1 Product profile

1.1 General description

NPN general-purpose transistors in a small SOT23 (TO-236AB) Surface-Mounted Device (SMD) plastic package.

Table 1. Product overview

<table>
<thead>
<tr>
<th>Type number</th>
<th>Package</th>
<th>JEDEC</th>
<th>PNP complement</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC817K-16H</td>
<td>SOT23</td>
<td>TO-236AB</td>
<td>-</td>
</tr>
<tr>
<td>BC817K-25H</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>BC817K-40H</td>
<td></td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

1.2 Features and benefits

- Three current gain selections
- High power dissipation capability
- High-temperature applications up to 175 °C
- AEC-Q101 qualified

1.3 Applications

- General-purpose switching and amplification

1.4 Quick reference data

Table 2. Quick reference data

<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>V_{CEO}</td>
<td>collector-emitter voltage</td>
<td>open base</td>
<td>-</td>
<td>-</td>
<td>45</td>
<td>V</td>
</tr>
<tr>
<td>I_C</td>
<td>collector current</td>
<td>-</td>
<td>-</td>
<td>500</td>
<td>mA</td>
<td></td>
</tr>
<tr>
<td>I_{CM}</td>
<td>peak collector current</td>
<td>single pulse; ( t_p \leq 1 \text{ ms} )</td>
<td>-</td>
<td>1</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>h_{FE}</td>
<td>DC current gain</td>
<td>( V_{CE} = 1 \text{ V; } I_C = 100 \text{ mA} )</td>
<td></td>
<td>100</td>
<td>250</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>BC817K-16H</td>
<td></td>
<td>[1]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC817K-25H</td>
<td></td>
<td>[1]</td>
<td>160</td>
<td>400</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>BC817K-40H</td>
<td></td>
<td>[1]</td>
<td>250</td>
<td>600</td>
<td>-</td>
</tr>
</tbody>
</table>

[1] pulsed; \( t_p \leq 300 \mu \text{s; } \delta \leq 0.02 \)
2 Pinning information

Table 3. Pinning

<table>
<thead>
<tr>
<th>Pin</th>
<th>Symbol</th>
<th>Description</th>
<th>Simplified outline</th>
<th>Graphic symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B</td>
<td>base</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>E</td>
<td>emitter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>collector</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3 Ordering information

Table 4. Ordering information

<table>
<thead>
<tr>
<th>Package</th>
<th>Type number</th>
<th>Description</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>TO-236AB</td>
<td>BC817K-16H</td>
<td>Plastic surface-mounted package; 3 leads</td>
<td>SOT23</td>
</tr>
<tr>
<td></td>
<td>BC817K-25H</td>
<td>Plastics surface-mounted package; 3 leads</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC817K-40H</td>
<td>Plastics surface-mounted package; 3 leads</td>
<td></td>
</tr>
</tbody>
</table>

4 Marking

Table 5. Marking

<table>
<thead>
<tr>
<th>Type number</th>
<th>Marking code</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC817K-16H</td>
<td>%HD</td>
</tr>
<tr>
<td>BC817K-25H</td>
<td>%HE</td>
</tr>
<tr>
<td>BC817K-40H</td>
<td>%HF</td>
</tr>
</tbody>
</table>

[1] % = placeholder for manufacturing site code
5 Limiting values

Table 6. Limiting values
*In accordance with the Absolute Maximum Rating System (IEC 60134).*

