BC636
PNP Epitaxial Silicon Transistor

Features
- Switching and Amplifier Applications
- Complement to BC635

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Top Mark</th>
<th>Package</th>
<th>Packing Method</th>
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<tbody>
<tr>
<td>BC636TA</td>
<td>BC63</td>
<td>TO-92 3L</td>
<td>Ammo</td>
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</table>

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ C$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{CER}$</td>
<td>Collector-Emitter Voltage at $R_{BE} = 1 \Omega$</td>
<td>-45</td>
<td>V</td>
</tr>
<tr>
<td>$V_{CES}$</td>
<td>Collector-Emitter Voltage</td>
<td>-45</td>
<td>V</td>
</tr>
<tr>
<td>$V_{CEO}$</td>
<td>Collector-Emitter Voltage</td>
<td>-45</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>-1</td>
<td>A</td>
</tr>
<tr>
<td>$I_{CP}$</td>
<td>Peak Collector Current</td>
<td>-1.5</td>
<td>A</td>
</tr>
<tr>
<td>$I_B$</td>
<td>Base Current</td>
<td>-100</td>
<td>mA</td>
</tr>
<tr>
<td>$T_J$</td>
<td>Junction Temperature</td>
<td>150</td>
<td>°C</td>
</tr>
<tr>
<td>$T_{STG}$</td>
<td>Storage Temperature</td>
<td>-65 to 150</td>
<td>°C</td>
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</table>
## Thermal Characteristics

Values are at $T_A = 25°C$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_D$</td>
<td>Power Dissipation</td>
<td>1</td>
<td>W</td>
</tr>
<tr>
<td></td>
<td>Derate Above 25°C</td>
<td>8</td>
<td>mW/°C</td>
</tr>
<tr>
<td>$R_{JJA}$</td>
<td>Thermal Resistance, Junction-to-Ambient</td>
<td>125</td>
<td>°C/W</td>
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</table>

### Note:
1. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

## Electrical Characteristics

Values are at $T_A = 25°C$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Conditions</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B_{VCE}$</td>
<td>Collector-Emitter Breakdown Voltage</td>
<td>$I_C = -10 mA, I_B = 0$</td>
<td>-45</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>$I_{CBO}$</td>
<td>Collector Cut-Off Current</td>
<td>$V_{CB} = -30 V, I_E = 0$</td>
<td></td>
<td>-0.1</td>
<td></td>
<td>μA</td>
</tr>
<tr>
<td>$I_{EBO}$</td>
<td>Emitter Cut-Off Current</td>
<td>$V_{EB} = -5 V, I_C = 0$</td>
<td></td>
<td>-10</td>
<td></td>
<td>μA</td>
</tr>
<tr>
<td>$h_{FE1}$</td>
<td>DC Current Gain</td>
<td>$V_{CE} = -2 V, I_C = -5 mA$</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$h_{FE2}$</td>
<td>DC Current Gain</td>
<td>$V_{CE} = -2 V, I_C = -150 mA$</td>
<td>40</td>
<td>250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$h_{FE3}$</td>
<td>DC Current Gain</td>
<td>$V_{CE} = -2 V, I_C = -500 mA$</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$V_{CE(sat)}$</td>
<td>Collector-Emitter Saturation Voltage</td>
<td>$I_C = -500 mA, I_B = -50 mA$</td>
<td></td>
<td>-0.5</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>$V_{BE(on)}$</td>
<td>Base-Emitter On Voltage</td>
<td>$V_{CE} = -2 V, I_C = -500 mA$</td>
<td></td>
<td>-1</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>$f_T$</td>
<td>Current Gain Bandwidth Product</td>
<td>$V_{CE} = -5 V, I_C = -10 mA, f = 50 MHz$</td>
<td>100</td>
<td></td>
<td></td>
<td>MHz</td>
</tr>
</tbody>
</table>
Typical Performance Characteristics

Figure 1. Static Characteristic

Figure 2. DC Current Gain

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

Figure 4. Base-Emitter On Voltage

Figure 5. Collector Output Capacitance
Physical Dimensions

Figure 6. 3-Lead, TO-92, Molded, 0.2 In Line Spacing Lead Form, Ammo Type

NOTES: UNLESS OTHERWISE SPECIFIED
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<th>Definition</th>
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<td>Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.</td>
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