PNP General Purpose Amplifier

This device is designed for general purpose amplifier and switching applications at collector currents of 10 µA to 100 mA.

Absolute Maximum Ratings* \( T_A = 25^\circ C \) unless otherwise noted

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>( V_{CEO} )</td>
<td>Collector-Emitter Voltage</td>
<td>40</td>
<td>V</td>
</tr>
<tr>
<td>( V_{CEO} )</td>
<td>Collector-Base Voltage</td>
<td>40</td>
<td>V</td>
</tr>
<tr>
<td>( V_{CEO} )</td>
<td>Emitter-Base Voltage</td>
<td>5.0</td>
<td>V</td>
</tr>
<tr>
<td>( I_C )</td>
<td>Collector Current - Continuous</td>
<td>200</td>
<td>mA</td>
</tr>
<tr>
<td>( T_{Jr. \ T_{stg}} )</td>
<td>Operating and Storage Junction Temperature Range</td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
</tbody>
</table>

*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 degrees C.
2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3) All voltages (V) and currents (A) are negative polarity for PNP transistors.

Thermal Characteristics \( T_A = 25^\circ C \) unless otherwise noted

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Characteristic</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2N3906</td>
<td>*MMBT3906</td>
<td>**PZT3906</td>
</tr>
<tr>
<td>( P_D )</td>
<td>Total Device Dissipation</td>
<td>625</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>Derate above 25°C</td>
<td>5.0</td>
<td>2.8</td>
</tr>
<tr>
<td>( R_{JMC} )</td>
<td>Thermal Resistance, Junction to Case</td>
<td>83.3</td>
<td>°C/W</td>
</tr>
<tr>
<td>( R_{JMA} )</td>
<td>Thermal Resistance, Junction to Ambient</td>
<td>200</td>
<td>357</td>
</tr>
</tbody>
</table>

* Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06.*
** Device mounted on FR-4 PCB 36 mm X 18 mm X 1.5 mm; mounting pad for the collector lead min. 6 cm².
### Electrical Characteristics

**Symbol** | **Parameter** | **Test Conditions** | **Min** | **Max** | **Units**
--- | --- | --- | --- | --- | ---

**OFF CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Collector-Emitter Breakdown Voltage</th>
<th>Test Conditions</th>
<th>Min</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{BRCEO}$</td>
<td>$I_C = 1.0 , mA$, $I_B = 0$</td>
<td>40</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$V_{BRCEO}$</td>
<td>$I_C = 10 , \mu A$, $I_B = 0$</td>
<td>40</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$V_{BRCEO}$</td>
<td>$I_E = 10 , \mu A$, $I_C = 0$</td>
<td>5.0</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$I_{BL}$</td>
<td>Base Cutoff Current</td>
<td>$V_{CE} = 30 , V$, $V_{BE} = 3.0 , V$</td>
<td>50</td>
<td>nA</td>
<td></td>
</tr>
<tr>
<td>$I_{CEX}$</td>
<td>Collector Cutoff Current</td>
<td>$V_{CE} = 30 , V$, $V_{BE} = 3.0 , V$</td>
<td>50</td>
<td>nA</td>
<td></td>
</tr>
</tbody>
</table>

