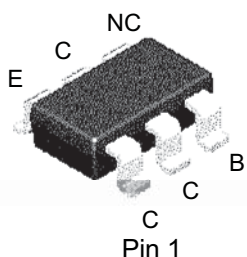


## FMBS549



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 - Peak Pulse Current	1 2	A 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 in<sup>2</sup> pad of 2 oz copper.

**PNP Low Saturation transistor**  
(continued)

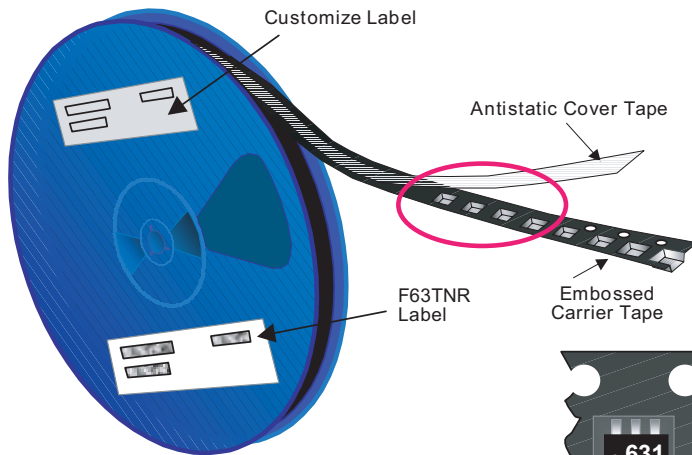
**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise noted

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	$I_c = 100\text{ }\mu\text{A}$	35		V
$BV_{EBO}$	Emitter to Base Voltage	$I_e = 100\text{ }\mu\text{A}$	5		V
$I_{CBO}$	Collector Cutoff Current	$V_{cb} = 30\text{ V}$ $V_{cb} = 30\text{ V}, T_a = 100^\circ\text{C}$		100 10	nA $\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{eb} = 4\text{ V}$		100	nA
<b>ON CHARACTERISTICS</b>					
$h_{FE}$	DC Current Gain	$V_{ce} = 2\text{ V}, I_c = 50\text{ mA}$ $V_{ce} = 2\text{ V}, I_c = 500\text{ mA}$ $V_{ce} = 2\text{ V}, I_c = 1\text{ A}$ $V_{ce} = 2\text{ V}, I_c = 2\text{ A}$ $V_{ce} = 0.8\text{ V}, I_c = 500\text{ mA}$	70 100 80 40 100	300	-
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_c = 250\text{ mA}, I_b = 25\text{ mA}$ $I_c = 500\text{ mA}, I_b = 50\text{ mA}$ $I_c = 1\text{ A}, I_b = 100\text{ mA}$ $I_c = 2\text{ A}, I_b = 200\text{ mA}$		200 350 500 750	mV mV mV 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



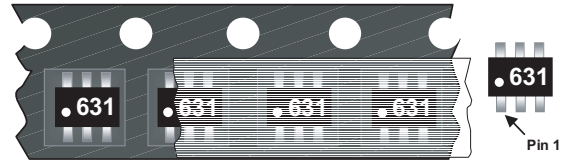
## SSOT-6 Packaging Configuration: Figure 1.0



### Packaging Description:

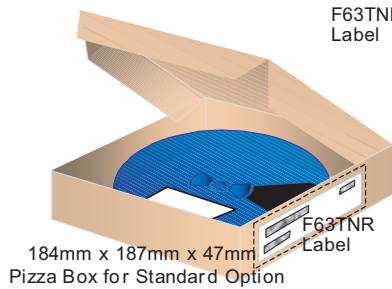
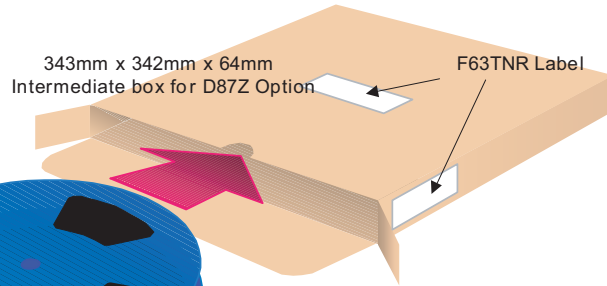
SSOT-6 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in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

