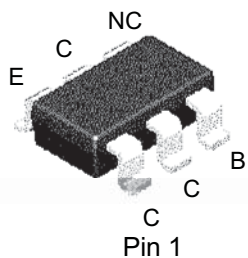


## FMBS549



Package: SuperSOT-6 single  
Mark : .S1

### PNP Low Saturation Transistor

This device is designed with high current gain and low saturation voltage with collector currents up to 2A continuous. Sourced from process PB.

#### Absolute Maximum Ratings\*

$T_A = 25^\circ\text{C}$  unless otherwise noted

| Symbol         | Parameter                                             | Value       | Units            |
|----------------|-------------------------------------------------------|-------------|------------------|
| $V_{CEO}$      | Collector-Emitter Voltage                             | 30          | V                |
| $V_{CBO}$      | Collector-Base Voltage                                | 35          | V                |
| $V_{EBO}$      | Emitter-Base Voltage                                  | 5           | V                |
| $I_C$          | Collector Current- Continuous<br>- Peak Pulse Current | 1<br>2      | A<br>A           |
| $T_J, T_{STG}$ | Operating and Storage Junction Temperature Range      | -55 to +150 | $^\circ\text{C}$ |

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

#### NOTES:

- 1) These ratings are based on a maximum junction temperature of  $150^\circ\text{C}$ .
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

#### Thermal Characteristics

$T_A = 25^\circ\text{C}$  unless otherwise noted

| Symbol          | Characteristics                                | Max | Units              |
|-----------------|------------------------------------------------|-----|--------------------|
| $P_D$           | Total Device Dissipation*                      | 700 | mW                 |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient, total | 180 | $^\circ\text{C/W}$ |

\*Device mounted on a 1 in2 pad of 2 oz copper.

**PNP Low Saturation transistor**  
(continued)

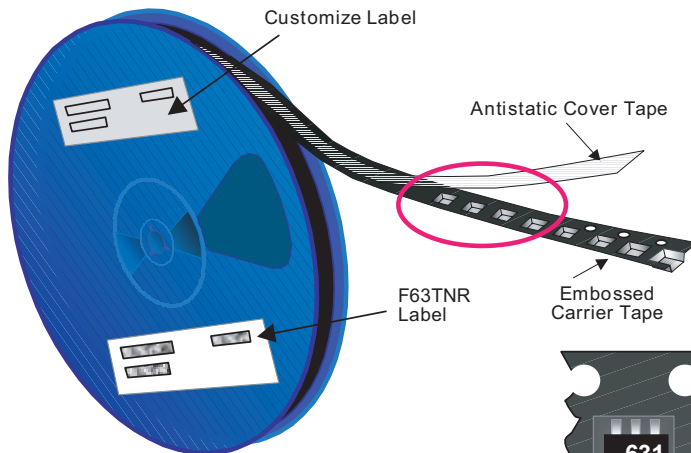
**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise noted

| Symbol                              | Parameter                            | Test Conditions                                                                                                                                                                                                               | Min                          | Max                      | Units                |
|-------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------------|----------------------|
| <b>OFF CHARACTERISTICS</b>          |                                      |                                                                                                                                                                                                                               |                              |                          |                      |
| $BV_{CEO}$                          | Collector to Emitter Voltage         | $I_c = 10\text{ mA}$                                                                                                                                                                                                          | 30                           |                          | V                    |
| $BV_{CBO}$                          | Collector to Base Voltage            | $I_c = 100\text{ uA}$                                                                                                                                                                                                         | 35                           |                          | V                    |
| $BV_{EBO}$                          | Emitter to Base Voltage              | $I_e = 100\text{ uA}$                                                                                                                                                                                                         | 5                            |                          | V                    |
| $I_{CBO}$                           | Collector Cutoff Current             | $V_{cb} = 30\text{ V}$<br>$V_{cb} = 30\text{ V}, T_A = 100^\circ\text{C}$                                                                                                                                                     |                              | 100<br>10                | nA<br>uA             |
| $I_{EBO}$                           | Emitter Cutoff Current               | $V_{eb} = 4\text{ V}$                                                                                                                                                                                                         |                              | 100                      | nA                   |
| <b>ON CHARACTERISTICS</b>           |                                      |                                                                                                                                                                                                                               |                              |                          |                      |
| $h_{FE}$                            | DC Current Gain                      | $V_{ce} = 2\text{ V}, I_c = 50\text{ mA}$<br>$V_{ce} = 2\text{ V}, I_c = 500\text{ mA}$<br>$V_{ce} = 2\text{ V}, I_c = 1\text{ A}$<br>$V_{ce} = 2\text{ V}, I_c = 2\text{ A}$<br>$V_{ce} = 0.8\text{ V}, I_c = 500\text{ mA}$ | 70<br>100<br>80<br>40<br>100 | 300                      | -                    |
| $V_{CE(sat)}$                       | Collector-Emitter Saturation Voltage | $I_c = 250\text{ mA}, I_b = 25\text{ mA}$<br>$I_c = 500\text{ mA}, I_b = 50\text{ mA}$<br>$I_c = 1\text{ A}, I_b = 100\text{ mA}$<br>$I_c = 2\text{ A}, I_b = 200\text{ mA}$                                                  |                              | 200<br>350<br>500<br>750 | mV<br>mV<br>mV<br>mV |
| $V_{BE(sat)}$                       | Base-Emitter Saturation Voltage      | $I_c = 1\text{ A}, I_b = 100\text{ mA}$                                                                                                                                                                                       |                              | 1.25                     | V                    |
| $V_{BE(on)}$                        | Base-Emitter On Voltage              | $I_c = 1\text{ A}, V_{ce} = 2\text{ V}$                                                                                                                                                                                       |                              | 1                        | V                    |
| <b>SMALL SIGNAL CHARACTERISTICS</b> |                                      |                                                                                                                                                                                                                               |                              |                          |                      |
| $C_{obo}$                           | Output Capacitance                   | $V_{cb} = 10\text{ V}, f = 1\text{ MHz}$                                                                                                                                                                                      |                              | 25                       | pF                   |
| $f_T$                               | Current Gain - Bandwidth Product     | $V_{ce} = 5\text{ V}, I_c = 100\text{ mA}, f = 100\text{ MHz}$                                                                                                                                                                | 100                          |                          | MHz                  |