**ON CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Collector-Emitter Breakdown Voltage</th>
<th>Test Conditions</th>
<th>Min</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>$h_{FE}$</td>
<td>DC Current Gain</td>
<td>$I_C = 0.1 , mA$, $V_{CE} = 1.0 , V$</td>
<td>60</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>$h_{FE}$</td>
<td>$I_C = 1.0 , mA$, $V_{CE} = 1.0 , V$</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$h_{FE}$</td>
<td>$I_C = 10 , mA$, $V_{CE} = 1.0 , V$</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$h_{FE}$</td>
<td>$I_C = 50 , mA$, $V_{CE} = 1.0 , V$</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$h_{FE}$</td>
<td>$I_C = 100 , mA$, $V_{CE} = 1.0 , V$</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$V_{CEO}$</td>
<td>Collector-Emitter Saturation Voltage</td>
<td>$I_C = 10 , mA$, $I_E = 1.0 , mA$</td>
<td>0.25</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>$V_{CEO}$</td>
<td>$I_C = 50 , mA$, $I_E = 5.0 , mA$</td>
<td>0.4</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$V_{BE}$</td>
<td>Base-Emitter Saturation Voltage</td>
<td>$I_C = 10 , mA$, $I_E = 1.0 , mA$</td>
<td>0.65</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>$V_{BE}$</td>
<td>$I_C = 50 , mA$, $I_E = 5.0 , mA$</td>
<td>0.85</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$V_{BE}$</td>
<td>$I_C = 100 , mA$, $V_{CE} = 5.0 , V$, $R_S = 1.0 , k\Omega$, $f = 10 , Hz \text{ to } 15.7 , kHz$</td>
<td>4.0</td>
<td>dB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SMALL SIGNAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Min</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>$f_T$</td>
<td>Current Gain - Bandwidth Product</td>
<td>$I_C = 10 , mA$, $V_{CE} = 20 , V$, $f = 100 , kHz$</td>
<td>250</td>
<td>MHz</td>
<td></td>
</tr>
<tr>
<td>$C_{CEO}$</td>
<td>Output Capacitance</td>
<td>$V_{CE} = 5.0 , V$, $I_E = 0$, $f = 100 , kHz$</td>
<td>4.5</td>
<td>pF</td>
<td></td>
</tr>
<tr>
<td>$C_{CEO}$</td>
<td>Input Capacitance</td>
<td>$V_{BE} = 0.5 , V$, $I_C = 0$, $f = 100 , kHz$</td>
<td>10.0</td>
<td>pF</td>
<td></td>
</tr>
<tr>
<td>NF</td>
<td>Noise Figure</td>
<td>$I_C = 100 , \mu A$, $V_{CE} = 5.0 , V$, $R_S = 1.0 , k\Omega$, $f = 10 , Hz \text{ to } 15.7 , kHz$</td>
<td>4.0</td>
<td>dB</td>
<td></td>
</tr>
</tbody>
</table>

**SWITCHING CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Min</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t_d$</td>
<td>Delay Time</td>
<td>$V_{CC} = 3.0 , V$, $V_{BE} = 0.5 , V$, $I_B = 1.0 , mA$</td>
<td>35</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>$t_r$</td>
<td>Rise Time</td>
<td>$I_C = 10 , mA$, $I_B = 1.0 , mA$</td>
<td>35</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>$t_s$</td>
<td>Storage Time</td>
<td>$V_{CC} = 3.0 , V$, $I_C = 10 , mA$</td>
<td>225</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>$t_f$</td>
<td>Fall Time</td>
<td>$I_B = 1.0 , mA$</td>
<td>75</td>
<td>ns</td>
<td></td>
</tr>
</tbody>
</table>

*Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%  

**NOTE:** All voltages (V) and currents (A) are negative polarity for PNP transistors.

### Spice Model

PNP (Is=1.41f, Xii=3, Eg=18.7, Bf=180.7, Ne=1.5, Ise=0, Ifk=80m, Xlb=1.5, Br=4.977, Nc=2, Isc=0, Ikr=0, Rc=2.5, Cjc=9.728p, Mjc=.5776, Vjc=.75, Fc=.5, Cje=8.063p, Mje=.3677, Vje=.75, Tr=33.42n, Tf=179.3p, If=4, Vf=4, Xif=6, Rb=10)
**Typical Characteristics (continued)**

**Noise Figure vs Frequency**

![Graph showing Noise Figure vs Frequency](image1)

- $V_{CE} = 5.0V$
- $f = 1.0 kHz$
- $I_C = 100 \mu A$, $R_S = 200 \Omega$
- $I_C = 1.0 mA$, $R_S = 200 \Omega$
- $I_C = 100 \mu A$, $R_S = 2.0 \Omega$

