FAIRCHILD
SEMICONDUCTOR TM

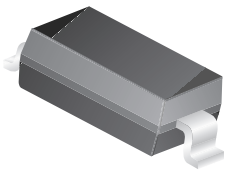
# MMSZ5226B - MMSZ5257B Series Zeners

## Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $P_D$ | Total Device Dissipation @ 25°C<br>Derate above 25°C | 500<br>6.7 | mW<br>mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient ** | 340 | °C/W |
| $T_{stg}$ | Storage Temperature Range | -55 to +150 | °C |
| $T_J$ | Operating Junction Temperature | -55 to +150 | °C |

*These ratings are limiting values above which serviceability of any semiconductor may be impaired.
**FR-4 or FR-5 = 3.5 x 1.5 inches using minimum recommended land pads.



**SOD123**
Mark: B2

## Electrical Characteristics

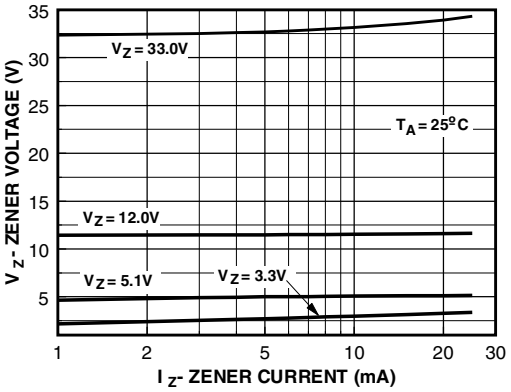
$T_A$ = 25°C unless otherwise noted

| Device | Mark | VZ (V) | ZZ (Ω) | IZT (mA) | ZZK (Ω) | IZK (mA) | VR (V) | IR (μA) |
|---|---|---|---|---|---|---|---|---|
| MMSZ5226B | D1 | 3.3 | 28 | 20 | 1600 | 0.25 | 1.0 | 25 |
| MMSZ5227B | D2 | 3.6 | 24 | 20 | 1700 | 0.25 | 1.0 | 15 |
| MMSZ5228B | D3 | 3.9 | 23 | 20 | 1900 | 0.25 | 1.0 | 10 |
| MMSZ5229B | D4 | 4.3 | 22 | 20 | 1000 | 0.25 | 1.0 | 5.0 |
| MMSZ5230B | D5 | 4.7 | 19 | 20 | 1900 | 0.25 | 2.0 | 5.0 |
| MMSZ5231B | E1 | 5.1 | 17 | 20 | 1600 | 0.25 | 2.0 | 5.0 |
| MMSZ5232B | E2 | 5.6 | 11 | 20 | 1600 | 0.25 | 3.0 | 5.0 |
| MMSZ5233B | E3 | 6.0 | 7 | 20 | 1600 | 0.25 | 3.5 | 5.0 |
| MMSZ5234B | E4 | 6.2 | 7 | 20 | 1000 | 0.25 | 4.0 | 5.0 |