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Conditions</th>
<th>Min</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>V_{CBO}</td>
<td>collector-base voltage</td>
<td>open emitter</td>
<td>-</td>
<td>50</td>
<td>V</td>
</tr>
<tr>
<td>V_{CEO}</td>
<td>collector-emitter voltage</td>
<td>open base</td>
<td>-</td>
<td>45</td>
<td>V</td>
</tr>
<tr>
<td>V_{EBO}</td>
<td>emitter-base voltage</td>
<td>open collector</td>
<td>-</td>
<td>7</td>
<td>V</td>
</tr>
<tr>
<td>I_{C}</td>
<td>collector current</td>
<td></td>
<td>-</td>
<td>500</td>
<td>mA</td>
</tr>
<tr>
<td>I_{CM}</td>
<td>peak collector current</td>
<td>single pulse; t_p ≤ 1 ms</td>
<td>-</td>
<td>1</td>
<td>A</td>
</tr>
<tr>
<td>I_{BM}</td>
<td>peak base current</td>
<td>single pulse; t_p ≤ 1 ms</td>
<td>-</td>
<td>200</td>
<td>mA</td>
</tr>
<tr>
<td>P_{tot}</td>
<td>total power dissipation</td>
<td>T_{amb} ≤ 25 °C</td>
<td>[1]</td>
<td>425</td>
<td>mW</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[2]</td>
<td>700</td>
<td>mW</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[3]</td>
<td>700</td>
<td>mW</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[4]</td>
<td>950</td>
<td>mW</td>
</tr>
<tr>
<td>T_j</td>
<td>junction temperature</td>
<td></td>
<td>-</td>
<td>175</td>
<td>°C</td>
</tr>
<tr>
<td>T_{amb}</td>
<td>ambient temperature</td>
<td></td>
<td>-55</td>
<td>175</td>
<td>°C</td>
</tr>
<tr>
<td>T_{stg}</td>
<td>storage temperature</td>
<td></td>
<td>-65</td>
<td>175</td>
<td>°C</td>
</tr>
</tbody>
</table>

[1] Device mounted on an FR4 Printed-Circuit-Board (PCB); single-sided copper; tin-plated and standard footprint.
[2] Device mounted on an FR4 Printed-Circuit-Board (PCB); single-sided copper; tin-plated; mounting pad for collector 1 cm².
[3] Device mounted on an FR4 Printed-Circuit-Board (PCB); 4-layer copper; tin-plated and standard footprint.
[4] Device mounted on an FR4 Printed-Circuit-Board (PCB); 4-layer copper; tin-plated; mounting pad for collector 1 cm².

Figure 1. Power derating curves

- (1) FR4 PCB, 4-layer copper; 1 cm²
- (2) FR4 PCB, single-sided copper; 1 cm²
- (3) FR4 PCB, 4-layer copper; standard footprint
- (4) FR4 PCB, single-sided copper; standard footprint
FR4 PCB, single-sided copper; standard footprint; single pulse

$T_{\text{amb}} = 25 \, ^\circ\text{C}$

**Figure 2.** Safe operating area; junction to ambient; continuous and peak collector currents as a function of collector-emitter voltage
6 Thermal characteristics

Table 7. Thermal characteristics

<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>$R_{th(j-a)}$</td>
<td>thermal resistance from junction to ambient</td>
<td>in free air</td>
<td>[1]</td>
<td>-</td>
<td>353</td>
<td>K/W</td>
</tr>
<tr>
<td>$R_{th(j-sp)}$</td>
<td>thermal resistance from junction to solder point</td>
<td></td>
<td>[3]</td>
<td>-</td>
<td>215</td>
<td>K/W</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[4]</td>
<td>-</td>
<td>158</td>
<td>K/W</td>
</tr>
</tbody>
</table>

[2] Device mounted on an FR4 PCB; single-sided copper; tin-plated; mounting pad for collector 1 cm².
[3] Device mounted on an FR4 PCB; 4-layer copper; tin-plated and standard footprint.
[4] Device mounted on an FR4 PCB; 4-layer copper; tin-plated; mounting pad for collector 1 cm².

Figure 3. Transient thermal impedance from junction to ambient as a function of pulse duration; typical values.

