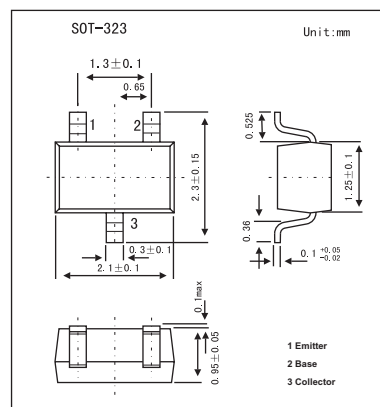


Silicon NPN Epitaxial Planar Type

2SD1820A

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$.

■ 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	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	500	mA
Peak collector current	I_{CP}	1	A
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-base voltage	V_{CBO}	$I_C = 10 \mu\text{A}, I_E = 0$	60			V
Collector-emitter voltage	V_{CEO}	$I_C = 2 \text{ mA}, I_B = 0$	50			V
Emitter-base voltage	V_{EBO}	$I_E = 10 \mu\text{A}, I_C = 0$	5			V
Collector cutoff current	I_{CBO}	$V_{CB} = 20 \text{ V}, I_E = 0$			0.1	μA
Forward current transfer ratio	h_{FE}	$V_{CE} = 10 \text{ V}, I_C = 150 \text{ mA}$	85		340	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 300 \text{ mA}, I_B = 30 \text{ mA}$		0.35	0.6	V
Transition frequency	f_T	$V_{CB} = 10 \text{ V}, I_E = -50 \text{ mA}, f = 200 \text{ MHz}$		200		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		6	15	pF

■ h_{FE} Classification

Marking	XQ	XR	XS	X
Rank	Q	R	S	No-rank
h_{FE}	85~170	120~240	170~340	85~340