# SuperSOT™-6 Tape and Reel Data and Package Dimensions



## SSOT-6 Packaging Configuration: Figure 1.0

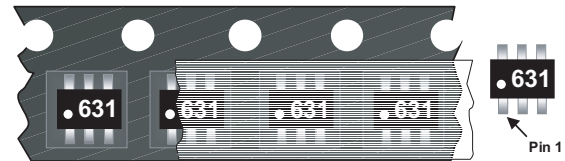


### Packaging Description:

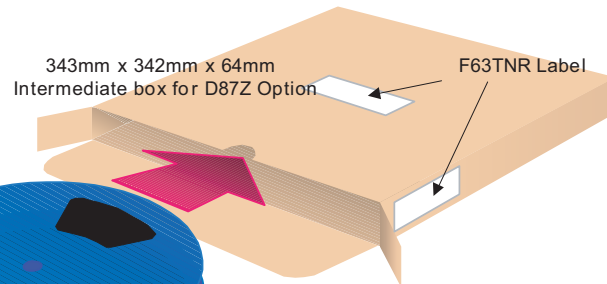
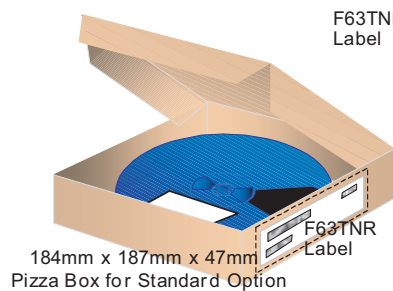
SSOT-6 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in 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.

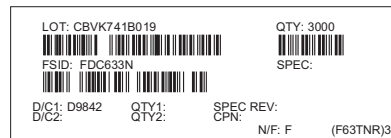
| SSOT-6 Packaging Information |                         |            |
|------------------------------|-------------------------|------------|
| Packaging Option             | Standard (no flow code) | D87Z       |
| Packaging type               | TNR                     | TNR        |
| Qty per Reel/Tube/Bag        | 3,000                   | 10,000     |
| Reel Size                    | 7" Dia                  | 13"        |
| Box Dimension (mm)           | 184x187x47              | 343x343x64 |
| Max qty per Box              | 9,000                   | 30,000     |
| Weight per unit (gm)         | 0.0158                  | 0.0158     |
| Weight per Reel (kg)         | 0.1440                  | 0.4700     |
| Note/Comments                |                         |            |



