

# 2SD1820, 2SD1820A

## Silicon NPN epitaxial planar type

For general amplification

Complementary to 2SB1219 and 2SB1219A

### ■ Features

- Low collector to emitter saturation voltage  $V_{CE(sat)}$
- S-Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

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

Parameter	Symbol	Rating	Unit
Collector to base voltage	2SD1820	30	V
	2SD1820A	60	
Collector to emitter voltage	2SD1820	25	V
	2SD1820A	50	
Emitter to base voltage	$V_{EBO}$	5	V
Peak collector current	$I_{CP}$	1	A
Collector current	$I_C$	500	mA
Collector power dissipation	$P_C$	150	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

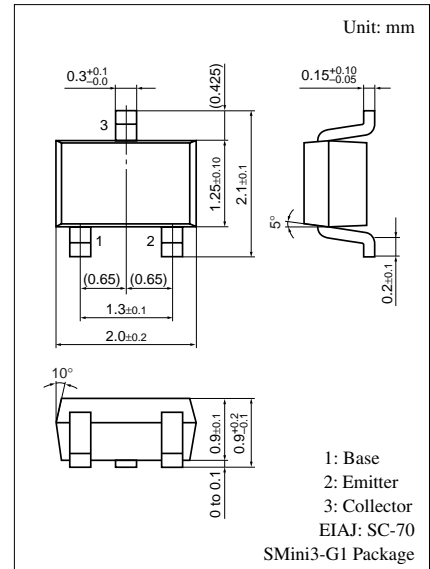
### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 20\text{ V}, I_E = 0$			0.1	$\mu\text{A}$
Collector to base voltage	2SD1820	$I_C = 10\ \mu\text{A}, I_E = 0$	30			V
	2SD1820A		60			
Collector to emitter voltage	2SD1820	$I_C = 2\ \text{mA}, I_B = 0$	25			V
	2SD1820A		50			
Emitter to base voltage	$V_{EBO}$	$I_E = 10\ \mu\text{A}, I_C = 0$	5			V
Forward current transfer ratio *1	$h_{FE1}$ *2	$V_{CE} = 10\ \text{V}, I_C = 150\ \text{mA}$	85	160	340	
	$h_{FE2}$	$V_{CE} = 10\ \text{V}, I_C = 500\ \text{mA}$	40			
Collector to emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = 300\ \text{mA}, I_B = 30\ \text{mA}$		0.35	0.6	V
Transition frequency *1	$f_T$	$V_{CB} = 10\ \text{V}, I_E = -50\ \text{mA}, f = 200\ \text{MHz}$		200		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10\ \text{V}, I_E = 0, f = 1\ \text{MHz}$		6	15	pF

