

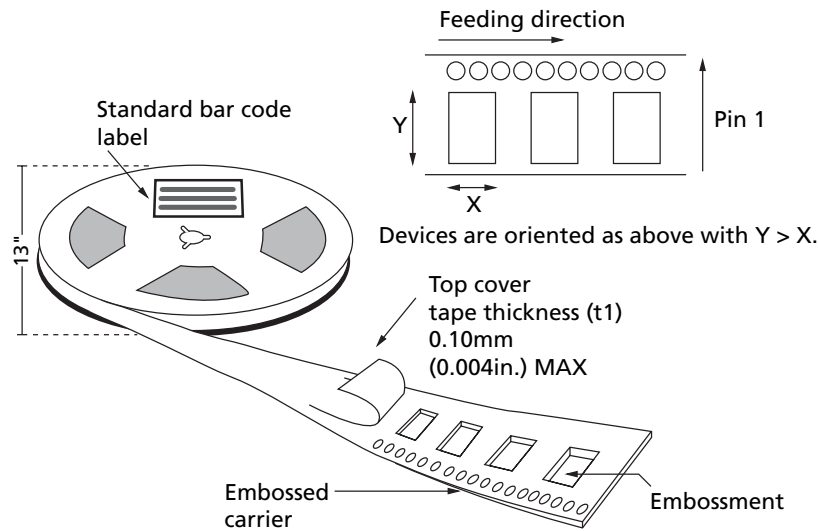
# Customer Service Note

## Tape-and-Reel Procedures

### Introduction

Micron supports the Electronic Industries Association's (EIA) standardization of tape-and-reel specifications, number 481-C. Specifications for Micron's tape-and-reel offerings are detailed in the following figures and tables.

**Figure 1: Reel**

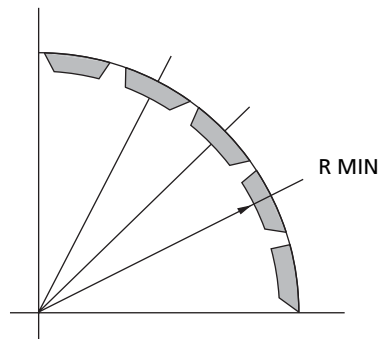


**Note:** The leader and trailer lengths on Micron's tape-and-reel carriers are >400mm and >160mm, respectively.

When ordering tape-and-reel carriers, "TR" must be added to the ordering part number (for example, MT48LC4M16A2TG-75 TR).

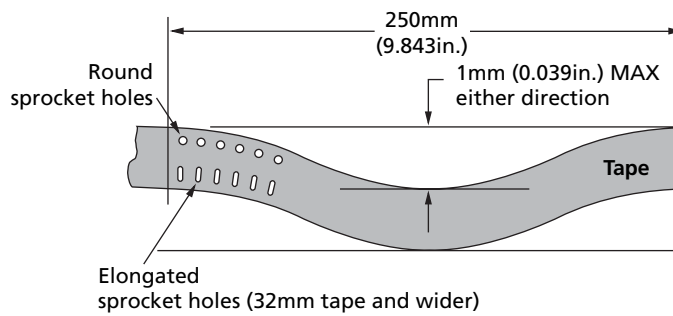
Refer to Micron's Customer Service Note "CSN-04, Shipping Information: Quantities and Weights," for tape dimensions of specific Micron® devices.

**Figure 2: Bending Radius**



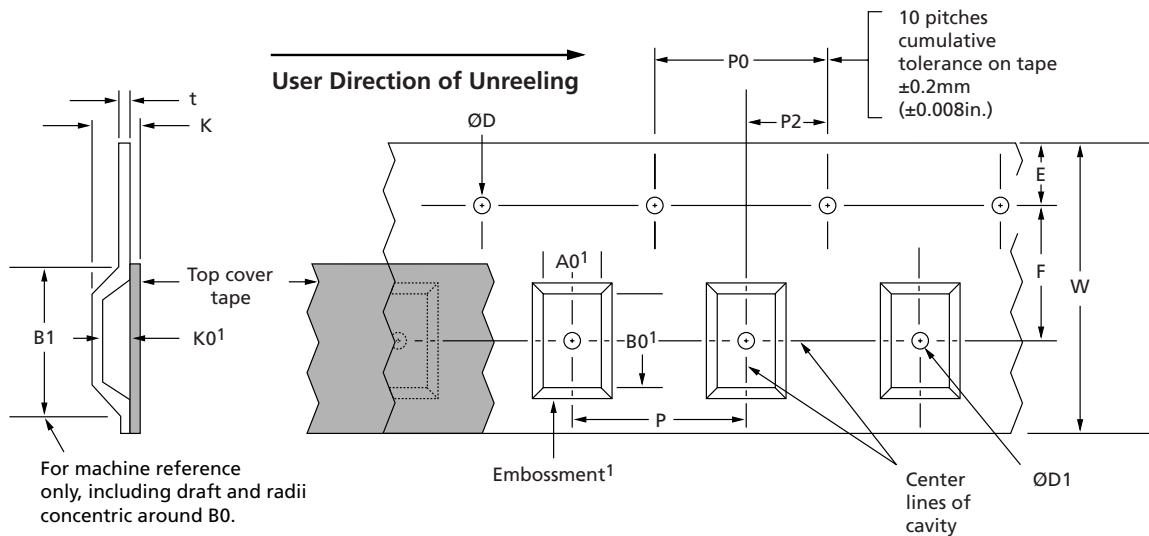
Note: Tape and components shall pass around radius "R" without damage.