Figure 4. Transient thermal impedance from junction to ambient as a function of pulse duration; typical values.
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FR4 PCB; 4-layer copper; tin plated and standard footprint

Figure 5. Transient thermal impedance from junction to ambient as a function of pulse duration; typical values

FR4 PCB; 4-layer copper; tin plated; mounting pad for collector 1 cm$^2$

Figure 6. Transient thermal impedance from junction to ambient as a function of pulse duration; typical values
## 7 Characteristics

### Table 8. Characteristics

*\( T_{\text{amb}} = 25 \, ^\circ\text{C} \) unless otherwise specified.

<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>( V_{(BR)CBO} )</td>
<td>collector-base breakdown voltage</td>
<td>( I_C = 100 , \mu\text{A}; , I_E = 0 , \text{A} )</td>
<td>50</td>
<td>-</td>
<td>-</td>
<td>V</td>
</tr>
<tr>
<td>( V_{(BR)CEO} )</td>
<td>collector-emitter breakdown voltage</td>
<td>( I_C = 10 , \text{mA}; , I_E = 0 , \text{A} )</td>
<td>45</td>
<td>-</td>
<td>-</td>
<td>V</td>
</tr>
<tr>
<td>( V_{(BR)EBO} )</td>
<td>emitter-base breakdown voltage</td>
<td>( I_E = 100 , \mu\text{A}; , I_C = 0 , \text{A} )</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>V</td>
</tr>
<tr>
<td>( I_{\text{CBO}} )</td>
<td>collector-base cut-off current</td>
<td>( V_{CB} = 25 , \text{V}; , I_E = 0 , \text{A} )</td>
<td>-</td>
<td>-</td>
<td>100</td>
<td>nA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( V_{CB} = 25 , \text{V}; , I_E = 0 , \text{A}; , T_j = 150 , ^\circ\text{C} )</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>µA</td>
</tr>
<tr>
<td>( I_{\text{EBO}} )</td>
<td>emitter-base cut-off current</td>
<td>( V_{EB} = 5 , \text{V}; , I_C = 0 , \text{A} )</td>
<td>-</td>
<td>-</td>
<td>100</td>
<td>nA</td>
</tr>
<tr>
<td>( h_{FE} )</td>
<td>DC current gain</td>
<td></td>
<td>100</td>
<td>-</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC817K-16H</td>
<td>( V_{CE} = 1 , \text{V}; , I_C = 100 , \text{mA} )</td>
<td>[1]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC817K-25H</td>
<td>( V_{CE} = 1 , \text{V}; , I_C = 100 , \text{mA} )</td>
<td>[1]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC817K-40H</td>
<td>( V_{CE} = 1 , \text{V}; , I_C = 100 , \text{mA} )</td>
<td>[1]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC817K-16H, -25H, -40H</td>
<td>( V_{CE} = 1 , \text{V}; , I_C = 500 , \text{mA} )</td>
<td>[1]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( V_{\text{CESat}} )</td>
<td>collector-emitter saturation voltage</td>
<td>( I_C = 500 , \text{mA}; , I_B = 50 , \text{mA} )</td>
<td>[1]</td>
<td></td>
<td></td>
<td>700</td>
</tr>
<tr>
<td>( V_{\text{BEsat}} )</td>
<td>base-emitter saturation voltage</td>
<td>( I_C = 500 , \text{mA}; , I_B = 50 , \text{mA} )</td>
<td>[1]</td>
<td></td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>( V_{\text{BE}} )</td>
<td>base-emitter voltage</td>
<td>( V_{CE} = 1 , \text{V}; , I_C = 500 , \text{mA} )</td>
<td>[1]</td>
<td></td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>( f_T )</td>
<td>transition frequency</td>
<td>( V_{CE} = 5 , \text{V}; , I_C = 10 , \text{mA}; , f = 100 , \text{MHz} )</td>
<td></td>
<td>100</td>
<td>-</td>
<td>MHz</td>
</tr>
<tr>
<td>( C_c )</td>
<td>collector capacitance</td>
<td>( V_{CB} = 10 , \text{V}; , I_E = I_C = 0 , \text{A}; , f = 1 , \text{MHz} )</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>pF</td>
</tr>
<tr>
<td>( C_e )</td>
<td>emitter capacitance</td>
<td>( V_{EB} = 0.5 , \text{V}; , I_C = I_E = 0 , \text{A}; , f = 1 , \text{MHz} )</td>
<td>-</td>
<td>44</td>
<td>-</td>
<td>pF</td>
</tr>
<tr>
<td></td>
<td>BC817K-16H</td>
<td></td>
<td></td>
<td>39</td>
<td>-</td>
<td>pF</td>
</tr>
<tr>
<td></td>
<td>BC817K-25H</td>
<td></td>
<td></td>
<td>39</td>
<td>-</td>
<td>pF</td>
</tr>
<tr>
<td></td>
<td>BC817K-40H</td>
<td></td>
<td></td>
<td>39</td>
<td>-</td>
<td>pF</td>
</tr>
</tbody>
</table>

