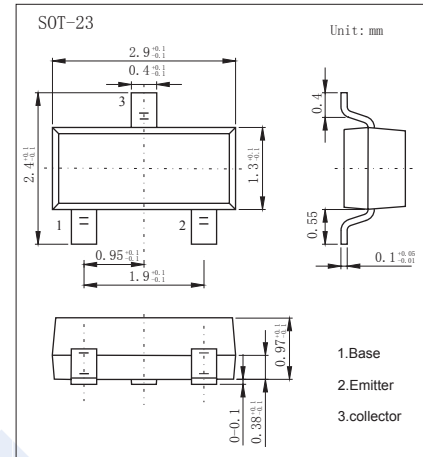


## NPN Transistors

### 2SD2230

#### ■ Features

- Collector Current Capability  $I_C=500\text{mA}$
- Collector Emitter Voltage  $V_{CE0}=16\text{V}$



#### ■ 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
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# NPN Transistors

## 2SD2230

### Typical Characteristics

