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Revision History

Revision	Date	Item/Section	Author/Department	Changes
1.0	2012-12-01	All pages	L. Doni/Quality	Initial Release
1.1	2013-31-01	2.1 and 1.1	L.Doni/Quality	Pin1 Orientation for tray and reel added Remark about anti static material added Picture of shield bag with tray, etc. added
1.2	2013-04-04	1.1, 2.1, 2.2	L.Doni/Quality	Added maximum warpage of tray Added more detailed information about reel dimensions Added information about humidity indicator etc. for reel
1.3	2013-07-06	2.1, 2.2	L.Doni/Quality	Added tape leader and trail dimensions Added surface resistivity
1.4	2014-29.08	1.2	T Haywood/Quality	Added desiccant and humidity indicator card to tray package section
1.5	2015-28.01	3	L.Doni/Quality	Added MSL level Added INAP395R to document

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Scope of document

This document describes the packing details for tray and tape and reel. The Moisture Sensitivity Level is also defined in the document.

It is valid for the following products which have all a LQFP100 EP 14X14 package

Inova Device ID
INAP375T
INAP375R
INAP395R

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1. Tray

Tray size is 90 LQFP100 14x14 devices per tray.

1.1 Tray Drawing

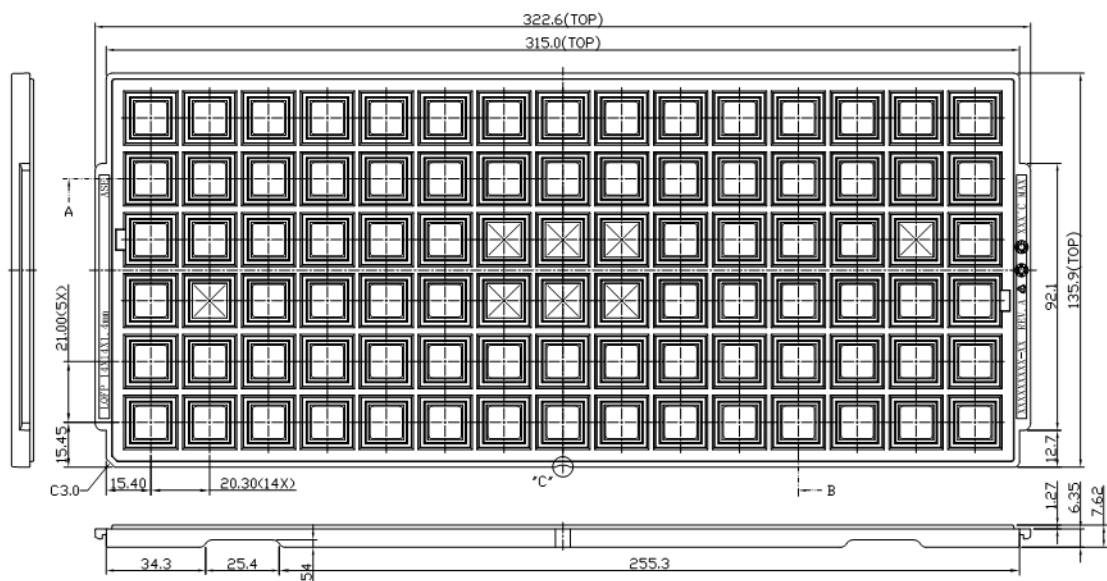


Figure 1 Outer dimension of tray

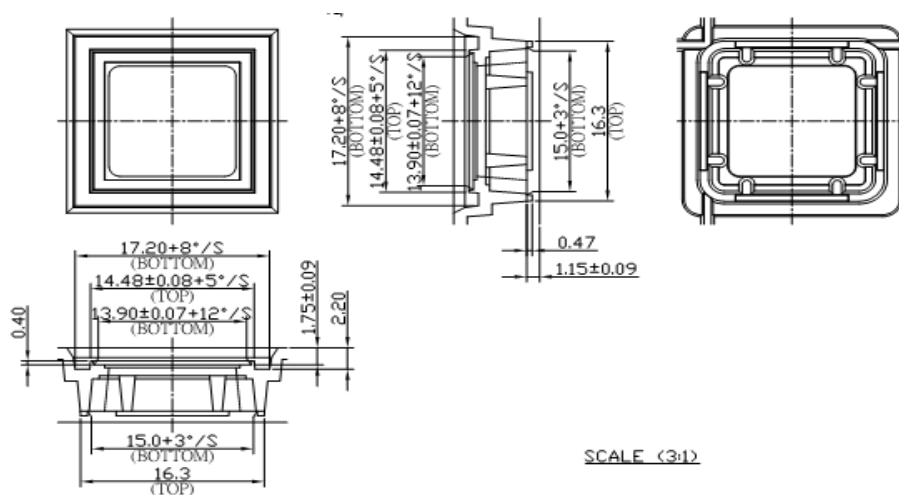


Figure2 Dimensions of tray cup

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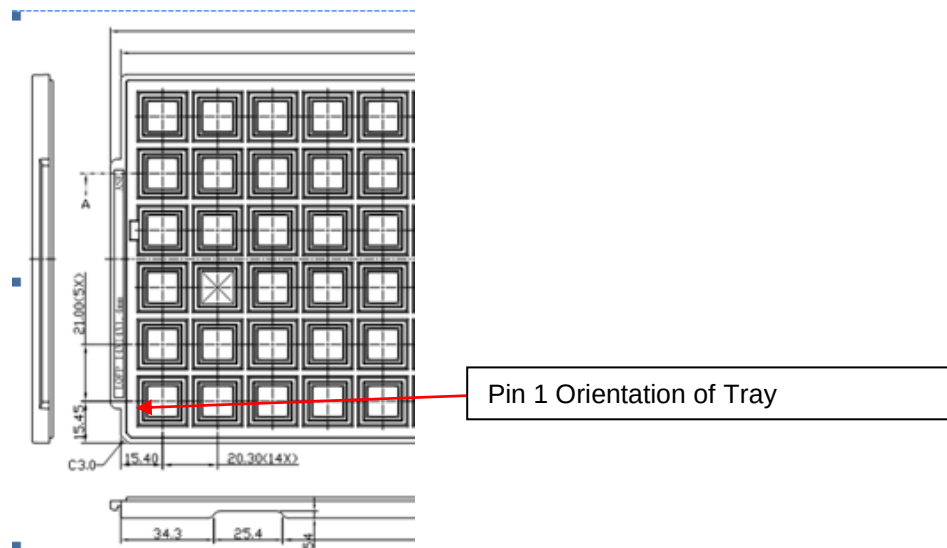


Figure 3 Pin 1 orientation of tray

The warpage of the trays is < 0.76mm

1.2 Packing of trays

The parts and the trays are baked and dry sealed. MSL is 3. Each packing unit is labeled.



Figure 4 Label of tray

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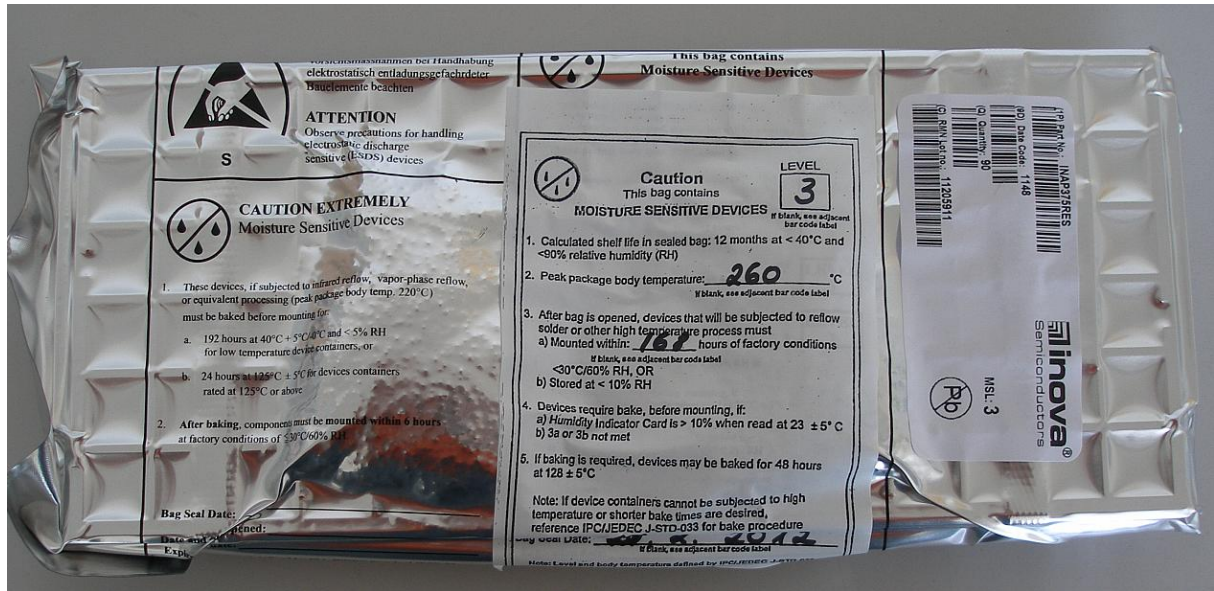