**Figure 3: Camber (top view)**



Note: Allowable camber to be 1mm/250mm.

**Figure 4: Embossed Carrier Dimensions (16mm and 24mm tape)**



- Notes: 1. The cavity defined by A0, B0, and K0 shall surround the component with sufficient clearance that:
- The component does not protrude above the top surface of the carrier tape.
  - After the top cover tape has been removed, the component can be removed from the cavity in a vertical direction without mechanical restriction.
  - Rotation of the component is limited to 10 degrees maximum for 16mm and 24mm tapes.
  - Lateral movement of the component is restricted to 1.0mm MAX for 16mm- and 24mm-wide tapes. See Figure 7 on page 5.

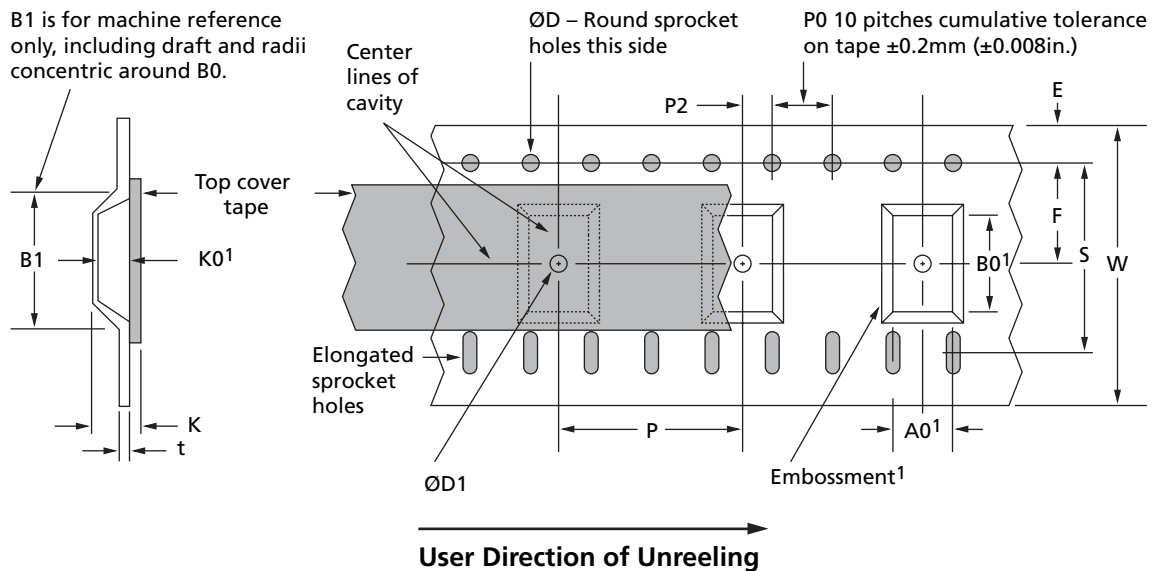
**Table 1: 16mm and 24mm Embossed Tape Dimensions<sup>1</sup>**

Tape Size	ØD	E	P0	t (MAX)	A0, B0, K0	B1 (MAX)	ØD1 (MIN)
16mm	1.5 +0.10/-0.00	1.75 ±0.10	4.0 ±0.10	0.6	Note 2	12.1 (0.476)	1.5
24mm	(0.059) +0.004/-0.000	(0.069 ±0.004)	(0.157 ±0.004)	(0.024)		20.1 (0.791)	(0.059)