| MMSZ5235B | E5 | 6.8 | 5 | 20 | 750 | 0.25 | 5.0 | 3.0 |
| MMSZ5236B | F1 | 7.5 | 6 | 20 | 500 | 0.25 | 6.0 | 3.0 |
| MMSZ5237B | F2 | 8.2 | 8 | 20 | 500 | 0.25 | 6.5 | 3.0 |
| MMSZ5238B | F3 | 8.7 | 8 | 20 | 600 | 0.25 | 6.5 | 3.0 |
| MMSZ5239B | F4 | 9.1 | 10 | 20 | 600 | 0.25 | 7.0 | 3.0 |
| MMSZ5240B | F5 | 10 | 17 | 20 | 600 | 0.25 | 8.0 | 3.0 |
| MMSZ5241B | H1 | 11 | 22 | 20 | 600 | 0.25 | 8.4 | 2.0 |
| MMSZ5242B | H2 | 12 | 30 | 20 | 600 | 0.25 | 9.1 | 1.0 |
| MMSZ5243B | H3 | 13 | 13 | 9.5 | 600 | 0.25 | 9.9 | 0.5 |
| MMSZ5244B | H4 | 14 | 15 | 9.0 | 600 | 0.25 | 10 | 0.1 |
| MMSZ5245B | H5 | 15 | 16 | 8.5 | 600 | 0.25 | 11 | 0.1 |
| MMSZ5246B | J1 | 16 | 17 | 7.8 | 600 | 0.25 | 12 | 0.1 |
| MMSZ5247B | J2 | 17 | 19 | 7.4 | 600 | 0.25 | 13 | 0.1 |
| MMSZ5248B | J3 | 18 | 21 | 7.0 | 600 | 0.25 | 14 | 0.1 |
| MMSZ5249B | J4 | 19 | 23 | 6.6 | 600 | 0.25 | 14 | 0.1 |
| MMSZ5250B | J5 | 20 | 25 | 6.2 | 600 | 0.25 | 15 | 0.1 |
| MMSZ5251B | K1 | 22 | 29 | 5.6 | 600 | 0.25 | 17 | 0.1 |
| MMSZ5252B | K2 | 24 | 33 | 5.2 | 600 | 0.25 | 18 | 0.1 |
| MMSZ5253B | K3 | 25 | 35 | 5.0 | 600 | 0.25 | 19 | 0.1 |
| MMSZ5254B | K4 | 27 | 41 | 4.6 | 600 | 0.25 | 21 | 0.1 |
| MMSZ5255B | K5 | 28 | 44 | 4.5 | 600 | 0.25 | 21 | 0.1 |
| MMSZ5256B | M1 | 30 | 49 | 4.2 | 600 | 0.25 | 23 | 0.1 |
| MMSZ5257B | M2 | 33 | 58 | 3.8 | 700 | 0.25 | 25 | 0.1 |

