

2SD1820, 2SD1820A

Silicon NPN epitaxial planer type

For general amplification

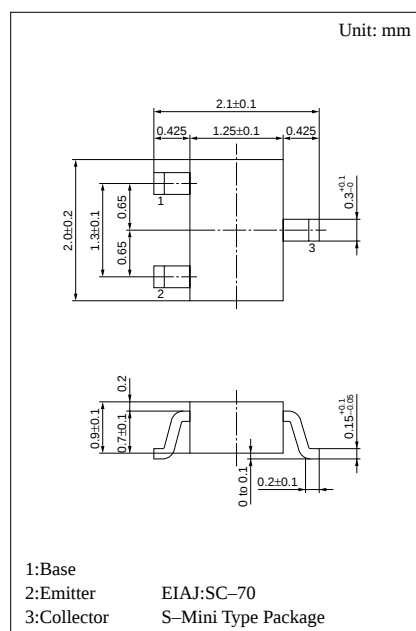
Complementary to 2SB1219 and 2SB1219A

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	2SD1820	V_{CBO}	30	V
	2SD1820A		60	
Collector to emitter voltage	2SD1820	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)

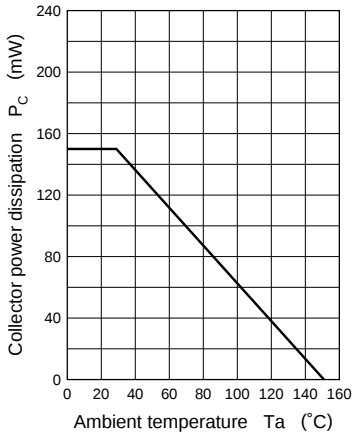
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 20V, I_E = 0$			0.1	μA
Collector to base voltage	2SD1820	V_{CBO}	$I_C = 10\mu A, I_E = 0$	30		V
	2SD1820A			60		
Collector to emitter voltage	2SD1820	V_{CEO}	$I_C = 2mA, I_B = 0$	25		V
	2SD1820A			50		
Emitter to base voltage	V_{EBO}	$I_E = 10\mu A, I_C = 0$	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

^{*1} h_{FE1} Rank classification

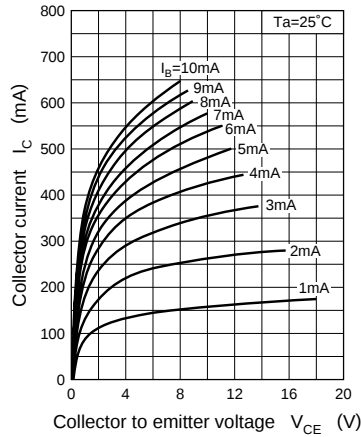
Rank		Q	R	S
h _{FE1}		85 ~ 170	120 ~ 240	170 ~ 340
Marking Symbol	2SD1820	WQ	WR	WS
	2SD1820A	XQ	XR	XS

^{*2} Pulse measurement

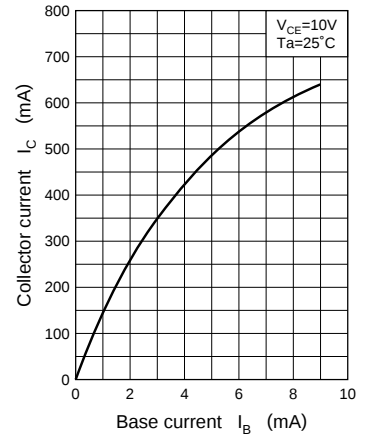
$P_C - T_a$



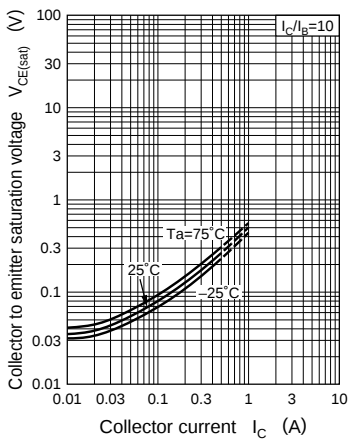
$I_C - V_{CE}$



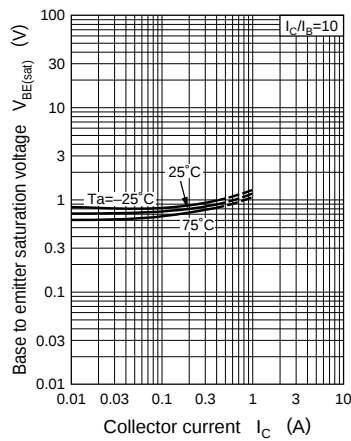
$I_C - I_B$



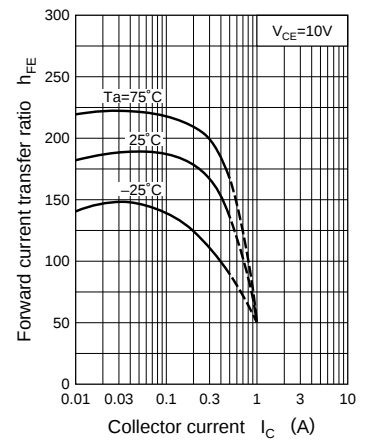
$V_{CE(sat)} - I_C$



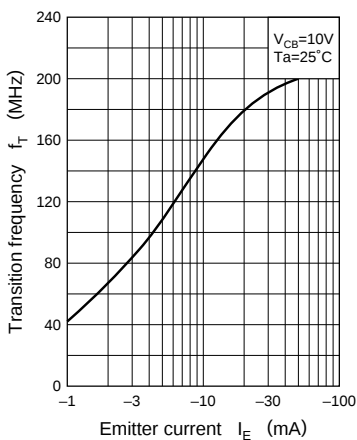
$V_{BE(sat)} - I_C$



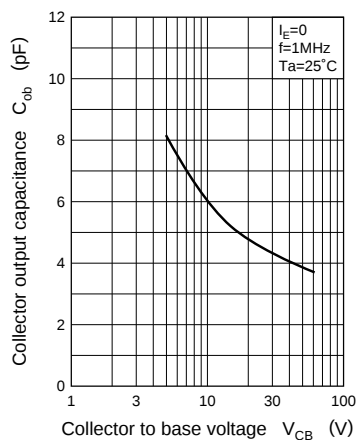
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



$V_{CER} - R_{BE}$

