

2SD1820, 2SD1820A

Silicon NPN epitaxial planer type

For general amplification

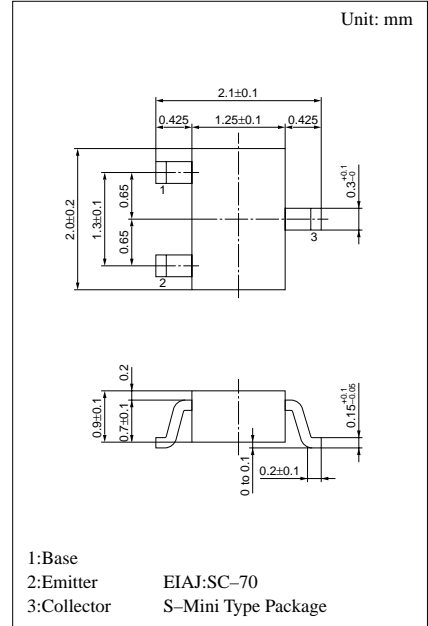
Complementary to 2SB1219 and 2SB1219A

■ 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 (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V _{CBO}	30	V
2SD1820A		60	
Collector to emitter voltage	V _{CEO}	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	°C
Storage temperature	T _{stg}	-55 ~ +150	°C



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

■ Electrical Characteristics (Ta=25°C)

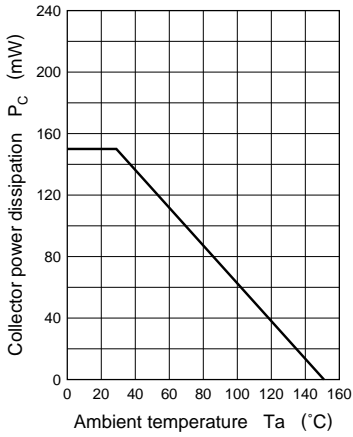
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I _{CBO}	V _{CB} = 20V, I _E = 0			0.1	μA
Collector to base voltage	V _{CBO}	I _C = 10μA, I _E = 0	30			V
			60			
Collector to emitter voltage	V _{CEO}	I _C = 2mA, I _B = 0	25			V
			50			
Emitter to base voltage	V _{EBO}	I _E = 10μA, I _C = 0	5			V
Forward current transfer ratio	h _{FE1} ^{*1}	V _{CE} = 10V, I _C = 150mA ^{*2}	85	160	340	
	h _{FE2}	V _{CE} = 10V, I _C = 500mA ^{*2}	40			
Collector to emitter saturation voltage	V _{CE(sat)}	I _C = 300mA, I _B = 30mA ^{*2}		0.35	0.6	V
Transition frequency	f _T	V _{CB} = 10V, I _E = -50mA ^{*2} , f = 200MHz		200		MHz
Collector output capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz		6	15	pF

^{*2} Pulse measurement

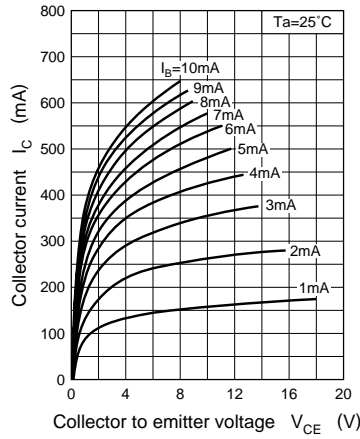
^{*1}h_{FE1} Rank classification

Rank	Q	R	S	
h _{FE1}	85 ~ 170	120 ~ 240	170 ~ 340	
Marking	2SD1820	WQ	WR	WS
Symbol	2SD1820A	XQ	XR	XS

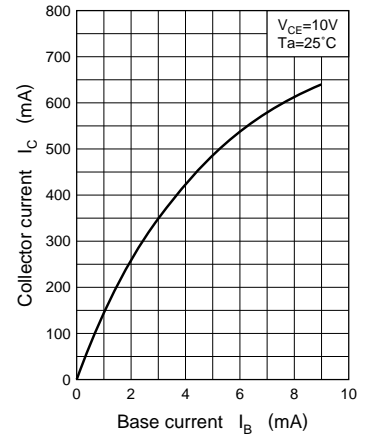
$P_C - T_a$



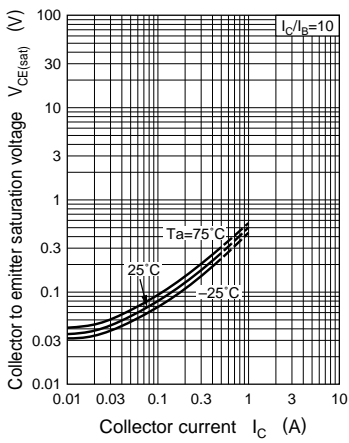
$I_C - V_{CE}$



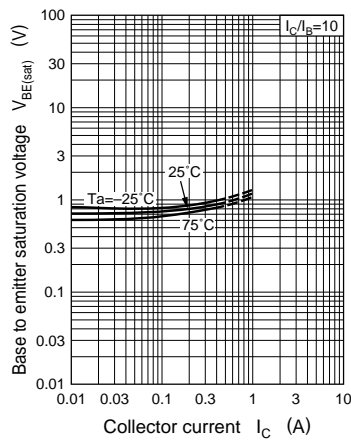
$I_C - I_B$



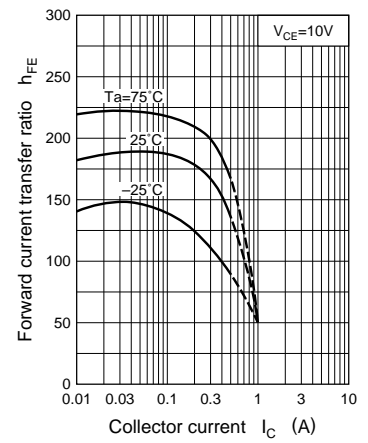
$V_{CE(sat)} - I_C$



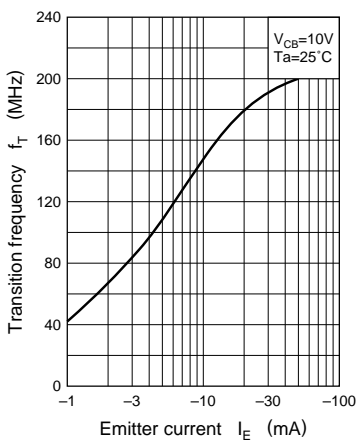
$V_{BE(sat)} - I_C$



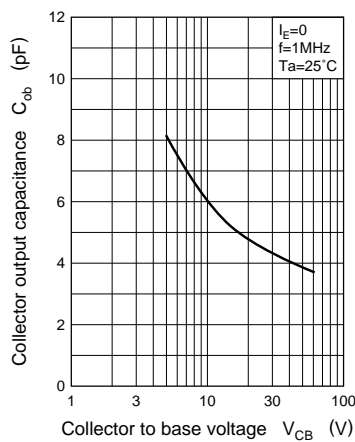
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



$V_{CER} - R_{BE}$