Tape Size	F	K (MAX)	P2	R (MIN)	W (MAX)	P (in 4.0 increments)
16mm	7.5 ±0.10 (0.295 ±0.004)	8.0 (0.375)	2.0 ±0.10 (0.079 ±0.004)	30 (1.181)	16.3 (0.642)	4.0 ±0.10 to 12.0 ±0.10
24mm	11.5 ±0.10 (0.453 ±0.004)	12.0 (0.472)		See Note 3	24.3 (0.957)	4.0 ±0.10 to 20.0 ±0.10

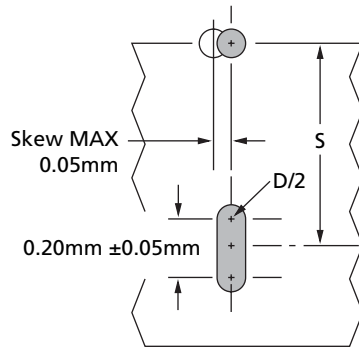
- Notes: 1. All dimensions in millimeters (inches).
2. The cavity defined by A0, B0, and K0 shall surround the component with sufficient clearance that:
- The component does not protrude above the top surface of the carrier tape.
  - After the top cover tape has been removed, the component can be removed from the cavity in a vertical direction without mechanical restriction.
  - Rotation of the component is limited to 10 degrees maximum for 16mm and 24mm tapes.
  - Lateral movement of the component is restricted to 1.0mm MAX for 16mm- and 24mm-wide tapes. See Figure 7 on page 5.
3. Tape and components shall pass around radius "R" without damage. Refer to Figure 2 on page 2.

**Figure 5: Embossed Carrier Dimensions (32mm and 44mm tape only)**

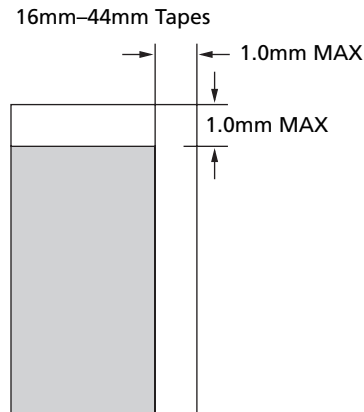


- Notes: 1. The cavity defined by A0, B0, and K0 shall surround the component with sufficient clearance that:
- The component does not protrude above the top surface of the carrier tape.
  - After the top cover tape has been removed, the component can be removed from the cavity in a vertical direction without mechanical restriction.
  - Rotation of the component is limited to 10 degrees maximum for 32mm and 44mm tapes.
  - Lateral movement of the component is restricted to 1.0mm MAX for 32mm- and 44mm-wide tapes. See Figure 7 on page 5.

**Figure 6: Detail of Elongated Hole**



**Figure 7: Maximum Lateral Movement for Punched and Embossed Carrier**



**Table 2: 32mm and 44mm Embossed Tape<sup>1</sup>**

Tape Size	ØD	ØD1 (MIN)	E	K (MAX)	P0	t (MAX)	A0, B0, K0	B1 (MAX)
32mm	1.5 +0.10/-0.00 (0.059) +0.004/ -0.000	2.0 (0.079)	1.75 ±0.10 (0.069 ±0.004)	12.0 (0.472)	4.0 ±0.10 (0.157 ±0.004)	0.6 (0.024)	Note 2	23.0 (0.906)
44mm				16.0 (0.630)				35.0 (1.378)

Tape Size	F	P2	S	W	R (MIN)	P (in 4.0 increments)
32mm	14.2 ±0.10 (0.559 ±0.004)	2.0 ±0.10 (0.079 ±0.004)	28.4 ±0.10 (1.118 ±0.004)	32.0 ±0.30 (1.26 ±0.012)	50 (1.973)	4.0 ±0.10 to 32.0 ±0.10
44mm	20.2 ±0.15 (0.795 ±0.006)	2.0 ±0.15 (0.079 ±0.006)	40.4 ±0.10 (1.591 ±0.004)	44.0 ±0.30 (1.732 ±0.012)	See Note 3	4.0 ±0.10 to 44.0 ±0.10

- Notes:
1. All dimensions in millimeters (inches).
  2. The cavity defined by A0, B0, and K0 shall surround the component with sufficient clearance that:
    - a. The component does not protrude above the top surface of the carrier tape.
    - b. After the top cover tape has been removed, the component can be removed from the cavity in a vertical direction without mechanical restriction.
    - c. Rotation of the component is limited to 10 degrees maximum for 32mm and 44mm tapes.
    - d. Lateral movement of the component is restricted to 1.0mm MAX for 32mm- and 44mm-wide tapes. See Figure 7 on page 5.
  3. Tape and components shall pass around radius "R" without damage. See Figure 2 on page 2.



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