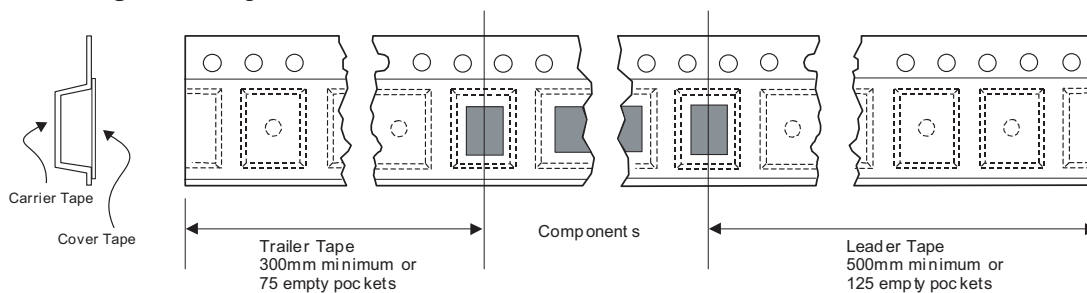
### SSOT-6 Unit Orientation



### F63TNR Label sample

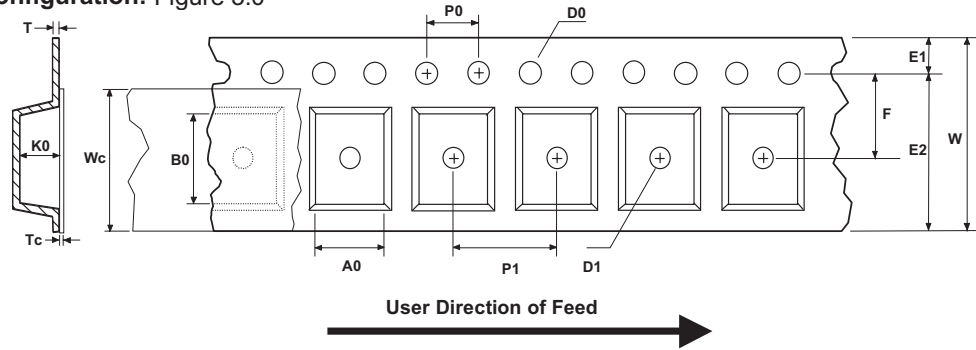


## SSOT-6 Tape Leader and Trailer Configuration: Figure 2.0



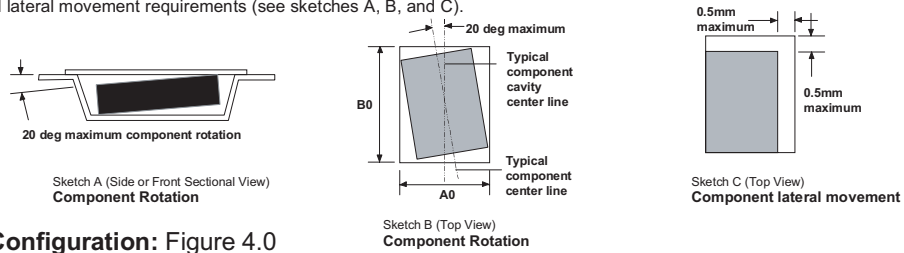
## SuperSOT™-6 Tape and Reel Data and Package Dimensions, continued