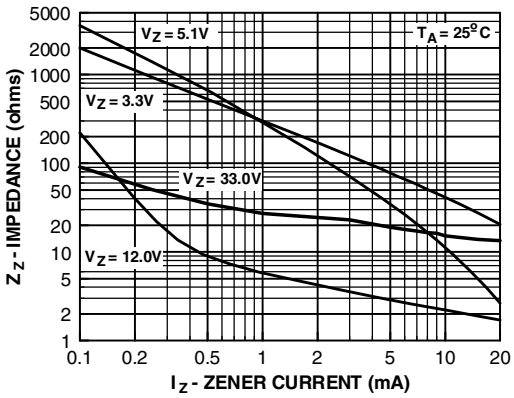
VF Forward Voltage = 0.9V maximum @ IF = 10mA for all MMSZ5200 series

## Typical Characteristics

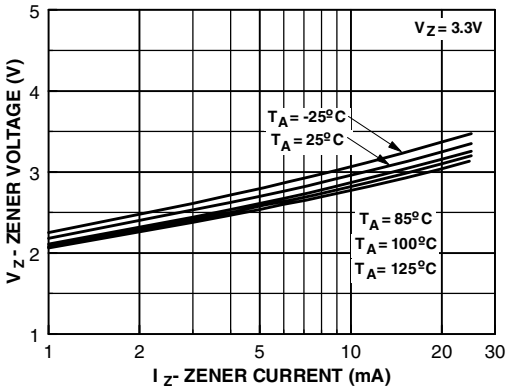
### Zener Current vs. Zener Voltage



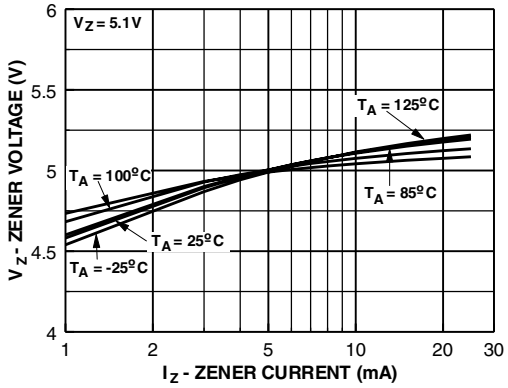

### Zener Current vs. Zener Impedence



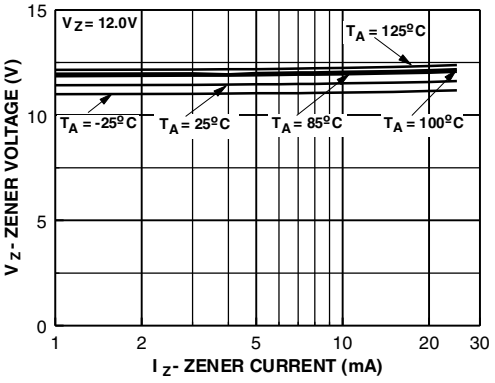

### 3.3 Zener Voltage vs. Temperature



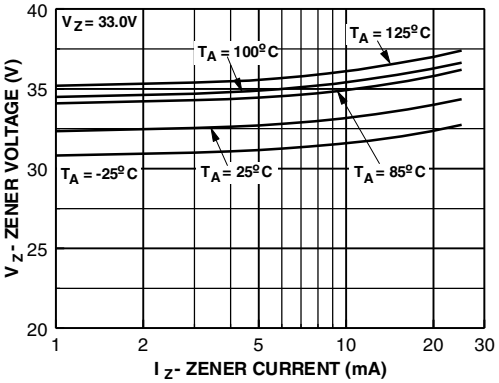

### 5.1 Zener Voltage vs. Temperature




### 12 Zener Voltage vs. Zener Temperature



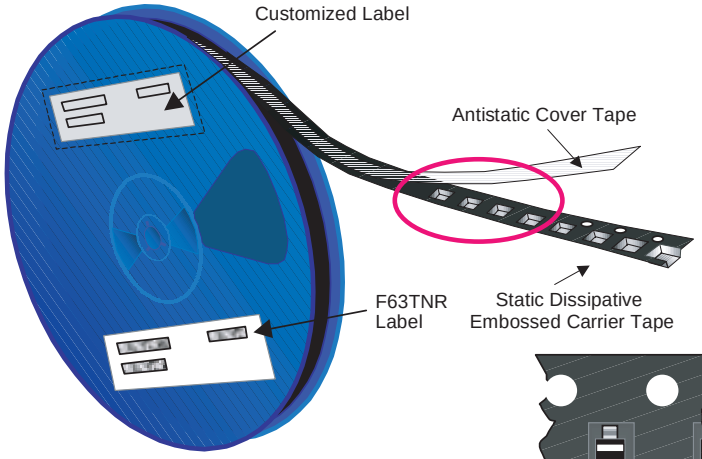

### 33 Zener Voltage vs. Zener Temperature



# SOD-123 Tape and Reel Data

FAIRCHILD SEMICONDUCTOR TM

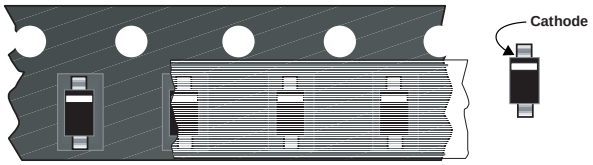
## SOD123 Packaging
**Configuration:** Figure 1.0




