

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	$^\circ\text{C}$

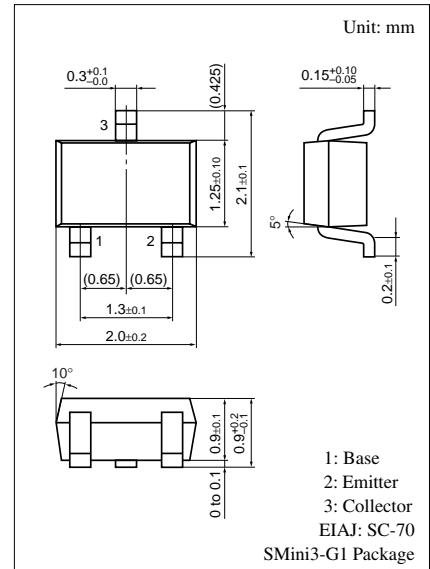
■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 20\text{ V}, I_E = 0$			0.1	μA
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

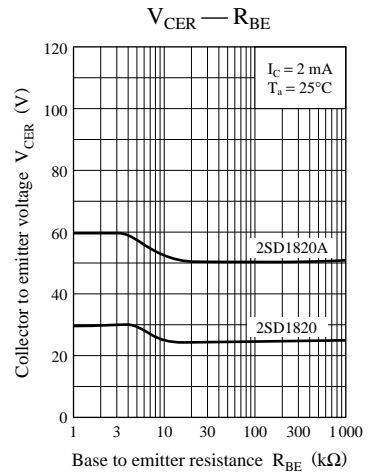
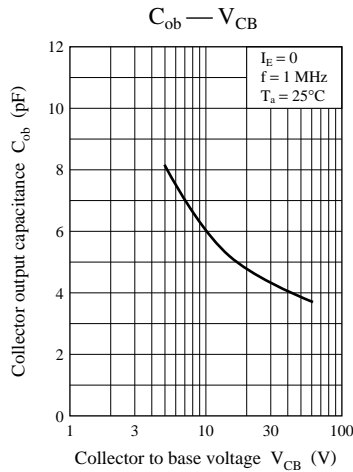
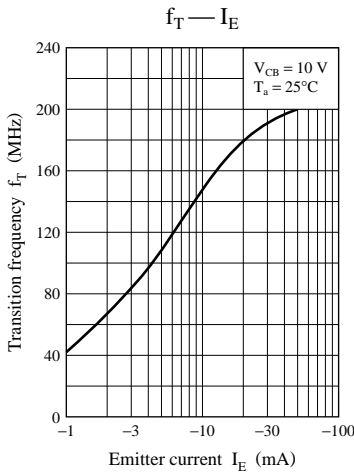
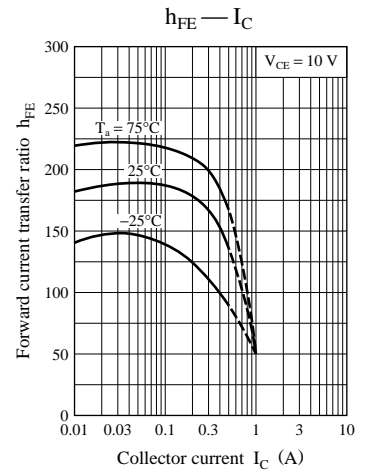
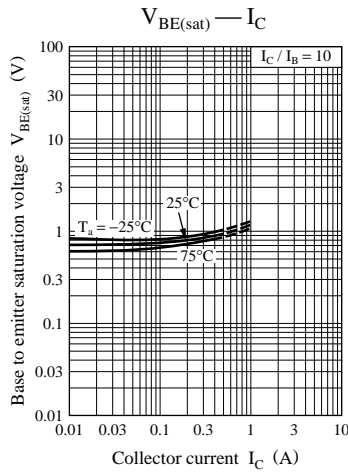
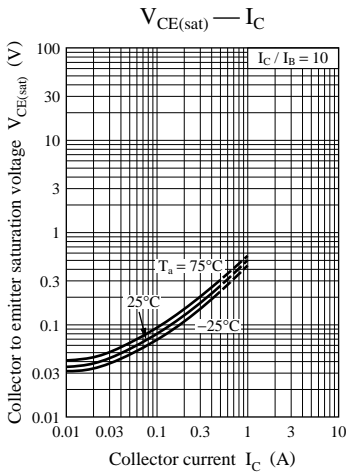
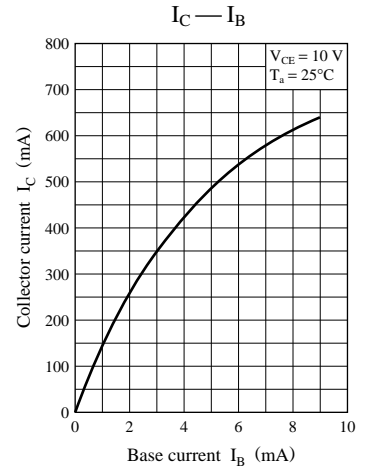
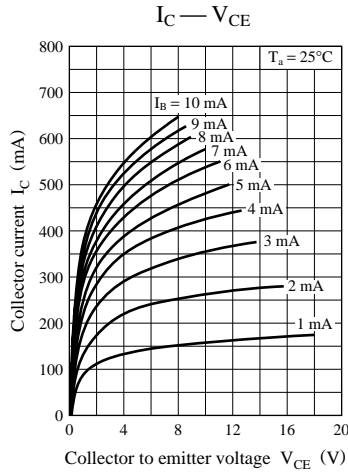
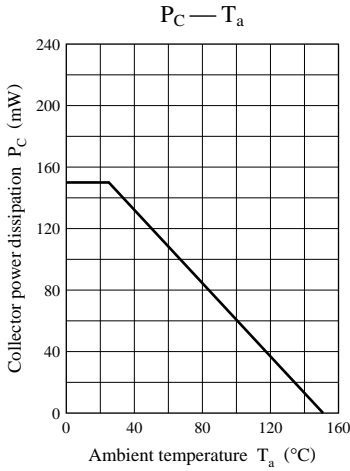
Note) *1: Pulse measurement

*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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