### SSOT-6 Embossed Carrier Tape Configuration: Figure 3.0

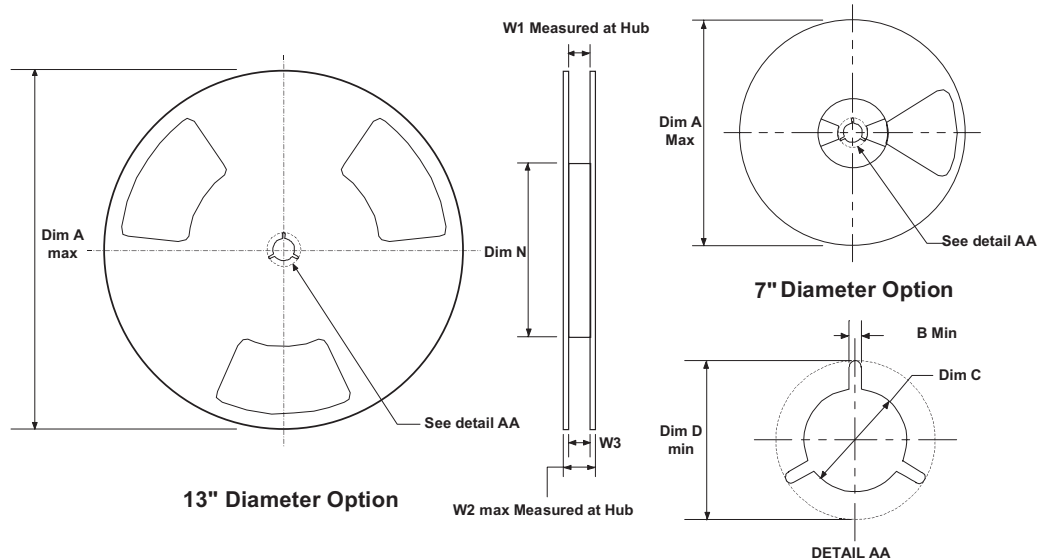


| Dimensions are in millimeter |                 |                 |               |                 |                   |                 |             |                 |               |               |                 |                   |               |                 |
|------------------------------|-----------------|-----------------|---------------|-----------------|-------------------|-----------------|-------------|-----------------|---------------|---------------|-----------------|-------------------|---------------|-----------------|
| Pkg type                     | A0              | B0              | W             | D0              | D1                | E1              | E2          | F               | P1            | P0            | K0              | T                 | Wc            | Tc              |
| SSOT-6 (8mm)                 | 3.23<br>+/-0.10 | 3.18<br>+/-0.10 | 8.0<br>+/-0.3 | 1.55<br>+/-0.05 | 1.125<br>+/-0.125 | 1.75<br>+/-0.10 | 6.25<br>min | 3.50<br>+/-0.05 | 4.0<br>+/-0.1 | 4.0<br>+/-0.1 | 1.37<br>+/-0.10 | 0.255<br>+/-0.150 | 5.2<br>+/-0.3 | 0.06<br>+/-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).



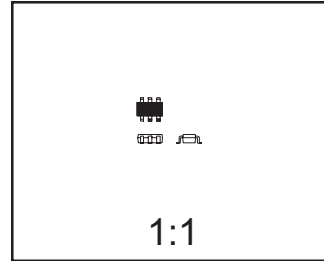
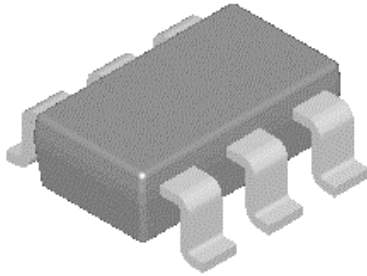
### SSOT-6 Reel Configuration: Figure 4.0



| 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<br>177.8 | 0.059<br>1.5 | 512 +0.020/-0.008<br>13 +0.5/-0.2 | 0.795<br>20.2 | 2.165<br>55 | 0.331 +0.059/-0.000<br>8.4 +1.5/0 | 0.567<br>14.4 | 0.311 - 0.429<br>7.9 - 10.9 |
| 8mm                                      | 13" Dia     | 13.00<br>330  | 0.059<br>1.5 | 512 +0.020/-0.008<br>13 +0.5/-0.2 | 0.795<br>20.2 | 4.00<br>100 | 0.331 +0.059/-0.000<br>8.4 +1.5/0 | 0.567<br>14.4 | 0.311 - 0.429<br>7.9 - 10.9 |

## SuperSOT™-6 Tape and Reel Data and Package Dimensions, continued

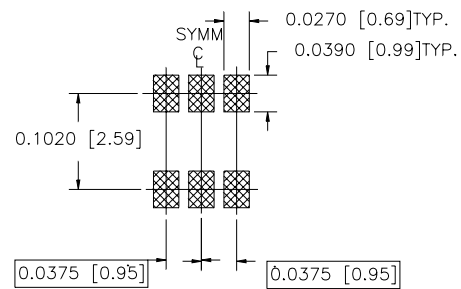
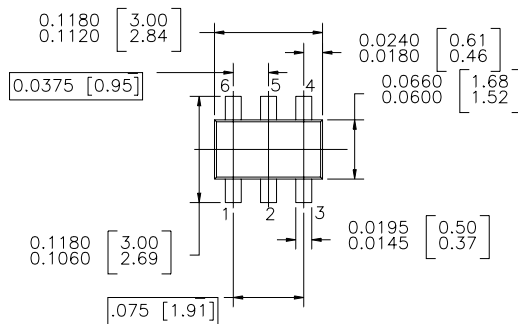
### SuperSOT -6 (FS PKG Code 31, 33)



Scale 1:1 on letter size paper

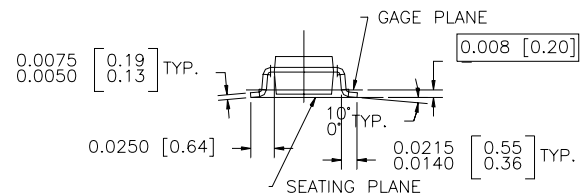
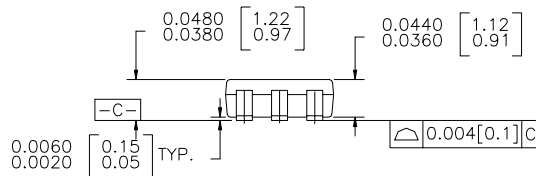
Dimensions shown below are in:  
inches [millimeters]

Part Weight per unit (gram): 0.0158



LAND PATTERN RECOMMENDATION

CONTROLLING DIMENSION IS INCH  
VALUES IN [ ] ARE MILLIMETERS



NOTES : UNLESS OTHERWISE SPECIFIED

1.0 STANDARD LEAD FINISH : 150 MICROINCHES 93.81 MICROMETERS)  
MINIMUM TIN / LEAD (SOLDER) ON COPPER.

2.0 NO JEDEC REGISTRATION AS OF JULY 1996

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