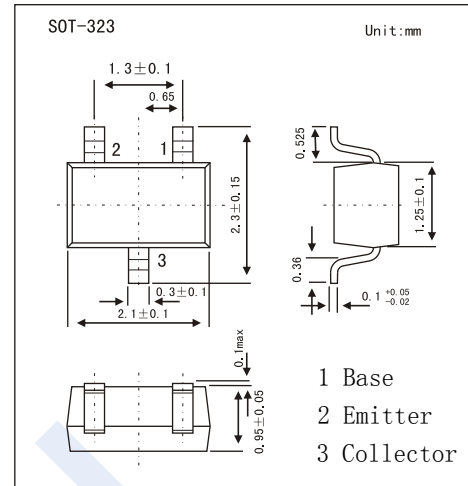


NPN Transistors

2SD1821

■ Features

- Low Collector-to-Emitter Saturation Voltage
- Low noise voltage NV.
- Complementary to 2SB1220

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	150	V
Collector - Emitter Voltage	V_{CE0}	150	
Emitter - Base Voltage	V_{EB0}	5	
Collector Current - Continuous	I_C	50	mA
Collector Current - Pulse	I_{CP}	100	
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}	$I_C = 100 \mu\text{A}$, $I_E = 0$	150			V
Collector- emitter breakdown voltage	V_{CE0}	$I_C = 1 \text{ mA}$, $I_B = 0$	150			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100 \mu\text{A}$, $I_C = 0$	5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 100 \text{ V}$, $I_E = 0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5 \text{ V}$, $I_C = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 30 \text{ mA}$, $I_B = 3 \text{ mA}$			1	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 30 \text{ mA}$, $I_B = 3 \text{ mA}$			1.2	
DC current gain	h_{FE}	$V_{CE} = 5 \text{ V}$, $I_C = 10 \text{ mA}$	130		330	
Noise voltage	NV	$V_{CE} = 10 \text{ V}$, $I_C = 1 \text{ mA}$, $G_v = 80 \text{ dB}$ $R_g = 100 \text{ k}\Omega$, Function = FLAT		150		mV
Collector output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$		2.3		pF
Transition frequency	f_T	$V_{CE} = 10 \text{ V}$, $I_E = -10 \text{ mA}$, $f = 200 \text{ MHz}$		150		MHz

■ Classification of h_{FE}

Type	2SD1821-R	2SD1821-S
Range	130-220	185-330
Marking	PR	PS

NPN Transistors 2SD1821

■ Typical Characteristics

