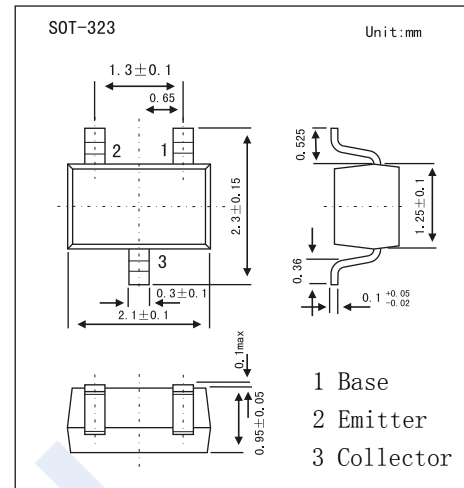


NPN Transistors

2SD1820

■ Features

- Low Collector-to-Emitter Saturation Voltage
- Complementary to 2SB1219



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	30	V
Collector - Emitter Voltage	V_{CE0}	25	
Emitter - Base Voltage	V_{EB0}	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_{CB0}	$I_c = 100 \mu\text{A}$, $I_E = 0$	30			V
Collector- emitter breakdown voltage	V_{CE0}	$I_c = 2 \text{ mA}$, $I_B = 0$	25			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100 \mu\text{A}$, $I_c = 0$	5			
Collector-base cut-off current	I_{CB0}	$V_{CB} = 25 \text{ V}$, $I_E = 0$			0.1	μA
Emitter cut-off current	I_{EB0}	$V_{EB} = 5 \text{ V}$, $I_c = 0$			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	2SD1820 -Q	2SD1820 -R	2SD1820 -S
Range	85-175	120-240	170-340
Marking	WQ	WR	WS

NPN Transistors

2SD1820

■ Typical Characteristics