**Packaging Description:**

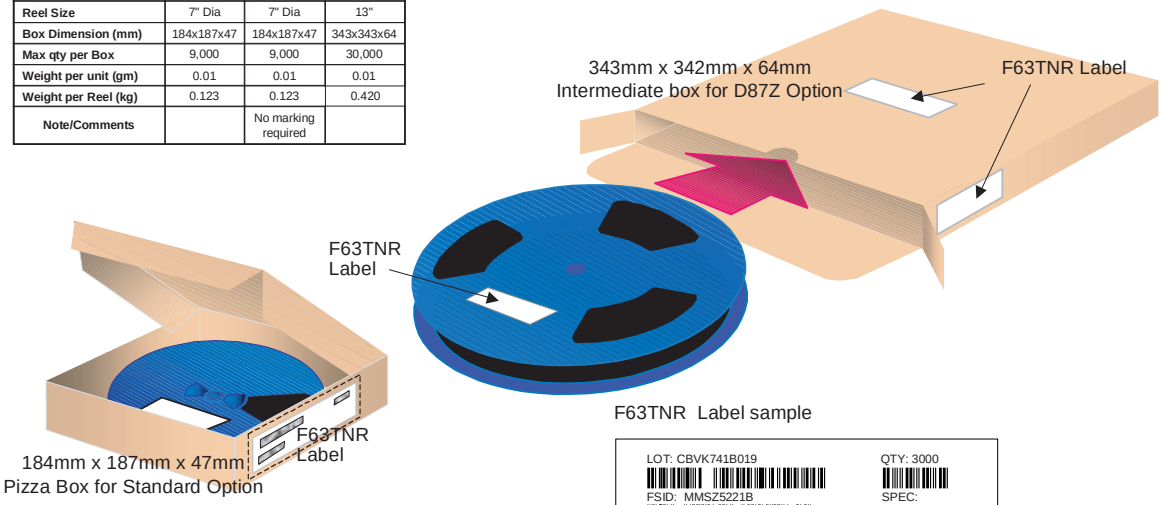
SOD123 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 177cm diameter reel. The reels are dark blue in color and is made of polystyrene plastic (anti-static coated). Other option comes in 10,000 units per 13" or 330cm diameter reel. This and some other options are described in the Packaging Information table.

These full reels are individually barcode labeled and placed inside a pizza box (illustrated in figure 1.0) made of recyclable corrugated brown paper with a Fairchild logo printing. One pizza box contains three reels maximum. And these pizza boxes are placed inside a barcode labeled shipping box which comes in different sizes depending on the number of parts shipped.



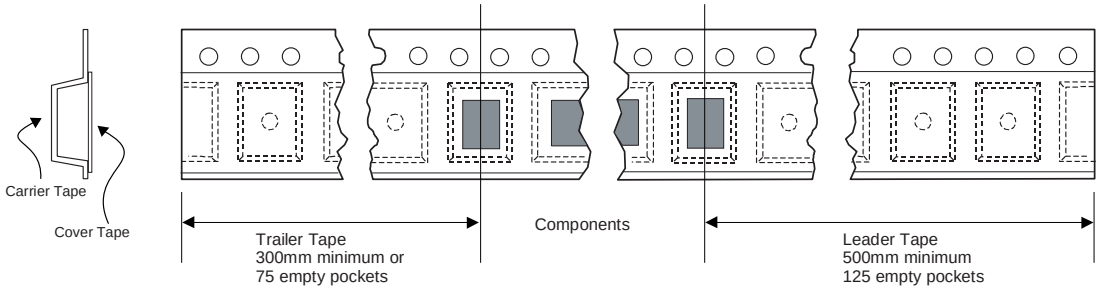

**SOD123 Unit Orientation**

| SOD123 Packaging Information | | | |
|---|---|---|---|
| **Packaging Option** | Standard (no flow code) | L99Z | D87Z |
| **Packaging type** | TNR | TNR | TNR |
| **Qty per Reel/Tube/Bag** | 3,000 | 3,000 | 10,000 |
| **Reel Size** | 7" Dia | 7" Dia | 13" |
| **Box Dimension (mm)** | 184x187x47 | 184x187x47 | 343x343x64 |
| **Max qty per Box** | 9,000 | 9,000 | 30,000 |
| **Weight per unit (gm)** | 0.01 | 0.01 | 0.01 |
| **Weight per Reel (kg)** | 0.123 | 0.123 | 0.420 |
| **Note/Comments** | | No marking required | |