**Noise Figure vs Source Resistance**

![Graph showing Noise Figure vs Source Resistance](image2)

- $V_{CE} = 5.0V$
- $f = 1.0 kHz$
- $I_C = 100 \mu A$
- $I_C = 1.0 mA$

**Switching Times vs Collector Current**

![Graph showing Switching Times vs Collector Current](image3)

- $I_c = I_{c1} = I_{c2} = 10 mA$
- $t_r = t_f = 10 ns$

**Turn On and Turn Off Times vs Collector Current**

![Graph showing Turn On and Turn Off Times vs Collector Current](image4)

- $V_{BE(OFF)} = 0.5V$
- $I_{on} = I_{off} = 10 mA$
- $t_{on} = t_{off} = 10 ns$

**Power Dissipation vs Ambient Temperature**

![Graph showing Power Dissipation vs Ambient Temperature](image5)

- TO-92
- SOT-223
- SOT-23

---

**PNP General Purpose Amplifier**

(continued)
Typical Characteristics (continued)

**Voltage Feedback Ratio**

- Graph showing the voltage feedback ratio ($h_v$) against collector current ($I_c$) for different values of $h_v$. The graph includes a curve for $V_{CE} = 10\,\text{V}$ and $f = 1.0\,\text{kHz}$.

**Input Impedance**

- Graph showing the input impedance ($h_\text{ie}$) against collector current ($I_c$) for $V_{CE} = 10\,\text{V}$ and $f = 1.0\,\text{kHz}$.

**Output Admittance**

- Graph showing the output admittance ($h_\text{oe}$) against collector current ($I_c$) for $V_{CE} = 10\,\text{V}$ and $f = 1.0\,\text{kHz}$.

**Current Gain**

- Graph showing the current gain ($h_\text{fe}$) against collector current ($I_c$) for $V_{CE} = 10\,\text{V}$ and $f = 1.0\,\text{kHz}$.
TO-92 Tape and Reel Data

TO-92 Packaging
Configuration: Figure 1.0

TO-92 Tape and Reel Data

TO-92 Packaging
Configuration: Figure 1.0

(TO-92) BULK PACKING INFORMATION

<table>
<thead>
<tr>
<th>EOL CODE</th>
<th>DESCRIPTION</th>
<th>LEADCLIP DIMENSION</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>J18Z</td>
<td>TO-18 OPTION STD</td>
<td>NO CLIP</td>
<td>2.0 K / BOX</td>
</tr>
<tr>
<td>J55Z</td>
<td>TO-5 OPTION STD</td>
<td>NO CLIP</td>
<td>1.5 K / BOX</td>
</tr>
<tr>
<td>NO EOL CODE</td>
<td>TO-92 STANDARD STRAIGHT FOR: PKG 94</td>
<td>NO LEAD CLIP</td>
<td>2.0 K / BOX</td>
</tr>
<tr>
<td>L18Z</td>
<td>TO-92 STANDARD STRAIGHT FOR: PKG 94</td>
<td>NO LEAD CLIP</td>
<td>2.0 K / BOX</td>
</tr>
</tbody>
</table>

EOL CODE DESCRIPTION LEADCLIP QUANTITY
J18Z TO-18 OPTION STD NO LEAD CLIP 2.0 K / BOX
J55Z TO-5 OPTION STD NO LEAD CLIP 1.5 K / BOX
N EOL CODE TO-92 STANDARD STRAIGHT FOR: PKG 94 NO LEAD CLIP 2.0 K / BOX
L18Z TO-92 STANDARD STRAIGHT FOR: PKG 94 NO LEAD CLIP 2.0 K / BOX

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TO-92 Reeling Style
Configuration: Figure 2.0

Machine Option “A” (H)
Style “A”, D26Z, D70Z (s/h)
FIRST WIRE OFF IS EMITTER
ADHESIVE TAPE IS ON THE TOP SIDE
FLAT OF TRANSISTOR IS ON BOTTOM