Figure 5 ESD protective dry bag for a tray

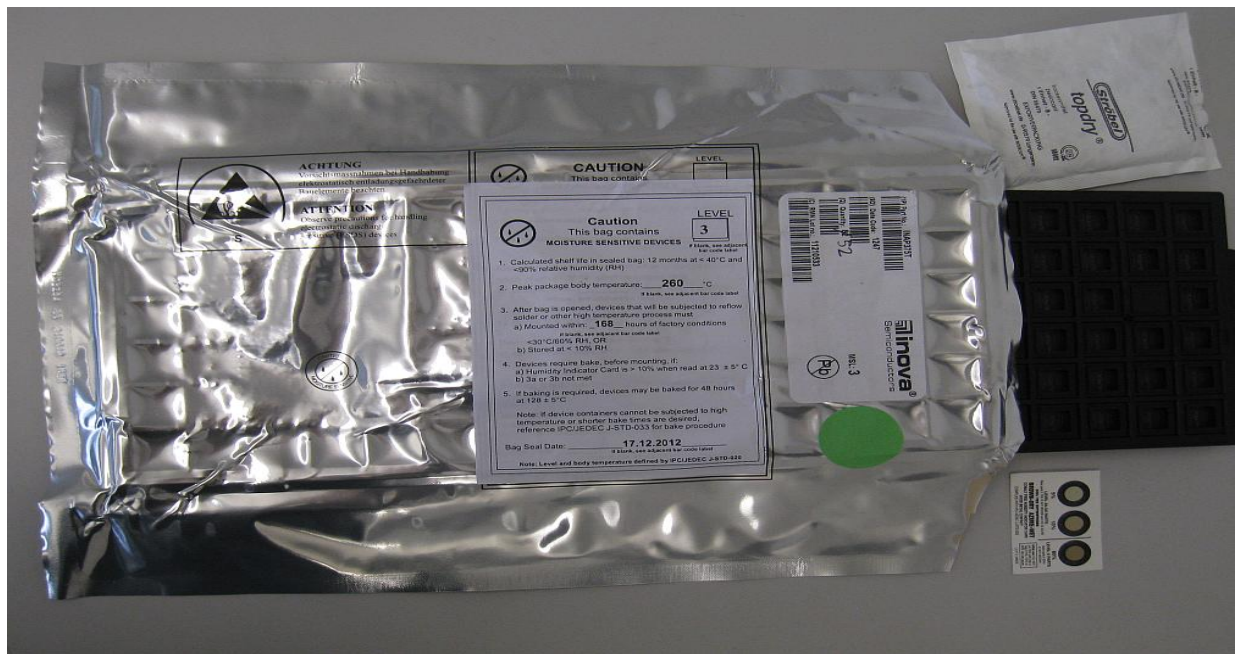


Figure 6 Opened ESD bag with contents

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The boxes in which the trays are placed vary depending on the number of devices that have been ordered. Box label is identical to dry bag label.

Tray and packing material are anti static material.

A desiccant and humidity indicator is packed in the dry bag.

The tray is heat resistant up to 125°C.

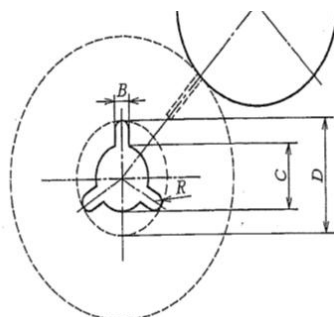


Figure 9 Reel hole Dimensions

Real Hole Dimension (mm)			
B	1.5	More than 1.5mm	2.0 mm $\pm$ 0.5mm
D	20.2	More than 20.2mm	21.0 mm $\pm$ 0.8mm
C	13	More than 13.0mm	13.0 mm $\pm$ 0.2mm
R	0.75	0.5 * B	1.0 mm

Table2 Reel hole dimension detailed

2.2 Tape and Reel Surface Resistivity

Tape: Surface Resistivity ASTM D-257 10^5 ohms/sq
Surface Tape: Surface Resistivity ASTM D257 $\leq 10^{11}$ Ohms/ sq.
Reel: Below 10^{12} ohms/sq

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2.3 Packing of Reels



Figure 10 Label of dry bag and outer box



Figure 11 ESD protective dry bag of reel

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Reel and packing material are of anti static material.
Packing also contains desiccant and humidity indicator card.



Figure 12 Contents of dry bag for reel

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Figure 13 Packing of one reel

Box label is identical to reel label.

3. Moisture Sensitivity Level of Device

The moisture sensitivity level of the devices is as following

Device ID	MSL
INAP375T	3
INAP375R	3
INAP395R	3

Table2 Overview of Moisture Sensitivity Level

3.1 Shelf Life in Sealed Bag

The shelf life of devices in sealed bags is 12 months when stored at <40°C and <90% RH.

3.2 Shelf Life after Opening of Bag

The shelf life after opening the sealed bag is 168 hours at <30°C and 60% RH

3.3 Baking of devices

The devices need to be baked when

- The humidity indicator is $\geq 10\%$ at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$
- The shelf life after opening the sealed bag has expired

If bake is required, the devices may be baked for 48hours at $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$