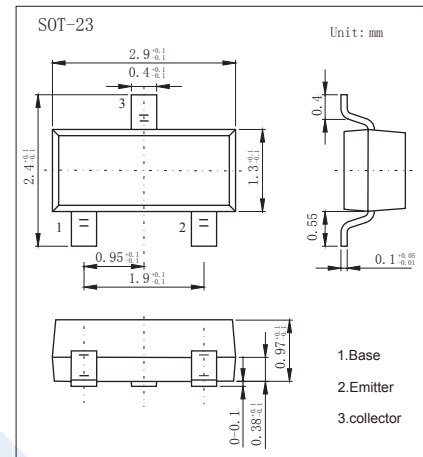


## NPN Transistors

## 2SD2230

## ■ Features

- Collector Current Capability  $I_C=500\text{mA}$
- Collector Emitter Voltage  $V_{CEO}=16\text{V}$

■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

| Parameter                      | Symbol    | Rating     | Unit             |
|--------------------------------|-----------|------------|------------------|
| Collector - Base Voltage       | $V_{CB0}$ | 16         | V                |
| Collector - Emitter Voltage    | $V_{CE0}$ | 16         |                  |
| Emitter - Base Voltage         | $V_{EB0}$ | 5          |                  |
| Collector Current - Continuous | $I_C$     | 500        | mA               |
| Collector Power Dissipation    | $P_C$     | 200        | mW               |
| Junction Temperature           | $T_J$     | 150        | $^\circ\text{C}$ |
| Storage Temperature Range      | $T_{stg}$ | -55 to 150 |                  |

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

| Parameter                            | Symbol        | Test Conditions                           | Min | Typ | Max | Unit          |
|--------------------------------------|---------------|-------------------------------------------|-----|-----|-----|---------------|
| Collector- base breakdown voltage    | $V_{CB0}$     | $I_C = 100\ \mu\text{A}, I_E = 0$         | 16  |     |     | V             |
| Collector- emitter breakdown voltage | $V_{CE0}$     | $I_C = 1\ \text{mA}, I_B = 0$             | 16  |     |     |               |
| Emitter - base breakdown voltage     | $V_{EB0}$     | $I_E = 100\ \mu\text{A}, I_C = 0$         | 5   |     |     |               |
| Collector-base cut-off current       | $I_{CBO}$     | $V_{CB}=16\ \text{V}, I_E = 0$            |     |     | 0.1 | $\mu\text{A}$ |
| Emitter-base cut-off current         | $I_{EBO}$     | $V_{EB}=6\ \text{V}, I_C = 0$             |     |     | 0.1 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=100\text{mA}, I_B=10\text{mA}$       |     |     | 50  | mV            |
|                                      |               | $I_C=500\text{mA}, I_B=20\text{mA}$       |     |     | 200 |               |
| Base - emitter saturation voltage    | $V_{BE(sat)}$ | $I_C=500\text{mA}, I_B=20\text{mA}$       |     |     | 1.2 | V             |
| Base - emitter voltage               | $V_{BE}$      | $V_{CE}=1\text{V}, I_C=10\text{mA}$       | 550 |     | 700 | mV            |
| DC current gain                      | $h_{FE}$      | $V_{CE}=1\text{V}, I_C=100\text{mA}$      | 200 |     |     |               |
|                                      |               | $V_{CE}=1\text{V}, I_C=500\text{mA}$      | 200 |     |     |               |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ |     |     | 15  | pF            |
| Transition frequency                 | $f_T$         | $V_{CE}=1\text{V}, I_E=-100\text{mA}$     | 50  |     |     | MHz           |

Note. Pulse test  $PW \leq 350\ \mu\text{s}$ , duty cycle  $\leq 2\%$

## ■ Marking

|         |     |
|---------|-----|
| Marking | D46 |
|---------|-----|

## NPN Transistors

## 2SD2230

## ■ Typical Characteristics