Machine Option “E” (J)
Style “E”, D27Z, D71Z (s/h)
FIRST WIRE OFF IS COLLECTOR
ADHESIVE TAPE IS ON THE TOP SIDE
FLAT OF TRANSISTOR IS ON BOTTOM

TO-92 Radial Ammo Packaging
Configuration: Figure 3.0

ORDER STYLE
D74Z (M)
FIRST WIRE OFF IS EMITTER (ON PKG. 92)
ADHESIVE TAPE IS ON BOTTOM SIDE
FLAT OF TRANSISTOR IS ON BOTTOM

ORDER STYLE
D75Z (P)
FIRST WIRE OFF IS COLLECTOR (ON PKG. 92)
ADHESIVE TAPE IS ON BOTTOM SIDE
FLAT OF TRANSISTOR IS ON TOP
TO-92 Tape and Reel Data, continued

TO-92 Tape and Reel Taping
Dimension Configuration: Figure 4.0

TO-92 Reel
Configuration: Figure 5.0

Note: All dimensions are in inches.

July 1999, Rev. A
TO-92 Package Dimensions

TO-92 (FS PKG Code 92, 94, 96)

Scale 1:1 on letter size paper
Dimensions shown below are in:
inches [millimeters]
Part Weight per unit (gram): 0.1977

<table>
<thead>
<tr>
<th>N.</th>
<th>92</th>
<th>94</th>
<th>96</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>F</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>1</td>
<td>E</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>S</td>
<td>C</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>B</td>
<td>S</td>
</tr>
</tbody>
</table>

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SOT-23 Tape and Reel Data

**SOT-23 Packaging Configuration:** Figure 10

**Packaging Description:**
SOT-23 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 polyethylene film, adhesive layer, sealant, and antistatic sprayed agent). These reels or in standard option are shipped with 3,000 units per 7" or 177cm diameter reel. The reels are dark blue in color and made of polystyrene plastic (antistatic coated). Other options come in 10,000 units per 13" or 330cm diameter reel. This and some other options are described in the Packaging Information table.

Other options come 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 labeled and placed inside a standard intermedial box of recyclable corrugated brown paper with a Fairchild logo printing. One pizza box contents eight reels maximum. And these intermedial boxes are placed inside a labeled shipping box which comes in different sizes depending on the number of parts shipped.

---

**SOT-23 Tape Leader and Trailer Configuration:** Figure 20

**SOT-23 Unit Orientation**

<table>
<thead>
<tr>
<th>3P ( \times )</th>
<th>( 43 \times 42 \times 64 )mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Readable Label sample</td>
<td></td>
</tr>
</tbody>
</table>

**Intermediate box for L87Z Option**

<table>
<thead>
<tr>
<th>3P ( \times )</th>
<th>( 137 \times 107 \times 183 )mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Readable Label</td>
<td></td>
</tr>
</tbody>
</table>

---

**SOT-23 Tape and Reel Data Table**

<table>
<thead>
<tr>
<th>Packaging/Option</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>QTY per Reel/Tube/Bag</td>
<td></td>
</tr>
<tr>
<td>Qty per Reel/Tube/Bag</td>
<td></td>
</tr>
<tr>
<td>Box Dimension (mm)</td>
<td></td>
</tr>
<tr>
<td>Max qty per box</td>
<td></td>
</tr>
<tr>
<td>Weight per unit (gm)</td>
<td></td>
</tr>
<tr>
<td>Weight per Reel (kg)</td>
<td></td>
</tr>
<tr>
<td>Note/Comments</td>
<td></td>
</tr>
</tbody>
</table>

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**SOT-23 Tape and Reel Data, continued**

