

Espressif's Chip-Packing Information



Version 1.2
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About This Guide

This document summarizes the packing requirements of Espressif's chip products, including the packing method, packing-material dimensions, standard packing quantity, labels, dry-packing requirements and marking conventions.

Chapter	Title	Content
Chapter 1	Tape and Reel Packing	Dimensions of carrier tape and reel.
Chapter 2	Labels and Symbols	Explanation of labels and symbols attached to reel, moisture barrier bag (MBB) and pizza box.
Chapter 3	Dry-Packing Requirements	Dry-Packing requirements for Espressif's products.
Chapter 4	Marking Conventions	Espressif's chipset marking conventions.

Release Notes

Date	Version	Release notes
2017.06	V1.0	Initial release.
2017.07	V1.1	Corrected a typo in Table 1-2. Reel Dimensions: The quantity per reel for 6 * 6 package is changed to 2,000.
2017.08	V1.2	Changed the quantity per reel for 6 * 6 package to 3,000 in Table 1-2. Reel Dimensions.

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1. Tape and Reel Packing

1.1. Tape

Table 1-1 shows the dimensions of the carrier tape.

Table 1-1. Carrier Tape Dimensions (Unit: mm)

Package	Carrier Tape Width (W)	Cavity Pitch (P ₁)	Cavity Width (A ₀)	Cavity Length (B ₀)	Cavity Depth (K ₀)
5 * 5	12.0 ± 0.30	8.0 ± 0.10	5.30 ± 0.10	5.30 ± 0.10	1.10 ± 0.10
6 * 6	16.0 ± 0.30	12.0 ± 0.10	6.30 ± 0.10	6.30 ± 0.10	1.10 ± 0.10

Note:

The surface resistance of the carrier tape is $10^4 \sim 10^{11}$ ohms.

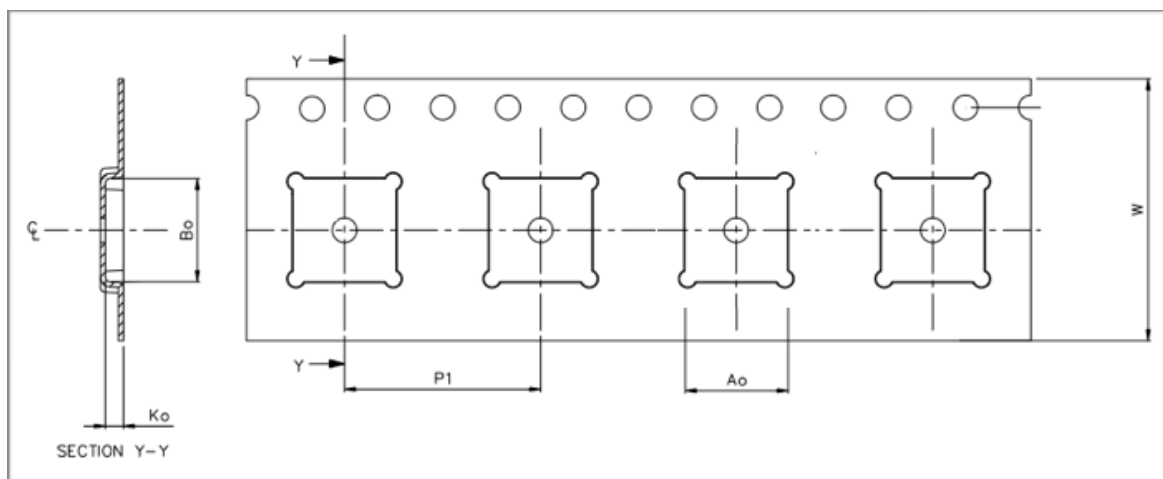


Figure 1-1. Carrier Tape Dimensions

1.2. Reel

Table 1-2 shows the dimensions of the reel.

Table 1-2. Reel Dimensions (Unit: mm)

Package	Reel Diameter (A)	Reel Width (W ₁)	Reel Thickness (W ₂)	Quantity Per Reel
5 * 5	330.0 ± 2.0	12.4 ± 0.5	19.4 ± 0.5	5,000
6 * 6	330.0 ± 2.0	16.4 ± 0.5	23.4 ± 0.5	3,000

Note:

The surface resistance of the reel is $10^4 \sim 10^{11}$ ohms.