[1] pulsed; \( t_p \leq 300 \, \mu\text{s}; \, \delta \leq 0.02 \)
V\(_{\text{CE}}\) = 1 V
(1) \(T_{\text{amb}}\) = 175 °C
(2) \(T_{\text{amb}}\) = 150 °C
(3) \(T_{\text{amb}}\) = 125 °C
(4) \(T_{\text{amb}}\) = 100 °C
(5) \(T_{\text{amb}}\) = 85 °C
(6) \(T_{\text{amb}}\) = 25 °C
(7) \(T_{\text{amb}}\) = -40 °C
(8) \(T_{\text{amb}}\) = -55 °C

Figure 7. BC817K-16H: DC current gain as a function of collector current; typical values

\[ h_{\text{FE}} \] vs. \( I_{\text{C}} \) (mA)

\( T_{\text{amb}} = 25 ^\circ \text{C} \)
(1) \( V_{\text{CE}} = 5 \text{ V} \)
(2) \( V_{\text{CE}} = 2 \text{ V} \)
(3) \( V_{\text{CE}} = 1 \text{ V} \)

Figure 8. BC817K-16H: DC current gain as a function of collector current; typical values

\[ h_{\text{FE}} \] vs. \( I_{\text{C}} \) (mA)
V_{CE} = 1 V
(1) T_{\text{amb}} = -55 \, ^{\circ}\text{C}
(2) T_{\text{amb}} = -40\, ^{\circ}\text{C}
(3) T_{\text{amb}} = 25 \, ^{\circ}\text{C}
(4) T_{\text{amb}} = 85 \, ^{\circ}\text{C}
(5) T_{\text{amb}} = 100 \, ^{\circ}\text{C}
(6) T_{\text{amb}} = 125 \, ^{\circ}\text{C}
(7) T_{\text{amb}} = 150 \, ^{\circ}\text{C}
(8) T_{\text{amb}} = 175 \, ^{\circ}\text{C}

Figure 9. BC817K-16H: Base-emitter voltage as a function of collector current; typical values

T_{\text{amb}} = 25 \, ^{\circ}\text{C}
(1) V_{CE} = 1 V
(2) V_{CE} = 2 V
(3) V_{CE} = 5 V

Figure 10. BC817K-16H: Base-emitter voltage as a function of collector current; typical values
**Figure 11. BC817K-16H: Base-emitter saturation voltage as a function of collector current; typical values**

- $I_{C}/I_{B} = 10$
- $T_{\text{amb}} = -55 \, ^\circ \text{C}$
- $T_{\text{amb}} = -40 \, ^\circ \text{C}$
- $T_{\text{amb}} = 25 \, ^\circ \text{C}$
- $T_{\text{amb}} = 85 \, ^\circ \text{C}$
- $T_{\text{amb}} = 100 \, ^\circ \text{C}$
- $T_{\text{amb}} = 125 \, ^\circ \text{C}$
- $T_{\text{amb}} = 150 \, ^\circ \text{C}$
- $T_{\text{amb}} = 175 \, ^\circ \text{C}$

