KSA473
PNP Epitaxial Silicon Transistor

Features
• Low Frequency Power Amplifier, Power Regulator
• Collector Current : $I_C = -3\text{A}$
• Collector Dissipation : $P_C = 10\text{W}$ ($T_C=25^\circ\text{C}$)
• Complement to KSC1173

Absolute Maximum Ratings * $T_A = 25^\circ\text{C}$ unless otherwise noted

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{CBO}$</td>
<td>Collector-Base Voltage</td>
<td>- 30</td>
<td>V</td>
</tr>
<tr>
<td>$V_{CEO}$</td>
<td>Collector-Emitter Voltage</td>
<td>- 30</td>
<td>V</td>
</tr>
<tr>
<td>$V_{EBO}$</td>
<td>Emitter-Base Voltage</td>
<td>- 5</td>
<td>V</td>
</tr>
<tr>
<td>$I_C$</td>
<td>Collector Current</td>
<td>- 3</td>
<td>A</td>
</tr>
<tr>
<td>$P_C$</td>
<td>Collector Dissipation ($T_C=25^\circ\text{C}$)</td>
<td>10</td>
<td>W</td>
</tr>
<tr>
<td>$T_J$</td>
<td>Junction Temperature</td>
<td>150</td>
<td>^\circ\text{C}</td>
</tr>
<tr>
<td>$T_{STG}$</td>
<td>Storage Temperature</td>
<td>- 55 to + 150</td>
<td>^\circ\text{C}</td>
</tr>
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</table>

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
### 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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<tbody>
<tr>
<td>BV&lt;sub&gt;CBO&lt;/sub&gt;</td>
<td>Collector-Base Breakdown Voltage</td>
<td>$I_C = - 500\mu A$, $I_E = 0$</td>
<td>- 30</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>BV&lt;sub&gt;CEO&lt;/sub&gt;</td>
<td>Collector-Emitter Breakdown Voltage</td>
<td>$I_C = - 10mA$, $I_E = 0$</td>
<td>- 30</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>BV&lt;sub&gt;EBO&lt;/sub&gt;</td>
<td>Emitter-Base Breakdown Voltage</td>
<td>$I_E = - 1mA$, $I_C = 0$</td>
<td>- 5</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>ICBO</td>
<td>Collector Cut-off Current</td>
<td>$V_{CB} = - 20V$, $I_E = 0$</td>
<td>- 1.0</td>
<td></td>
<td></td>
<td>$\mu A$</td>
</tr>
<tr>
<td>IEBO</td>
<td>Emitter Cut-off Current</td>
<td>$V_{EB} = - 5V$, $I_C = 0$</td>
<td>- 1.0</td>
<td></td>
<td></td>
<td>$\mu A$</td>
</tr>
<tr>
<td>$h_{FE1}$</td>
<td>DC Current Gain</td>
<td>$V_{CE} = - 2V$, $I_C = - 0.5A$</td>
<td>70</td>
<td>25</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>$h_{FE2}$</td>
<td></td>
<td>$V_{CE} = - 2V$, $I_C = - 2.5A$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V&lt;sub&gt;CE(sat)&lt;/sub&gt;</td>
<td>Collector-Emitter Saturation Voltage</td>
<td>$I_C = - 2A$, $I_E = - 0.2A$</td>
<td>- 0.3</td>
<td>- 0.8</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>V&lt;sub&gt;BE(on)&lt;/sub&gt;</td>
<td>Base-Emitter On Voltage</td>
<td>$V_{CE} = - 2V$, $I_C = - 0.5A$</td>
<td>- 0.75</td>
<td>- 1.0</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>f&lt;sub&gt;T&lt;/sub&gt;</td>
<td>Current Gain Bandwidth Product</td>
<td>$V_{CE} = - 2V$, $I_C = - 0.5A$</td>
<td></td>
<td></td>
<td></td>
<td>MHz</td>
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<tr>
<td>Cob</td>
<td>Output Capacitance</td>
<td>$V_{CB} = - 10V$, $I_E = 0$, $f = 1MHz$</td>
<td>40</td>
<td></td>
<td></td>
<td>pF</td>
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</table>

### $h_{FE}$ Classification

<table>
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<tr>
<th>Classification</th>
<th>$O$</th>
<th>$Y$</th>
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<tbody>
<tr>
<td>$h_{FE1}$</td>
<td>70 ~ 140</td>
<td>120 ~ 240</td>
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Typical Performance Characteristics

Figure 1. Static Characteristic

Figure 2. DC current Gain

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

Figure 4. Base-Emitter On Voltage

Figure 5. Collector Output Capacitance

Figure 6. Safe Operating Area
Figure 7. Power Derating
Physical Dimensions

TO-220

NOTES: UNLESS OTHERWISE SPECIFIED
A) REFERENCE JEDEC, TO-220, ISSUE K, VARIATION AB, DATED APRIL, 2002.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DIMENSIONING AND TOLERANCING PER ANSI Y14.5 - 1973
D) LOCATION OF THE PIN HOLE MAY VARY
   (LOWER LEFT CORNER, LOWER CENTER
   AND CENTER OF THE PACKAGE)
\(\triangle\) DOES NOT COMPLY JEDEC STANDARD VALUE.
E) "A1" DIMENSIONS REPRESENT LIKE BELOW:
   SINGLE GAUGE = 0.51 - 0.81
   DUAL GAUGE = 1.14 - 1.40
F) DRAWING FILE NAME: T0220B03REV6
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SyncFET™
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TinyBuck™
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<th>Definition</th>
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