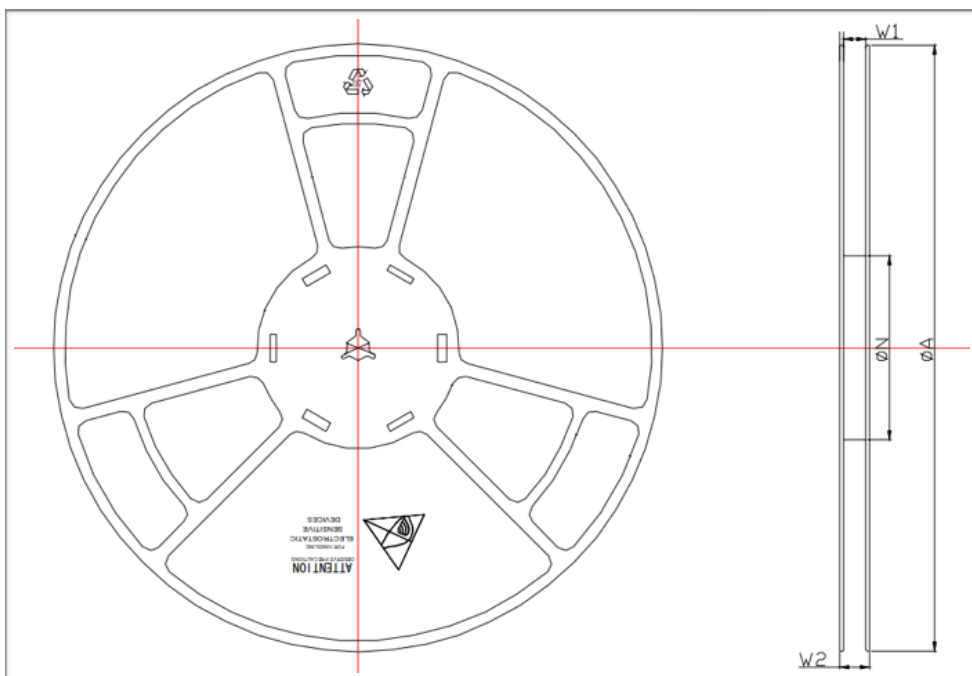


Figure 1-2. Reel Dimensions

1.3. Pin1 Location

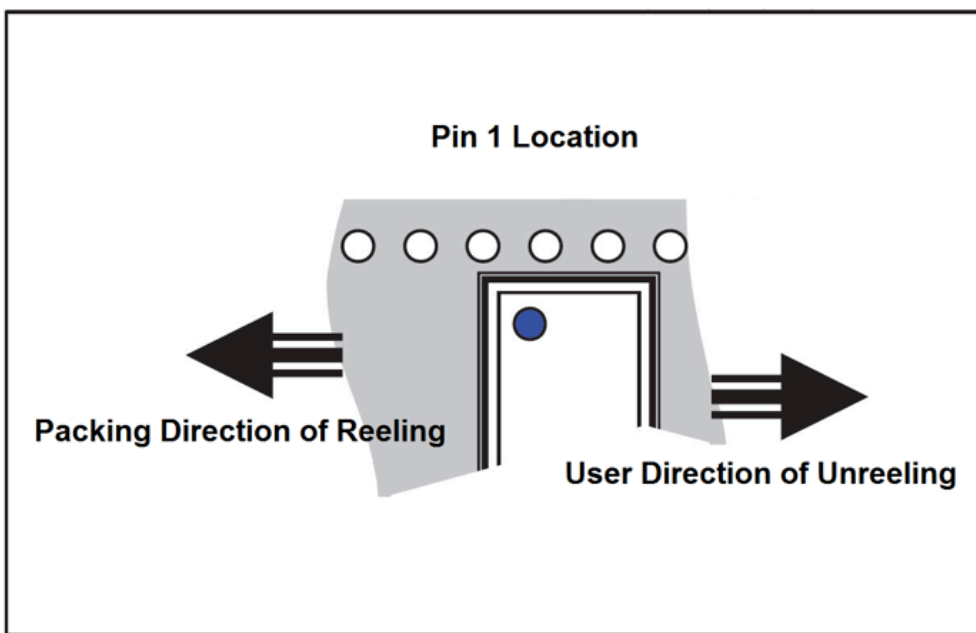


Figure 1-3. Pin 1 Orientation of Chips in Carrier Tape



2. Labels and Symbols

Reel, moisture barrier bag (MBB) and pizza box have relevant labels and symbols, as shown in the figures below.



Figure 2-1. Reel Labelling



Figure 2-2. MBB Labels and Symbols








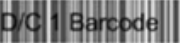





ESPRESSIF		  	
MPN:	 MPN Barcode ESPRESSIF product name		
LOT 1:	 Lot 1 Barcode Mother lot no information	D/C 1:	 D/C 1 Barcode Mother lot date code
LOT 2:	 Lot 2 Barcode Combined lot no information	D/C 2:	 D/C 2 Barcode Combined lot date code
QTY 1:	 QTY 1 Barcode Product quantity in mother lot	QTY 2:	 QTY 2 Barcode Product quantity in combined lot
Test ID:  Test ID Barcode Test lot information		DATE: 03-29-2016 Origin: CHINA	

Figure 2-3. Barcode Label Format for Reel, MBB and Pizza Box

Table 2-1. Barcode Label Content

Item	Description
ESPRESSIF	Company logo
MPN	Product name
LOT1	Number of mother lot
LOT2	Number of combined lot
QTY1	Quantity of LOT1
QTY2	Quantity of LOT2
D/C 2	Assembly date code for LOT2
D/C 1	Assembly date code for LOT1
Test ID	Test information
DATE	MM-DD-YYYY



3. Dry Packaging Requirements

All Espressif products must be dry-packed, as their moisture sensitivity level (MSL) is 3. Dry packing consists of desiccant material (see figure 3-1) and a humidity-indicator card (HIC, see figure 3-2) sealed with the populated reel inside a moisture barrier bag (MBB).