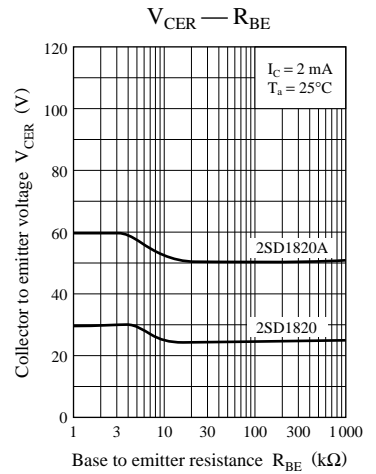
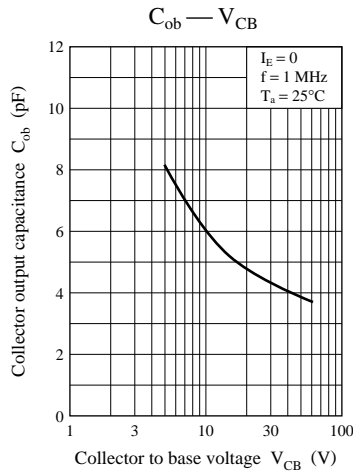
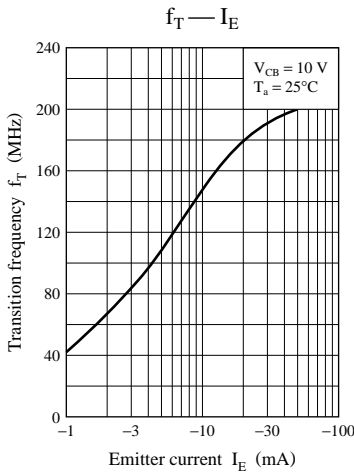
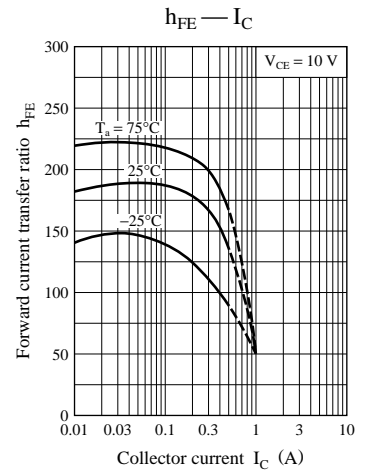
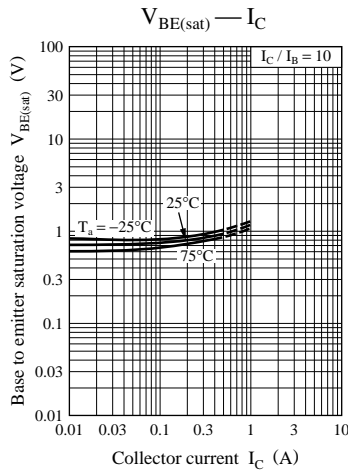
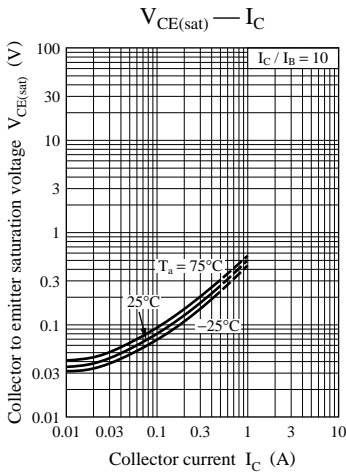
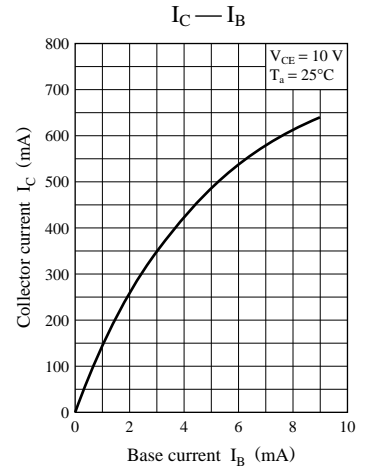
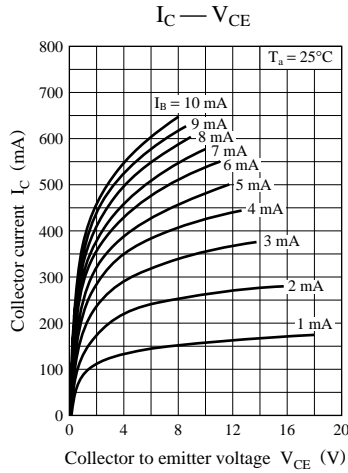
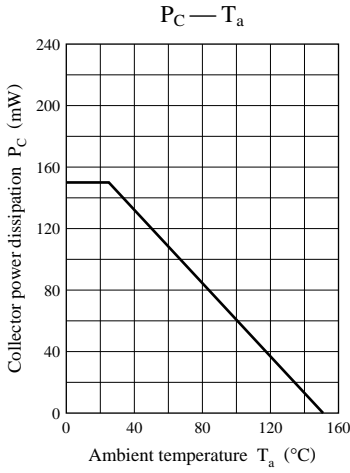
Note) \*1: Pulse measurement

\*2:  $h_{FE}$  Rank classification

Rank	Q	R	S	
$h_{FE1}$	85 to 170	120 to 240	170 to 340	
Marking symbol	2SD1820	WQ	WR	WS
	2SD1820A	XQ	XR	XS



Marking symbol: W (2SD1820)  
X (2SD1820A)



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