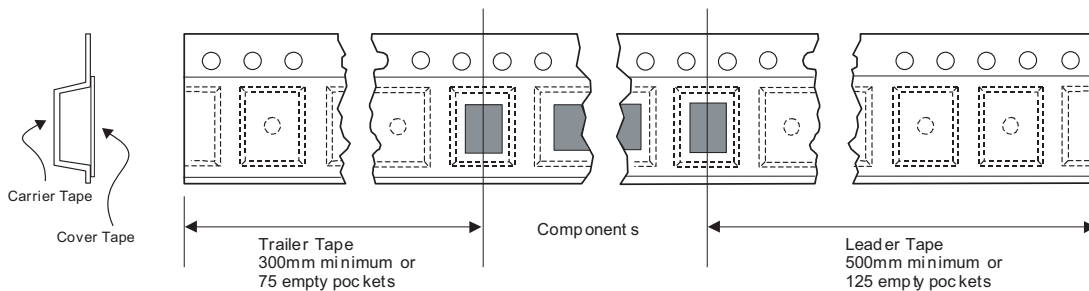
SSOT-6 Packaging Information		
Packaging Option	Standard (no flow code)	D87Z
Packaging type	TNR	TNR
Qty per Reel/Tube/Bag	3,000	10,000
Reel Size	7" Dia	13"
Box Dimension (mm)	184x187x47	343x343x64
Max qty per Box	9,000	30,000
Weight per unit (gm)	0.0158	0.0158
Weight per Reel (kg)	0.1440	0.4700
Note/Comments		



### F63TNR Label sample

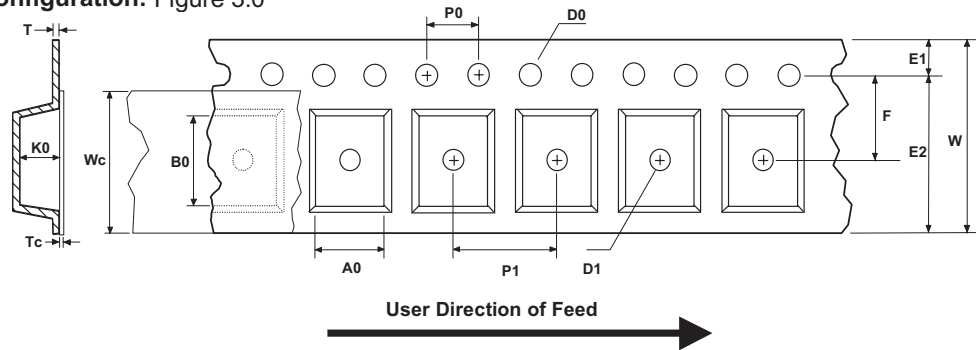


## SSOT-6 Tape Leader and Trailer Configuration: Figure 2.0



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

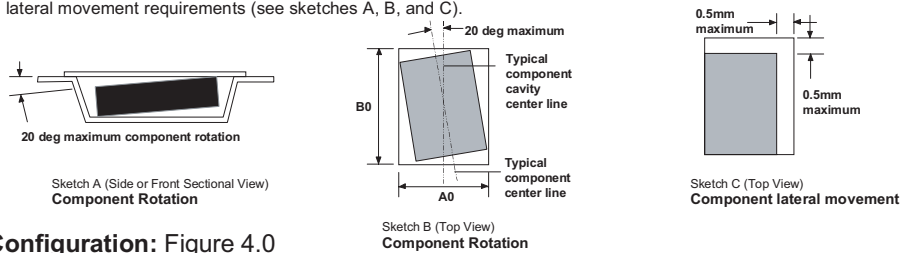
## SSOT-6 Embossed Carrier Tape Configuration: Figure 3.0



