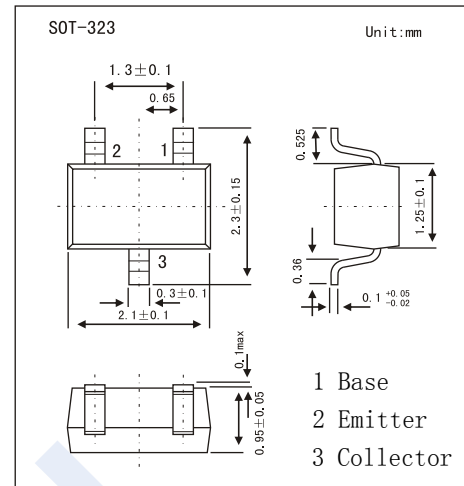


## NPN Transistors

### 2SD1820A

#### ■ Features

- Low Collector-to-Emitter Saturation Voltage
- Complementary to 2SB1219A



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CBO}$	60	V
Collector - Emitter Voltage	$V_{CEO}$	50	
Emitter - Base Voltage	$V_{EBO}$	5	
Collector Current - Continuous	$I_C$	0.5	A
Collector Current - Pulse	$I_{CP}$	1	
Collector Power Dissipation	$P_C$	150	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	$V_{CBO}$	$I_C = 100 \mu\text{A}, I_E = 0$	60			V
Collector- emitter breakdown voltage	$V_{CEO}$	$I_C = 2 \text{ mA}, I_B = 0$	50			
Emitter - base breakdown voltage	$V_{EBO}$	$I_E = 100 \mu\text{A}, I_C = 0$	5			
Collector-base cut-off current	$I_{CBO}$	$V_{CB} = 50 \text{ V}, I_E = 0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5 \text{ V}, I_C = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 300 \text{ mA}, I_B = 30 \text{ mA}$		0.35	0.6	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 300 \text{ mA}, I_B = 30 \text{ mA}$			1.2	
DC current gain	$h_{FE(1)}$	$V_{CE} = 10 \text{ V}, I_C = 150 \text{ mA}$	85		340	
	$h_{FE(2)}$	$V_{CE} = 10 \text{ V}, I_C = 500 \text{ mA}$	40			
Collector output capacitance	$C_{ob}$	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		6	15	pF
Transition frequency	$f_T$	$V_{CE} = 10 \text{ V}, I_E = -50 \text{ mA}, f = 200 \text{ MHz}$		200		MHz

#### ■ Classification of $h_{FE(1)}$

Type	2SD1820A-Q	2SD1820A-R	2SD1820A-S
Range	85-175	120-240	170-340
Marking	XQ	XR	XS

# NPN Transistors

## 2SD1820A

■ Typical Characteristics