**Figure 12. BC817K-16H: Base-emitter saturation voltage as a function of collector current; typical values**

- $I_{C}/I_{B} = 10$
- $I_{C}/I_{B} = 20$
- $I_{C}/I_{B} = 50$
- $I_{C}/I_{B} = 100$

**Figure 13. BC817K-16H: Collector-emitter saturation voltage as a function of collector current; typical values**

- $I_{C}/I_{B} = 10$
- $T_{\text{amb}} = 175 \, ^\circ \text{C}$
- $T_{\text{amb}} = 85 \, ^\circ \text{C}$
- $T_{\text{amb}} = 25 \, ^\circ \text{C}$
- $T_{\text{amb}} = 40 \, ^\circ \text{C}$

**Figure 14. BC817K-16H: Collector-emitter saturation voltage as a function of collector current; typical values**

- $I_{C}/I_{B} = 100$
- $I_{C}/I_{B} = 50$
- $I_{C}/I_{B} = 20$
- $I_{C}/I_{B} = 10$
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45 V, 500 mA NPN general-purpose transistors

Figure 15. BC817K-16H: Collector current as a function of collector-emitter voltage; typical values

Figure 16. BC817K-16H: Collector capacitance as a function of collector-base voltage; typical values

Figure 17. BC817K-16H: Emitter capacitance as a function of emitter-base voltage; typical values

Figure 18. BC817K-16H: Transition frequency as a function of collector current voltage; typical values
V_{CE} = 1 V
(1) T_{amb} = 175 °C
(2) T_{amb} = 150 °C
(3) T_{amb} = 125 °C
(4) T_{amb} = 100 °C
(5) T_{amb} = 85 °C
(6) T_{amb} = 25 °C
(7) T_{amb} = -40 °C
(8) T_{amb} = -55 °C

Figure 19. BC817K-25H: DC current gain as a function of collector current; typical values

T_{amb} = 25 °C
(1) V_{CE} = 5 V
(2) V_{CE} = 2 V
(3) V_{CE} = 1 V

Figure 20. BC817K-25H: DC current gain as a function of collector current; typical values
V_{CE} = 1 V
(1) T_{amb} = -55 °C
(2) T_{amb} = -40 °C
(3) T_{amb} = 25 °C
(4) T_{amb} = 85 °C
(5) T_{amb} = 100 °C
(6) T_{amb} = 125 °C
(7) T_{amb} = 150 °C
(8) T_{amb} = 175 °C

T_{amb} = 25 °C
(1) V_{CE} = 1 V
(2) V_{CE} = 2 V
(3) V_{CE} = 5 V

**Figure 21.** BC817K-25H: Base-emitter voltage as a function of collector current; typical values

**Figure 22.** BC817K-25H: Base-emitter voltage as a function of collector current; typical values
Figure 23. BC817K-25H: Base-emitter saturation voltage as a function of collector current; typical values

- $V_{BE_{Sat}}$ (V)

- $I_C$ (mA)

- $I_C/I_B = 10$
  1. $T_{amb} = -55 \, ^\circ C$
  2. $T_{amb} = -40 \, ^\circ C$
  3. $T_{amb} = 25 \, ^\circ C$
  4. $T_{amb} = 85 \, ^\circ C$
  5. $T_{amb} = 100 \, ^\circ C$
  6. $T_{amb} = 125 \, ^\circ C$
  7. $T_{amb} = 150 \, ^\circ C$
  8. $T_{amb} = 175 \, ^\circ C$

Figure 24. BC817K-25H: Base-emitter saturation voltage as a function of collector current; typical values

- $V_{BE_{Sat}}$ (V)

- $I_C$ (mA)

- $T_{amb} = 25 \, ^\circ C$
  1. $I_C/I_B = 10$
  2. $I_C/I_B = 20$
  3. $I_C/I_B = 50$
  4. $I_C/I_B = 100$

Figure 25. BC817K-25H: Collector-emitter saturation voltage as a function of collector current; typical values