F63TNR Label sample

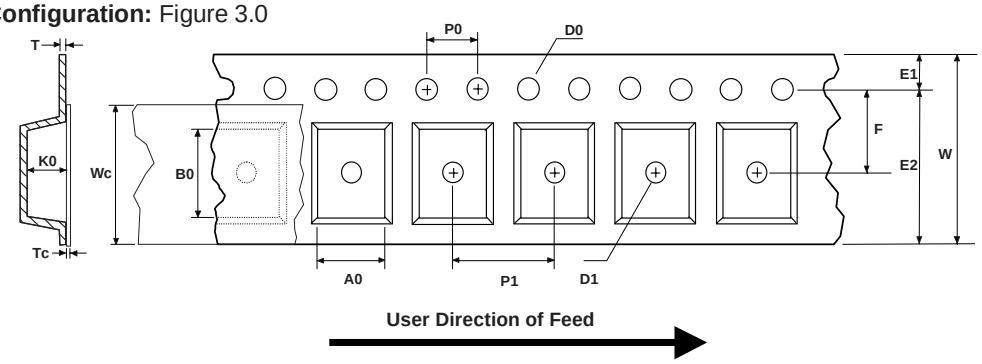

## SOD123 Tape Leader and Trailer
**Configuration:** Figure 2.0



# SOD-123 Tape and Reel Data, continued

## SOD123 Embossed Carrier Tape

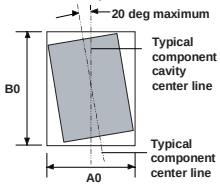
**Configuration:** Figure 3.0



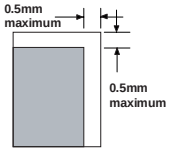

| Dimensions are in millimeter | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pkg type** | **A0** | **B0** | **W** | **D0** | **D1** | **E1** | **E2** | **F** | **P1** | **P0** | **K0** | **T** | **Wc** | **Tc** |
| **SOD123** (8mm) | 1.85 +/-0.10 | 3.94 +/-0.10 | 8.0 +/-0.3 | 1.50 +/-0.10 | 1.125 +/-0.125 | 1.75 +/-0.10 | 6.25 min | 3.50 +/-0.05 | 4.0 +/-0.1 | 4.0 +/-0.1 | 1.50 +/-0.10 | 0.200 +/-0.020 | 5.2 +/-0.2 | 0.06 +/-0.02 |

Notes: A0, B0, and K0 dimensions are determined with respect to the EIA/Jedec RS-481 rotational and lateral movement requirements (see sketches A, B, and C).


Sketch A (Side or Front Sectional View)
**Component Rotation**

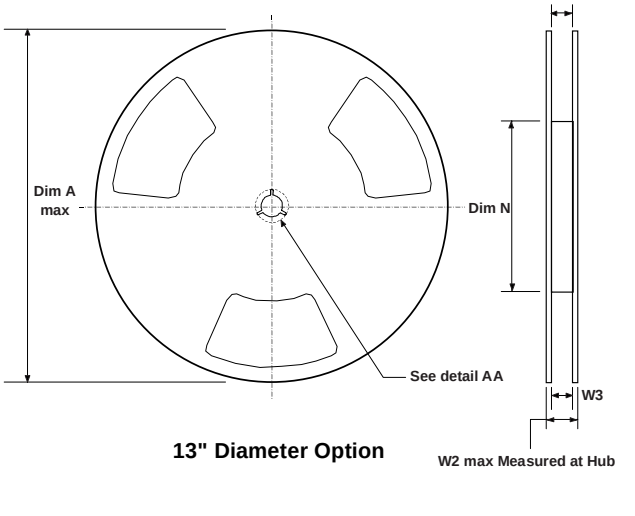



Sketch B (Top View)
**Component Rotation**

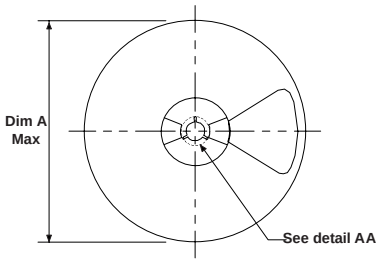



Sketch C (Top View)
**Component lateral movement**

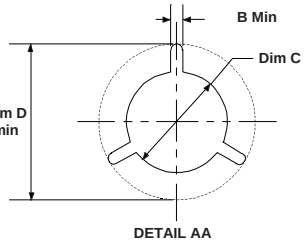
## SOD123 Reel Configuration: Figure 4.0




