (This will minimize the travel distance during the transfer). Make sure that the pin 1 orientation corners (if present) of both the "full" and empty trays are in the same direction.

7.1.4. Remove the cover tray or cover from the stack and inspect the packages in the first "full" tray for obvious visual/mechanical damage. (Follow the same procedure for each subsequent "full" tray.)

7.1.5. If components are damaged, either, carefully re-strap the complete tray stack per 7.1.13. or remove the defective parts and then dispose of the product per normal incoming procedure for non-conforming material.

7.1.6. Select the appropriate pick-up tip (generally larger diameter tip for the larger packages) and attach it to the end of the vacuum pen/wand.

7.1.7. Carefully bring the pick-up tip in contact with the surface of the IC package and activate the vacuum pressure.

7.1.8. Carefully lift the package vertically out of the pocket of the tray, and move it across to the empty tray, accurately lining-up the package above one of the empty pockets. Carefully lower the part into the same pocket, making sure that the leads are not in contact with any surface of the tray. Release the vacuum pressure.

7.1.9. It is recommended that the packages are loaded in each tray, beginning in the lower right-hand corner and moving up each column in succession.

7.1.10. If any package is accidentally dropped or damaged, during the transfer operation, discard the part.

7.1.11. Make sure that the pin 1 orientation on the component is aligned with the pin 1 marker on the tray, if present. The pin 1 orientation must be in the same direction in the same tray and in the same stack of trays for all packages.

7.1.12. Repeat the steps 7.1.7. and 7.1.8. until the desired number of parts have been transferred from the “full” tray to the new tray. Carefully cover the newly loaded tray with a cover tray, or cover.

7.1.13. Re-band the stack of remaining “full” trays. Do the same with the newly loaded trays in a manner that ensures sufficient snugness, inelasticity and durability of the tray stack in order to prevent the trays from partially separating, which can result in device leads becoming damaged during shipping and handling.

7.1.14. Pack the newly loaded and banded stack of trays using guidelines in NIGP 105.00, “Handling Guidelines for Moisture Sensitive Plastic Surface Mount Components”, if applicable.

7.2 SEMI-AUTOMATIC / AUTOMATIC PICK-AND-PLACE TRAY TO TRAY TRANSFER

7.2.1. Set-up the equipment per manufacturer’s instructions.

7.2.2. Follow the manufacturer’s instruction for the operation of the machine.

7.2.3. Adhere to all the applicable steps outlined in Section 7.1.