

CUSTOMER SERVICE NOTE

PIN 1 ORIENTATION FOR TRAY, TUBE, AND TAPE-AND-REEL PACKAGING

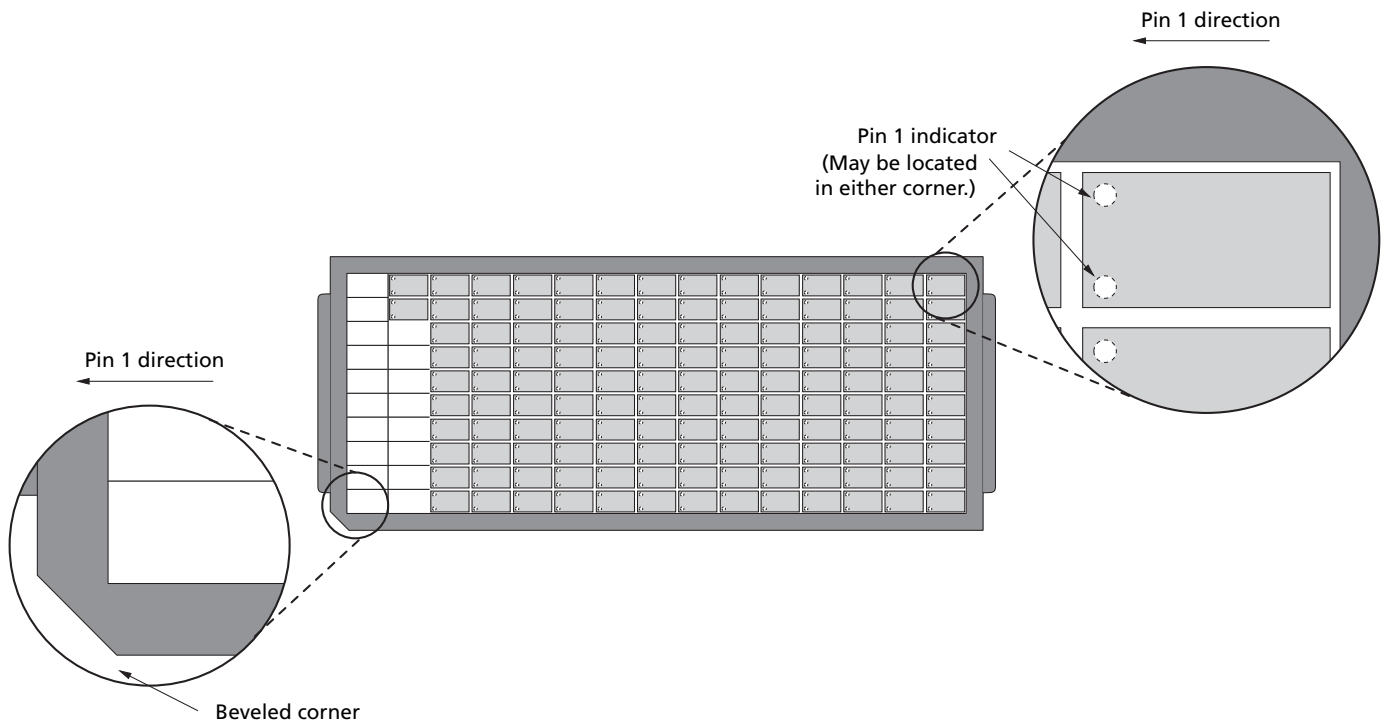
Introduction

Pin 1 refers to the location of the first lead/ball inside a semiconductor device and is used to determine how a part is attached to a circuit board. In a corner on the topside of each Micron® device, pin 1 is indicated by an indentation, either a molded dot or a molded “MT,” or it is indicated by a mark, specifically, a laser-etched dot or a laser-etched “MT.” This customer service note explains the locations of the pin 1 indicators on Micron’s devices shipped in tray, tube, and tape-and-reel packaging. For additional information, including the particular materials and procedures used for each packaging method, see CSN-16, “Micron Packaging.”

Location of Pin 1 in Tray Packaging

Micron uses several different types of trays with varying colors for shipping products. However, each tray has a single beveled corner which indicates the direction pin 1 faces on each device. Depending on the package type and the design ID of the part, the pin 1 indicator will be located in one of the two corners of the device edge closest to the beveled corner of the tray. An example is shown in Figure 1.

Figure 1: Pin 1 Direction on Trays



Location of Pin 1 in Tube Packaging

When packaged in a tube, each Micron semiconductor device is inserted into the tube so the pin 1 indicator and the beveled edge face the opening of the tube. When the tube is positioned horizontally with the opening on the left (see Figure 2), the pin 1 indicator will always be located in the bottom-left corner of each device. See Figure 2 for the direction of pin 1 in a tube package.

