



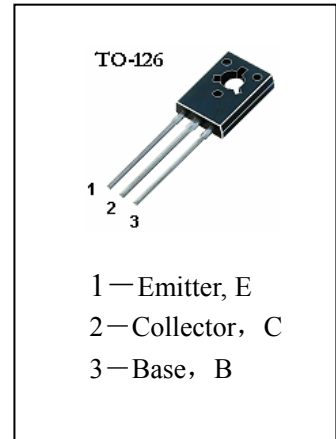
# HSBD233

## APPLICATIONS

Medium Power Linear switching Applications

## ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)

- T<sub>stg</sub>—Storage Temperature..... -55~150°C
- T<sub>j</sub>—Junction Temperature..... 150°C
- P<sub>C</sub>—Collector Dissipation (T<sub>c</sub>=25°C) ..... 25W
- V<sub>CBO</sub>—Collector-Base Voltage..... 45V
- V<sub>CEO</sub>—Collector-Emitter Voltage..... 45V
- V<sub>CER</sub>—Collector-Emitter Voltage..... 45V
- V<sub>EBO</sub>—Emitter-Base Voltage..... 5V
- I<sub>C</sub>—Collector Current (Pulse) ..... 6A
- I<sub>C</sub>—Collector Current (DC) ..... 2A



## ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C)

| Symbol                | Characteristics                       | Min | Typ | Max | Unit | Test Conditions                              |
|-----------------------|---------------------------------------|-----|-----|-----|------|--|
| ICBO                  | Collector Cut-off Current             |     |     | 100 | μ A  | V <sub>CB</sub> =45V, I <sub>E</sub> =0      |
| IEBO                  | Emitter Cut-off Current               |     |     | 1   | mA   | V <sub>EB</sub> =5V, I <sub>C</sub> =0       |
| *H <sub>FE</sub> (1)  | DC Current Gain                       | 40  |     |     |      | V <sub>CE</sub> =2V, I <sub>C</sub> =150mA   |
| *H <sub>FE</sub> (2)  | DC Current Gain                       | 25  |     |     |      | V <sub>CE</sub> =2V, I <sub>C</sub> =1A      |
| *V <sub>CE(sat)</sub> | Collector- Emitter Saturation Voltage |     |     | 0.6 | V    | I <sub>C</sub> =1A, I <sub>B</sub> =0.1A     |
| *V <sub>BE(on)</sub>  | Base-Emitter On Voltage               |     |     | 1.3 | V    | V <sub>CE</sub> =2V, I <sub>C</sub> =1A      |
| V <sub>CEO(sus)</sub> | Collector-Emitter Sustaining Voltage  | 45  |     |     | V    | I <sub>C</sub> =100mA, I <sub>B</sub> =0     |
| f <sub>t</sub>        | Current Gain-Bandwidth Product        | 3   |     |     | MHZ  | V <sub>CE</sub> =10V, I <sub>C</sub> =250mA, |

\* Pulse Test:PW=300 μ S, Duty Cycle=1.5% Pulsed