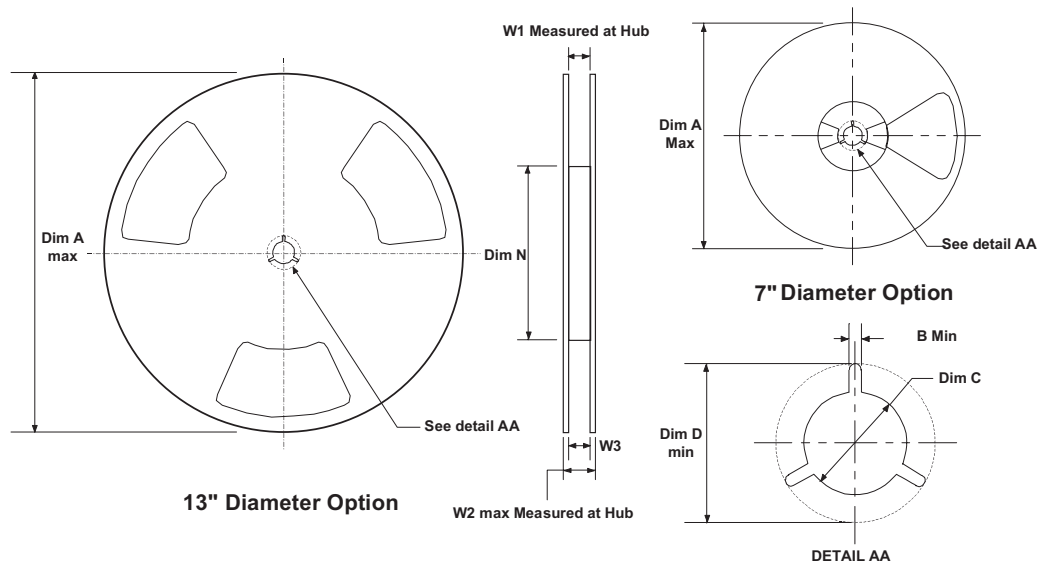
Dimensions are in millimeter

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



## SSOT-6 Reel Configuration: Figure 4.0

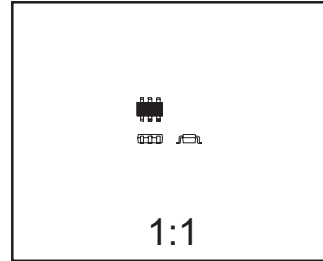
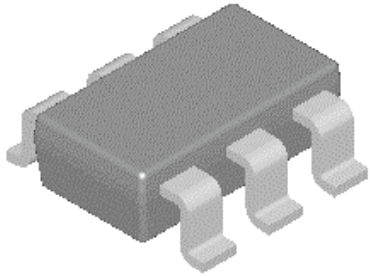


Dimensions are in inches and millimeters

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	7.00 177.8	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

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

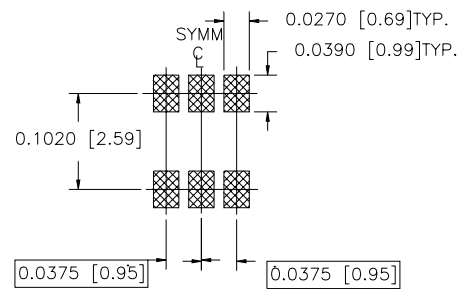
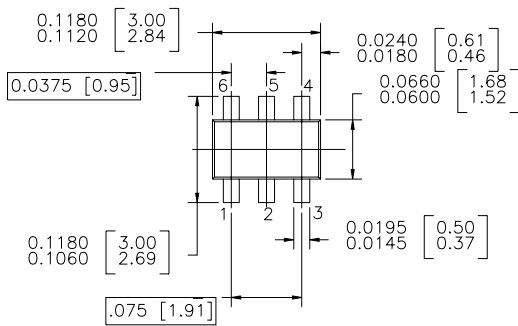
**SuperSOT -6 (FS PKG Code 31, 33)**



Scale 1:1 on letter size paper

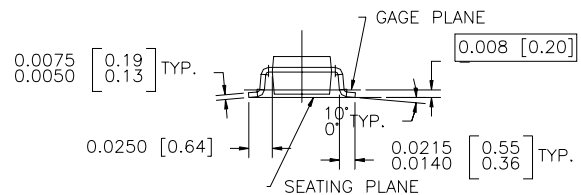
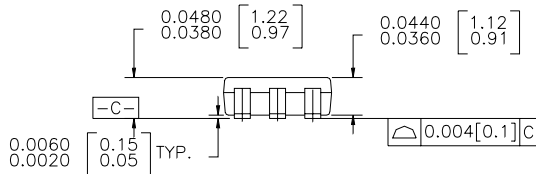
Dimensions shown below are in:  
inches [millimeters]

Part Weight per unit (gram): 0.0158



LAND PATTERN RECOMMENDATION

CONTROLLING DIMENSION IS INCH  
VALUES IN [ ] ARE MILLIMETERS



SUPER SOT 6 LEADS

NOTES : UNLESS OTHERWISE SPECIFIED

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

2.0 NO JEDEC REGISTRATION AS OF JULY 1996

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E <sup>2</sup> CMOS™	PowerTrench®	VCX™
FACT™	QFET™	
FACT Quiet Series™	QS™	
FAST®	Quiet Series™	
FASTr™	SuperSOT™-3	
GTO™	SuperSOT™-6	
HiSeC™	SuperSOT™-8	

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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