Location of Pin 1 in Tape-and-Reel Packaging

Depending on their package type and design ID, devices shipped in tape-and-reel carriers are positioned so that the pin 1 indicator on each device is located in one of the two corners that faces the edge of the carrier tape with the round sprocket holes. Figure 3 illustrates the position of the pin 1 indicators on Micron's tape-and-reel carriers. For complete packaging specifications, refer to Micron's CSN-15, "Tape-and-Reel Procedures."

Figure 2: Pin 1 Direction in Tubes

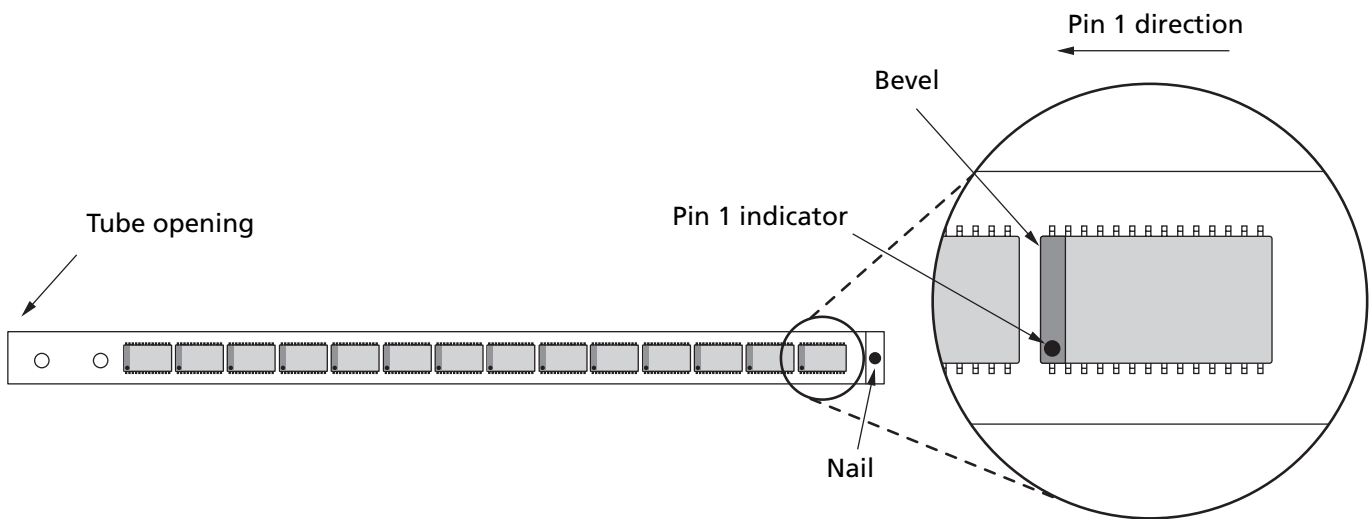
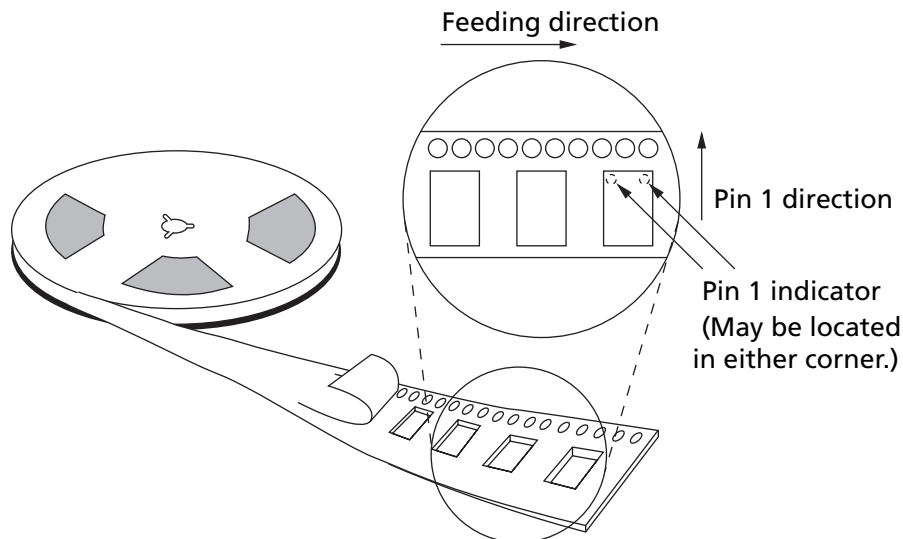


Figure 3: Pin 1 Direction on Tape-and-Reel Carriers



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