The calculated shelf life for dry-packed components is a minimum of 12 months from the MBB seal date, when stored in a non-condensing atmospheric environment of <40°C and 90% relative humidity.

The floor life (the allowable period of time after removal from a moisture barrier bag, dry storage or dry bake and before the reflow soldering process) is shown in table 3.

Table 3-1. Moisture Classification Level and Floor Life

Level	Floor life (out of bag) at factory ambient $\leq 30^{\circ}\text{C}/60\% \text{ RH}$, or as stated
3	168 hours



Figure 3-1. Desiccant

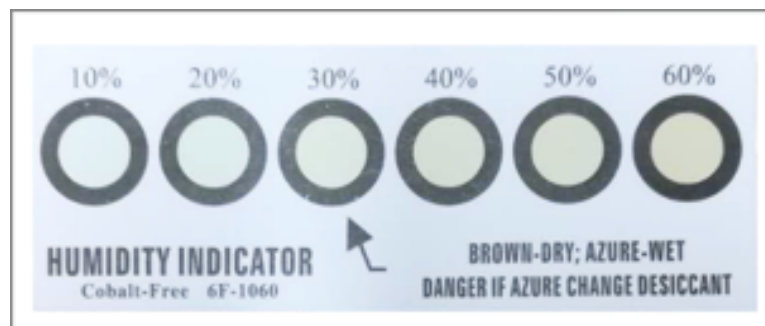


Figure 3-2. HIC

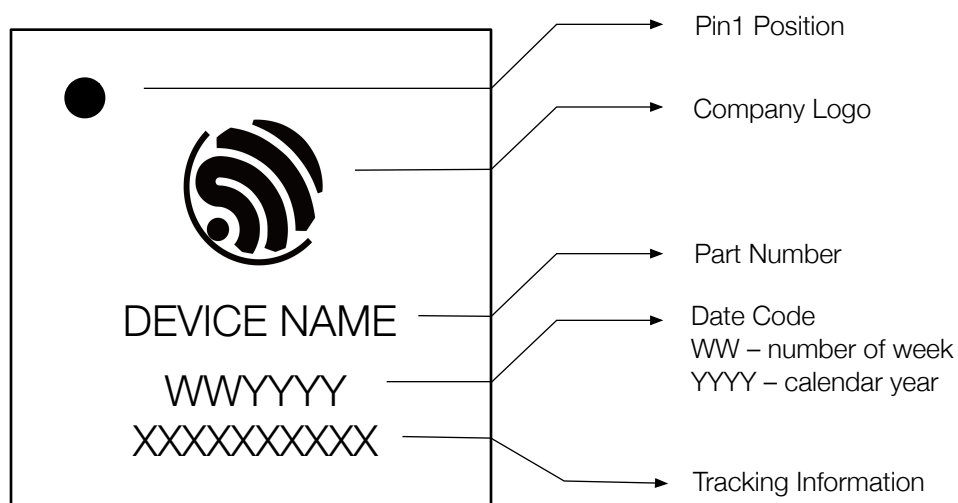


	Caution This bag contains MOISTURE-SENSITIVE DEVICES	LEVEL <div style="border: 1px solid black; width: 50px; height: 30px; margin: 0 auto;"></div> <small>If blank, see adjacent bar code label</small>
	<ol style="list-style-type: none">1. Calculated shelf life in sealed bag: 12 months at <40°C and <90% relative humidity (RH)2. Peak package body temperature: _____ °C <small>If blank, see adjacent bar code label</small>3. After bag is opened, devices that will be subjected to reflow solder or other high temperature process must be<ol style="list-style-type: none">a) Mounted within: _____ hours of factory conditions <small>If blank, see adjacent bar code label</small> ≤30°C/60% RH, orb) Stored per J-STD-0334. Devices require bake, before mounting, if:<ol style="list-style-type: none">a) Humidity Indicator Card reads >10% for level 2a - 5a devices or >60% for level 2 devices when read at 23 ± 5°Cb) 3a or 3b are not met5. If baking is required, refer to IPC/JEDEC J-STD-033 for bake procedure <p>Bag Seal Date: _____ <small>If blank, see adjacent bar code label</small></p> <p>Note: Level and body temperature defined by IPC/JEDEC J-STD-020</p>	

Figure 3-3. Moisture Sensitivity Caution Label



4. Marking Conventions



Notes:

- Date code "122017" stands for the 12th week of the year 2017.
- The number of digits in the tracking information depends on the actual content.



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