

**isc Silicon PNP Power Transistor**

**2SB1203**

**DESCRIPTION**

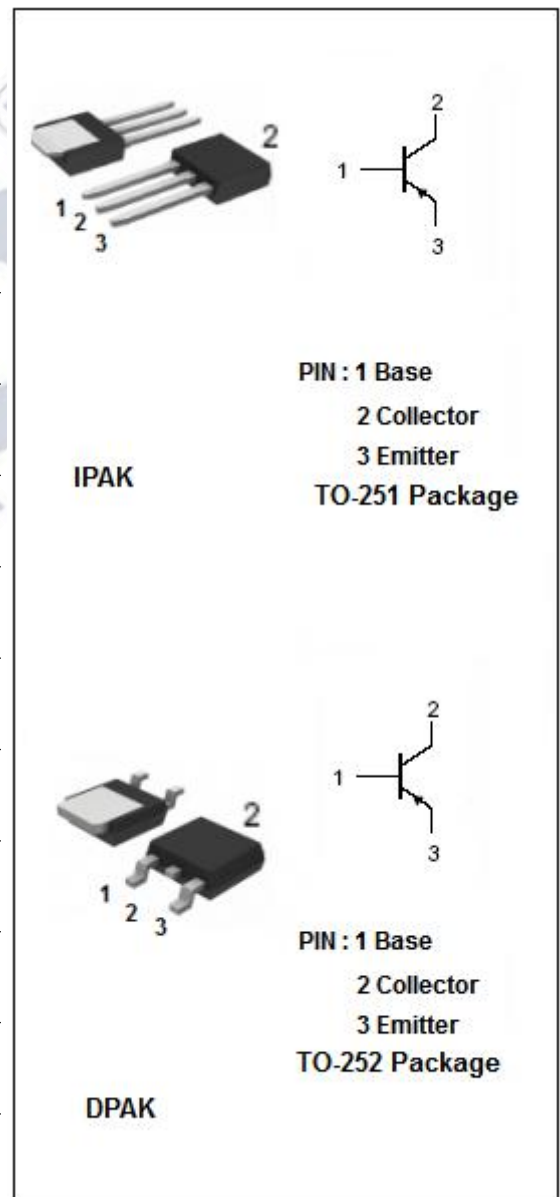
- High current and high  $f_T$
- Small and slim package making it easy to make 2SB1203/2SD1803-used set smaller
- Low collector-to-emitter saturation voltage
- Excellent linearity of  $h_{FE}$
- Fast switching speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- relay drivers, High speed inverters, converters and other general high-current switching applications

**ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )**

| SYMBOL    | PARAMETER  | VALUE   | UNIT             |
|-----------|--|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                               | -60     | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                            | -50     | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                 | -6      | V                |
| $I_C$     | Collector Current-Continuous                         | -5      | A                |
| $I_{CP}$  | Collector Current-Pulse                              | -8      | A                |
| $P_C$     | Collector Power Dissipation @ $T_C=25^\circ\text{C}$ | 20      | W                |
|           | Collector Power Dissipation @ $T_a=25^\circ\text{C}$ | 1.0     | W                |
| $T_J$     | Junction Temperature                                 | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                            | -55~150 | $^\circ\text{C}$ |



**isc Silicon PNP Power Transistor****2SB1203****ELECTRICAL CHARACTERISTICS** $T_c=25^\circ\text{C}$  unless otherwise specified

| SYMBOL        | PARAMETER                            | CONDITIONS                           | MIN | TYP. | MAX   | UNIT    |
|---------------|--------------------------------------|--------------------------------------|-----|------|-------|---------|
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -3A; I_B = -150mA$            |     |      | -0.55 | V       |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C = -3A; I_B = -150mA$            |     |      | -1.3  | V       |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage     | $I_C = -10\mu A; I_B = 0$            | -60 |      |       | V       |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage  | $I_C = -1mA; I_B = 0$                | -50 |      |       | V       |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage       | $I_E = -10\mu A; I_C = 0$            | -6  |      |       | V       |
| $I_{CBO}$     | Collector Cutoff Current             | $V_{CB} = -40V; I_E = 0$             |     |      | -1    | $\mu A$ |
| $I_{EBO}$     | Emitter Cutoff Current               | $V_{EB} = -4V; I_C = 0$              |     |      | -1    | $\mu A$ |
| $h_{FE1}$     | DC Current Gain                      | $I_C = -0.5A; V_{CE} = -2V$          | 70  |      | 400   |         |
| $h_{FE2}$     | DC Current Gain                      | $I_C = -4A; V_{CE} = -2V$            | 35  |      |       |         |
| $C_{OB}$      | Output Capacitance                   | $I_E = 0; V_{CB} = -10V; f = 1.0MHz$ |     | 60   |       | pF      |
| $f_T$         | Current-Gain—Bandwidth Product       | $I_C = -1A; V_{CE} = -5V$            |     | 130  |       | MHz     |

◆  **$h_{FE1}$  Classifications**

| Q      | R       | S       | T       |
|--------|---------|---------|---------|
| 70-140 | 100-200 | 140-280 | 200-400 |

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Outline Drawing

