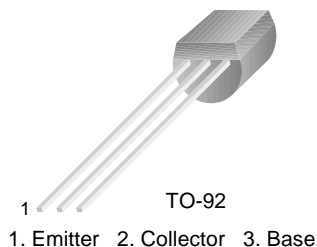


BC635/637/639

Switching and Amplifier Applications

- Complement to BC636/638/640



NPN Epitaxial Silicon Transistor

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

| Symbol | Parameter | Value | Units |
|------------------|--|-----------|------------------|
| V_{CER} | Collector-Emitter Voltage at $R_{\text{BE}}=1\text{K}\Omega$ | | |
| | : BC635 | 45 | V |
| | : BC637 | 60 | V |
| | : BC639 | 100 | V |
| V_{CES} | Collector-Emitter Voltage | | |
| | : BC635 | 45 | V |
| | : BC637 | 60 | V |
| | : BC639 | 100 | V |
| V_{CEO} | Collector-Emitter Voltage | | |
| | : BC635 | 45 | V |
| | : BC637 | 60 | V |
| | : BC639 | 80 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_{C} | Collector Current | 1 | A |
| I_{CP} | Peak Collector Current | 1.5 | A |
| I_{B} | Base Current | 100 | mA |
| P_{C} | Collector Power Dissipation | 1 | W |
| T_{J} | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | -65 ~ 150 | $^\circ\text{C}$ |

• PW=5ms, Duty Cycle=10%

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

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|----------------------|--------------------------------------|---|------|------|------|---------------|
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_{\text{C}}=10\text{mA}, I_{\text{B}}=0$ | | | | |
| | : BC635 | | 45 | | | V |
| | : BC637 | | 60 | | | V |
| | : BC639 | | 80 | | | V |
| I_{CBO} | Collector Cut-off Current | $V_{\text{CB}}=30\text{V}, I_{\text{E}}=0$ | | | 0.1 | μA |
| I_{EBO} | Emitter Cut-off Current | $V_{\text{EB}}=5\text{V}, I_{\text{C}}=0$ | | | 0.1 | μA |
| h_{FE1} | DC Current Gain | : All | 25 | | | |
| h_{FE2} | | : BC635 | 40 | | 250 | |
| | | : BC637/BC639 | 40 | | 160 | |
| h_{FE3} | : All | $V_{\text{CE}}=2\text{V}, I_{\text{C}}=500\text{mA}$ | 25 | | | |
| $V_{\text{CE(sat)}}$ | Collector-Emitter Saturation Voltage | $I_{\text{C}}=500\text{mA}, I_{\text{B}}=50\text{mA}$ | | | 0.5 | V |
| $V_{\text{BE(on)}}$ | Base-Emitter On Voltage | $V_{\text{CE}}=2\text{V}, I_{\text{C}}=500\text{mA}$ | | | 1 | V |
| f_{T} | Current Gain Bandwidth Product | $V_{\text{CE}}=5\text{V}, I_{\text{C}}=10\text{mA}, f=50\text{MHz}$ | | 100 | | MHz |

Typical Characteristics

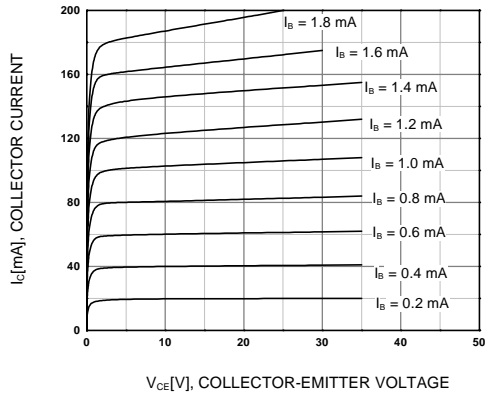


Figure 1. Static Characteristic

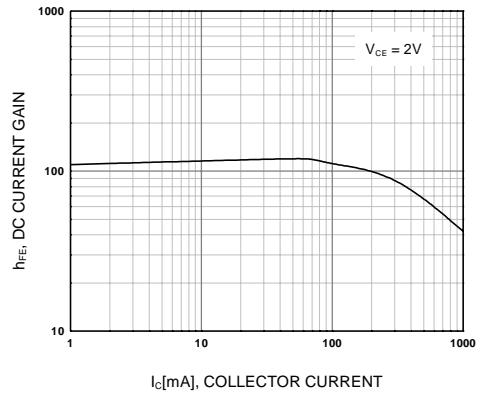


Figure 2. DC current Gain

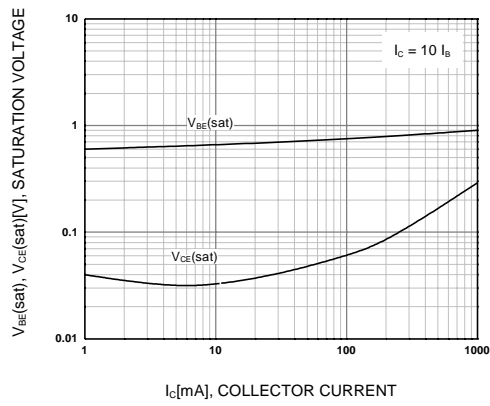


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

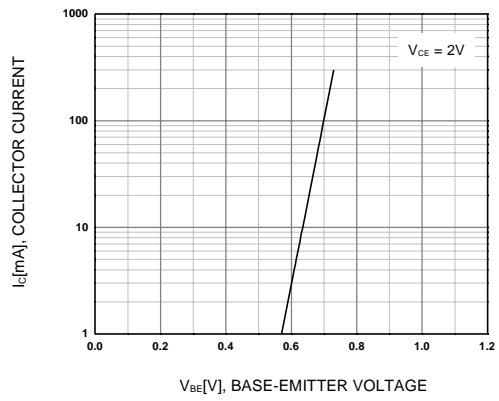


Figure 4. Base-Emitter On Voltage

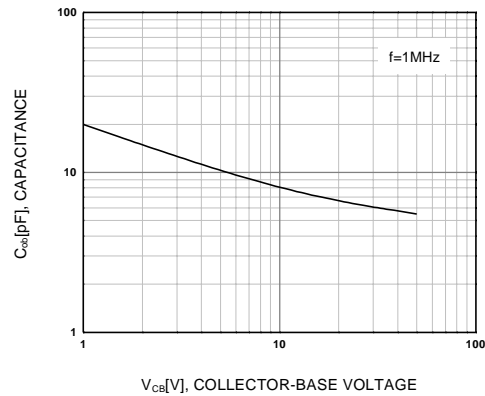


Figure 5. Collector Output Capacitance

Package Dimensions

BC635/637/639

TO-92



Dimensions in Millimeters

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