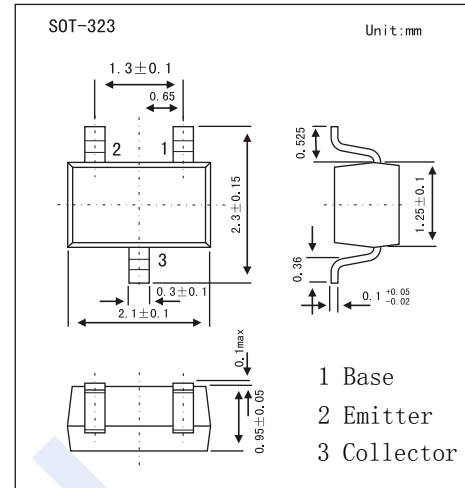


## NPN Transistors

### 2SD1819A

#### ■ Features

- Low Collector-to-Emitter Saturation Voltage
- High forward current transfer ratio  $h_{FE}$ .
- Complementary to 2SB1218A



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	60	V
Collector - Emitter Voltage	$V_{CE0}$	50	
Emitter - Base Voltage	$V_{EB0}$	7	
Collector Current - Continuous	$I_c$	100	mA
Collector Current - Pulse	$I_{CP}$	200	
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	$V_{CB0}$	$I_c = 100 \mu\text{A}$ , $I_E = 0$	60			V
Collector- emitter breakdown voltage	$V_{CE0}$	$I_c = 2 \text{ mA}$ , $I_B = 0$	50			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = 100 \mu\text{A}$ , $I_C = 0$	7			
Collector-base cut-off current	$I_{CBO}$	$V_{CB} = 50 \text{ V}$ , $I_E = 0$			0.1	$\mu\text{A}$
Collector-emitter cut-off current	$I_{CEO}$	$V_{CE} = 40 \text{ V}$ , $I_B = 0$			10	
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 6 \text{ V}$ , $I_C = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c = 100 \text{ mA}$ , $I_B = 10 \text{ mA}$		0.1	0.3	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_c = 100 \text{ mA}$ , $I_B = 10 \text{ mA}$			1.2	
DC current gain	$h_{FE(1)}$	$V_{CE} = 10 \text{ V}$ , $I_c = 2 \text{ mA}$	160		460	
	$h_{FE(2)}$	$V_{CE} = 2 \text{ V}$ , $I_c = 100 \text{ mA}$	90			
Collector output capacitance	$C_{ob}$	$V_{CB} = 10 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$		3.5		pF
Transition frequency	$f_T$	$V_{CE} = 10 \text{ V}$ , $I_E = -2 \text{ mA}$ , $f = 1 \text{ MHz}$		150		MHz

#### ■ Classification of $h_{FE(1)}$

Type	2SD1819A-Q	2SD1819A-R	2SD1819A-S
Range	160-260	210-340	290-460
Marking	ZQ	ZR	ZS

# NPN Transistors

## 2SD1819A

■ Typical Characteristics