**SOT-23 Embossed Carrier Tape**

**Configuration:** Figure 3.0

**Dimensions are in millimeter**

<table>
<thead>
<tr>
<th>Pkg type</th>
<th>A0</th>
<th>B0</th>
<th>W</th>
<th>D0</th>
<th>D1</th>
<th>E1</th>
<th>E2</th>
<th>F</th>
<th>P1</th>
<th>P0</th>
<th>K0</th>
<th>T</th>
<th>Wc</th>
<th>Tc</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOT-23</td>
<td>3.15</td>
<td>2.77</td>
<td>2.0</td>
<td>1.55</td>
<td>1.15</td>
<td>1.75</td>
<td>6.25</td>
<td>3.50</td>
<td>4.0</td>
<td>4.0</td>
<td>1.35</td>
<td>0.228</td>
<td>3.2</td>
<td>0.06</td>
</tr>
<tr>
<td>(8mm)</td>
<td>+/-0.10</td>
<td>+/-0.10</td>
<td>+/-0.3</td>
<td>+/-0.05</td>
<td>+/-0.125</td>
<td>+/-0.10</td>
<td>6.25</td>
<td>+/-0.05</td>
<td>+/-0.1</td>
<td>+/-0.1</td>
<td>+/-0.10</td>
<td>0.228</td>
<td>+/-0.013</td>
<td>+/-0.3</td>
</tr>
</tbody>
</table>

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).

**User Direction of Feed**

**SOT-23 Reel Configuration:** Figure 4.0

**Dimensions are in inches and millimeters**

<table>
<thead>
<tr>
<th>Tape Size</th>
<th>Reel Option</th>
<th>Dim A</th>
<th>Dim B</th>
<th>Dim C</th>
<th>Dim D</th>
<th>Dim N</th>
<th>Dim W1</th>
<th>Dim W2</th>
<th>Dim W3 (LSL-USL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8mm</td>
<td>7” Dia</td>
<td>7.00</td>
<td>0.599</td>
<td>0.059</td>
<td>0.020</td>
<td>177.6</td>
<td>0.315</td>
<td>0.059</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.95</td>
<td>0.315</td>
<td>0.059</td>
<td>0.000</td>
<td>14.4</td>
<td>0.331</td>
<td>0.331</td>
<td>0.429</td>
</tr>
<tr>
<td>8mm</td>
<td>13” Dia</td>
<td>13.00</td>
<td>3.332</td>
<td>0.599</td>
<td>0.059</td>
<td>0.020</td>
<td>330</td>
<td>0.315</td>
<td>0.059</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>20.2</td>
<td>0.315</td>
<td>0.059</td>
<td>0.000</td>
<td>14.4</td>
<td>0.331</td>
<td>0.331</td>
</tr>
</tbody>
</table>

September 1999, Rev. C
SOT-23 Package Dimensions

SOT-23 (FS PKG Code 49)

Scale 1:1 on letter size paper
Dimensions shown below are in:
inches [millimeters]

Part Weight per unit (gram): 0.0082

Note: Unless otherwise specified:
1. Standard lead finish: 150 microinches / 3.81 micrometers
   Minimum tin / lead (tin-lead) on alloy 42
2. Reference JEDEC registration TO-236, variation A8, issue G, dated Jul 1993
SOT-223 Tape and Reel Data

SOT-223 Tape Leader and Trailer Configuration: Figure 2.0

Package Description:
SOT-223 parts are shipped in tape. The 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 polymer film, adhesive layer, waxant and anti-static sprayed agent. These retailed parts in standard option are shipped with 2,500 units per 13" or 330cm diameter reel. The reels are dark blue in color and is made of polystyrene plastic (anti-static coated). Other option comes in 500 units per 7" or 177cm diameter reel. This and some other options are further described in the Packaging Information table.

