To learn more about ON Semiconductor, please visit our website at www.onsemi.com

Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor’s system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.
KSD882
NPN Epitaxial Silicon Transistor

Recommended Applications
- Audio Frequency Power Amplifier

Features
- Low Speed Switching
- Complement to KSB772.

Absolute Maximum Ratings*  $T_a = 25^\circ C$ unless otherwise noted

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Ratings</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BV_CBO</td>
<td>Collector-Base Voltage</td>
<td>40</td>
<td>V</td>
</tr>
<tr>
<td>BV_CEO</td>
<td>Collector-Emitter Voltage</td>
<td>30</td>
<td>V</td>
</tr>
<tr>
<td>BV_EBO</td>
<td>Emitter-Base Voltage</td>
<td>5</td>
<td>V</td>
</tr>
<tr>
<td>IC</td>
<td>Collector Current(DC)</td>
<td>3</td>
<td>A</td>
</tr>
<tr>
<td>IC</td>
<td>Collector Current(Pulse)**</td>
<td>7</td>
<td>A</td>
</tr>
<tr>
<td>IB</td>
<td>Base Current</td>
<td>0.6</td>
<td>A</td>
</tr>
<tr>
<td>PD</td>
<td>Total Device Dissipation($T_a=25^\circ C$)</td>
<td>10</td>
<td>W</td>
</tr>
<tr>
<td></td>
<td>Total Device Dissipation($T_a=25^\circ C$)</td>
<td>1</td>
<td>W</td>
</tr>
<tr>
<td>TJ, TSTG</td>
<td>Junction and Storage Temperature</td>
<td>-55~150</td>
<td>°C</td>
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* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
** PW=10ms, Duty Cycle=50%

Electrical Characteristics  $T_a=25^\circ C$ unless otherwise noted

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Test Condition</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>BV_CBO</td>
<td>Collector-Base Breakdown Voltage</td>
<td>$I_C=500\mu A, I_E=0$</td>
<td>40</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>BV_CEO</td>
<td>Collector-Emitter Breakdown Voltage</td>
<td>$I_C=5mA, I_B=0$</td>
<td>30</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>BV_EBO</td>
<td>Emitter-Base Breakdown Voltage</td>
<td>$I_C=500\mu A, I_C=0$</td>
<td>5</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>IC</td>
<td>Collector Cut-off Current</td>
<td>$V_CB=30V, I_E=0$</td>
<td>1</td>
<td></td>
<td></td>
<td>(\mu A)</td>
</tr>
<tr>
<td>IB</td>
<td>Emitter Cut-off Current</td>
<td>$V_{EB}=3V, I_C=0$</td>
<td>1</td>
<td></td>
<td></td>
<td>(\mu A)</td>
</tr>
<tr>
<td>hFE1</td>
<td>*DC Current Gain</td>
<td>$V_CE=2V, I_C=20mA$</td>
<td>30</td>
<td>150</td>
<td>400</td>
<td>MHz</td>
</tr>
<tr>
<td>hFE2</td>
<td>*DC Current Gain</td>
<td>$V_CE=2V, I_C=1A$</td>
<td>60</td>
<td>160</td>
<td></td>
<td>MHz</td>
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<tr>
<td>V_CE(sat)</td>
<td>*Collector-Emitter Saturation Voltage</td>
<td>$I_C=2A, I_B=0.2A$</td>
<td>0.3</td>
<td>0.5</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>V_BE(sat)</td>
<td>*Base-Emitter Saturation Voltage</td>
<td>$I_C=2A, I_B=0.2A$</td>
<td>1.0</td>
<td>2.0</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>fT</td>
<td>Current Gain Bandwidth Product</td>
<td>$V_CE=5V, I_E=0.1A$</td>
<td>90</td>
<td></td>
<td></td>
<td>MHz</td>
</tr>
<tr>
<td>C_oe</td>
<td>Output Capacitance</td>
<td>$V_CB=10V, I_E=0$</td>
<td>45</td>
<td></td>
<td></td>
<td>pF</td>
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* Pulse Test: PW=350\mu s, Duty Cycle=2%. Pulsed
**h<sub>FE</sub> Classification**

<table>
<thead>
<tr>
<th>Classification</th>
<th>R</th>
<th>O</th>
<th>Y</th>
<th>G</th>
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<tr>
<td>h&lt;sub&gt;FE2&lt;/sub&gt;</td>
<td>60 ~ 120</td>
<td>100 ~ 200</td>
<td>160 ~ 320</td>
<td>200 ~ 400</td>
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**Ordering Information**

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<tr>
<th>Part Number</th>
<th>Marking</th>
<th>Package</th>
<th>Packing Method</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>KSD882OSTU</td>
<td>D882O</td>
<td>TO-126</td>
<td>TUBE</td>
<td>hFE1 R grade</td>
</tr>
<tr>
<td>KSD882RSTU</td>
<td>D882R</td>
<td>TO-126</td>
<td>TUBE</td>
<td>hFE1 O grade</td>
</tr>
<tr>
<td>KSD882YSTU</td>
<td>D882Y</td>
<td>TO-126</td>
<td>TUBE</td>
<td>hFE1 Y grade</td>
</tr>
<tr>
<td>KSD882GSTU</td>
<td>D882G</td>
<td>TO-126</td>
<td>TUBE</td>
<td>hFE1 G grade</td>
</tr>
</tbody>
</table>

1. Affix "-S-" means the standard TO126 Package. If the affix is "-STS-" instead of "-S-", that means the short-lead TO126 package.
2. Suffix "-TU" means the tube packing. The Suffix "TU" could be replaced to other suffix character as packing method.
Typical Characteristics

Figure 1. Static Characteristic

Figure 2. DC current Gain

Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

Figure 4. Current Gain Bandwidth Product

Figure 5. Collector Output Capacitance

Figure 6. Safe Operating Area
Typical Characteristics

Figure 7. Derating Curve Of Safe Operating Areas

Figure 8. Power Derating
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- FastvCore™
- FPS™
- FRFET®
- Global Power ResourceSM
- Green FPS™
- Green FPS™ e-Series™
- GTO™
- i-Lo™
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- Quiet Series™
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- SPM®
- STEALTH™
- SuperFET™
- SuperSOT™
- SuperSOT™-3
- SuperSOT™-6
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PRODUCT STATUS DEFINITIONS
Definition of Terms

<table>
<thead>
<tr>
<th>Datasheet Identification</th>
<th>Product Status</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Advance Information</td>
<td>Formative or In Design</td>
<td>This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.</td>
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<tr>
<td>Preliminary</td>
<td>First Production</td>
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<td>Full Production</td>
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</tr>
<tr>
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<td>Not In Production</td>
<td>This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.</td>
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