**13" Diameter Option**




**7" Diameter Option**



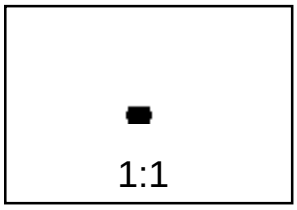

**DETAIL AA**

| Dimensions are in inches and millimeters | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Tape Size** | **Reel Option** | **Dim A** | **Dim B** | **Dim C** | **Dim D** | **Dim N** | **Dim W1** | **Dim W2** | **Dim W3 (LSL-USL)** |
| 8mm | 7" Dia | 7.00 177.8 | 0.059 1.5 | 512 +0.020/-0.008 13 +0.5/-0.2 | 0.795 20.2 | 2.165 55 | 0.331 +0.059/-0.000 8.4 +1.5/0 | 0.567 14.4 | 0.311 – 0.429 7.9 – 10.9 |
| 8mm | 13" Dia | 13.00 330 | 0.059 1.5 | 512 +0.020/-0.008 13 +0.5/-0.2 | 0.795 20.2 | 4.00 100 | 0.331 +0.059/-0.000 8.4 +1.5/0 | 0.567 14.4 | 0.311 – 0.429 7.9 – 10.9 |

**SOD-123 Package Dimensions**

FAIRCHILD SEMICONDUCTOR™

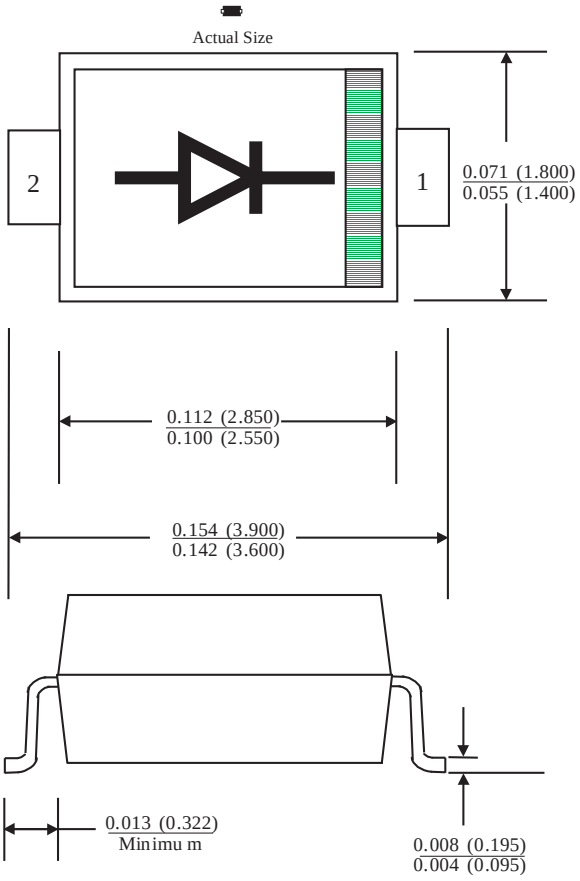
# SOD-123 (FS PKG Code D6)

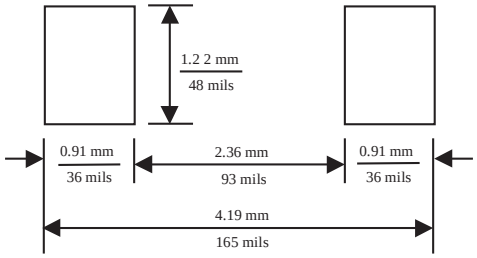



Scale 1:1 on letter size paper

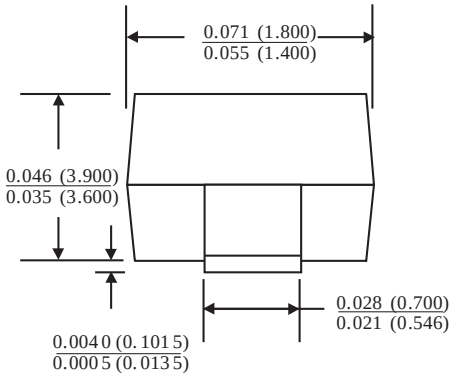
Dimensions shown below are in:
inches [millimeters]

Part Weight per unit (gram): 0.01




SOD-123 LAND PADS



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SuperSOT™-3
SuperSOT™-6
SuperSOT™-8
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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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|---|---|---|
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