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

SOT-223 Packaging Information

<table>
<thead>
<tr>
<th>Packaging Option</th>
<th>SOT-223 (no flow code)</th>
<th>D84Z</th>
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<tbody>
<tr>
<td>Qty per Reel/Tube/Bag</td>
<td>2,500</td>
<td>500</td>
</tr>
<tr>
<td>Reel Size</td>
<td>13&quot; Dia</td>
<td>7&quot; Dia</td>
</tr>
<tr>
<td>Box Dimension (mm)</td>
<td>343x64x343</td>
<td>184x187x47</td>
</tr>
<tr>
<td>Max qty per Box</td>
<td>5,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Weight per unit (gm)</td>
<td>0.1246</td>
<td>0.1246</td>
</tr>
<tr>
<td>Weight per Reel (kg)</td>
<td>0.7250</td>
<td>0.1532</td>
</tr>
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</table>

Note/Comments

Antistatic Cover Tape

Static Dissipative Embossed Carrier Tape

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September 1999, Rev. B
SOT-223 Tape and Reel Data, continued

SOT-223 Embossed Carrier Tape Configuration: Figure 3.0

SOT-223 Reel Configuration: Figure 4.0

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).

Dimensions are in millimeter

<table>
<thead>
<tr>
<th>Pkg type</th>
<th>A0</th>
<th>B0</th>
<th>W</th>
<th>D0</th>
<th>D1</th>
<th>E0</th>
<th>E2</th>
<th>F</th>
<th>P0</th>
<th>P1</th>
<th>K0</th>
<th>T</th>
<th>Wc</th>
<th>Tc</th>
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<tbody>
<tr>
<td>SOT-223 (12mm)</td>
<td>6.53</td>
<td>7.42</td>
<td>12.0</td>
<td>1.55</td>
<td>1.50</td>
<td>1.75</td>
<td>10.25</td>
<td>5.50</td>
<td>9.0</td>
<td>4.0</td>
<td>1.58</td>
<td>0.292</td>
<td>0.55</td>
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<tr>
<td></td>
<td>+/-0.10</td>
<td>+/-0.10</td>
<td>+/-0.10</td>
<td>+/-0.05</td>
<td>+/-0.10</td>
<td>+/-0.10</td>
<td>+/-0.3</td>
<td>+/-0.05</td>
<td>+/-0.1</td>
<td>+/-0.10</td>
<td>+/-0.05</td>
<td>+/-0.05</td>
<td>+/-0.02</td>
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Notes: 12mm 7” Diameter Option

Dimensions are in inches and millimeters

<table>
<thead>
<tr>
<th>Tape Size</th>
<th>Reel Option</th>
<th>Dim A</th>
<th>Dim B</th>
<th>Dim C</th>
<th>Dim D</th>
<th>Dim N</th>
<th>Dim W1</th>
<th>Dim W2</th>
<th>Dim W3 (LSL-USL)</th>
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</thead>
<tbody>
<tr>
<td>12mm</td>
<td>7” Dia</td>
<td>7.00</td>
<td>0.059</td>
<td>0.512</td>
<td>0.200</td>
<td>0.498</td>
<td>0.090</td>
<td>0.724</td>
<td>0.469 – 0.605</td>
</tr>
<tr>
<td>13” Dia</td>
<td>330</td>
<td>12.00</td>
<td>0.059</td>
<td>0.512</td>
<td>0.200</td>
<td>0.498</td>
<td>0.090</td>
<td>0.724</td>
<td>0.469 – 0.605</td>
</tr>
</tbody>
</table>

July 1999, Rev. B
SOT-223 Package Dimensions

SOT-223 (FS PKG Code 47)

Scale 1:1 on letter size paper

Part Weight per unit (gram): 0.1246

NOTES: UNLESS OTHERWISE SPECIFIED
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<td>PowerTrench®</td>
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<td>Bottomless™</td>
<td>GlobalOptoisolator™</td>
<td>QFET™</td>
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<tr>
<td>CoolFET™</td>
<td>GTO™</td>
<td>QS™</td>
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<td>HiSeC™</td>
<td>QT Optoelectronics™</td>
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<tr>
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<td>ISOPLANAR™</td>
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<td>MICROWIRE™</td>
<td>SILENT SWITCHER®</td>
</tr>
<tr>
<td>EnSigna™</td>
<td>OPTOLOGIC™</td>
<td>SMART START™</td>
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<td>SuperSOT™-8</td>
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<tr>
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PRODUCT STATUS DEFINITIONS

Definition of Terms

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