- $V_{CE_{Sat}}$ (V)

- $I_C$ (mA)

- $I_C/I_B = 10$
  1. $T_{amb} = 175 \, ^\circ C$
  2. $T_{amb} = 85 \, ^\circ C$
  3. $T_{amb} = 25 \, ^\circ C$
  4. $T_{amb} = -40 \, ^\circ C$

Figure 26. BC817K-25H: Collector-emitter saturation voltage as a function of collector current; typical values

- $V_{CE_{Sat}}$ (V)

- $I_C$ (mA)

- $T_{amb} = 25 \, ^\circ C$
  1. $I_C/I_B = 100$
  2. $I_C/I_B = 50$
  3. $I_C/I_B = 20$
  4. $I_C/I_B = 10$
**BC817KH series**

45 V, 500 mA NPN general-purpose transistors

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**Figure 27.** BC817K-25H: Collector current as a function of collector-emitter voltage; typical values

**Figure 28.** BC817K-25H: Collector capacitance as a function of collector-base voltage; typical values

**Figure 29.** BC817K-25H: Emitter capacitance as a function of emitter-base voltage; typical values

**Figure 30.** BC817K-25H: Transition frequency as a function of collector current voltage; typical values
Figure 31. BC817K-40H: DC current gain as a function of collector current; typical values

V_{CE} = 1 V
(1) T_{amb} = 175 °C
(2) T_{amb} = 150 °C
(3) T_{amb} = 125 °C
(4) T_{amb} = 100 °C
(5) T_{amb} = 85 °C
(6) T_{amb} = 25 °C
(7) T_{amb} = -40 °C
(8) T_{amb} = -55 °C

Figure 32. BC817K-40H: DC current gain as a function of collector current; typical values

T_{amb} = 25 °C
(1) V_{CE} = 5 V
(2) V_{CE} = 2 V
(3) V_{CE} = 1 V
V\text{CE} = 1 \text{ V}
(1) T\text{amb} = -55 \degree \text{C}
(2) T\text{amb} = -40\degree \text{C}
(3) T\text{amb} = 25 \degree \text{C}
(4) T\text{amb} = 85 \degree \text{C}
(5) T\text{amb} = 100 \degree \text{C}
(6) T\text{amb} = 125 \degree \text{C}
(7) T\text{amb} = 150 \degree \text{C}
(8) T\text{amb} = 175 \degree \text{C}

\text{Figure 33. BC817K-40H: Base-emitter voltage as a function of collector current; typical values}

T\text{amb} = 25 \degree \text{C}
(1) V\text{CE} = 1 \text{ V}
(2) V\text{CE} = 2 \text{ V}
(3) V\text{CE} = 5 \text{ V}

\text{Figure 34. BC817K-40H: Base-emitter voltage as a function of collector current; typical values}
Figure 35. BC817K-40H: Base-emitter saturation voltage as a function of collector current; typical values

Figure 36. BC817K-40H: Collector-emitter saturation voltage as a function of collector current; typical values

Figure 37. BC817K-40H: Collector-emitter saturation voltage as a function of collector current; typical values

Figure 38. BC817K-40H: Collector-emitter saturation voltage as a function of collector current; typical values
8 Test information

8.1 Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 - Stress test qualification for discrete semiconductors, and is suitable for use in automotive applications.
9 Package outline

Table 9. Package outline

![Diagram of package outline](image)

Figure 43. Package outline SOT23 (TO-236)

10 Soldering

Table 10. Soldering

![Diagram of soldering](image)

Figure 44. Reflow soldering footprint for SOT23 (TO-236AB)
Figure 45. Wave soldering footprint for SOT23 (TO-236AB)
## 11 Revision history

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12.1 Data sheet status

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[1] Please consult the most recently issued document before initiating or completing a design.
[2] The term ‘short data sheet’ is explained in section “Definitions”.
[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL http://www.nexperia.com.

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