

2SD1820, 2SD1820A

Silicon NPN epitaxial planer type

For general amplification

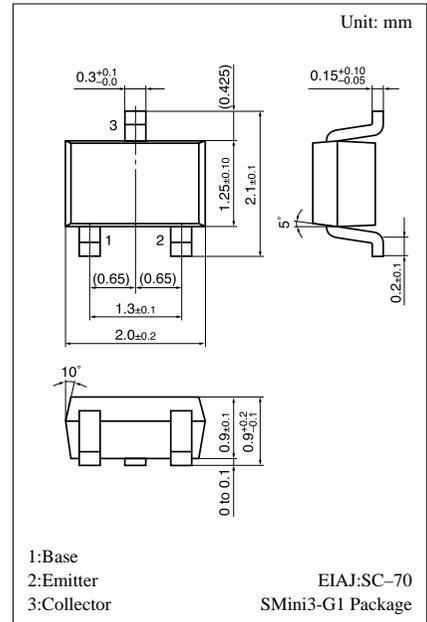
Complementary to 2SB1219 and 2SB1219A

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
2SD1820		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)

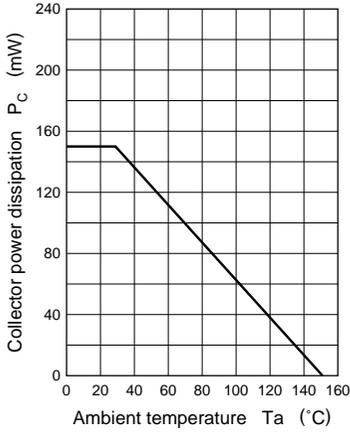
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 20V, I_E = 0$			0.1	μA
Collector to base voltage	2SD1820	$I_C = 10\mu A, I_E = 0$	30			V
	2SD1820A		60			
Collector to emitter voltage	2SD1820	$I_C = 2mA, I_B = 0$	25			V
	2SD1820A		50			
Emitter to base voltage	V_{EBO}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

^{*2} Pulse measurement

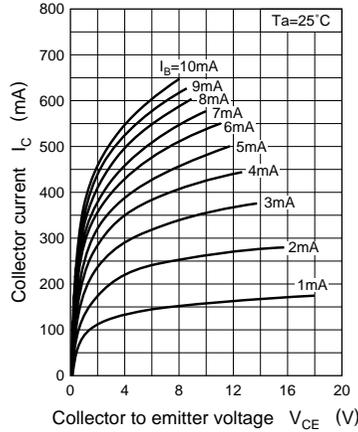
^{*1} h_{FE1} Rank classification

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

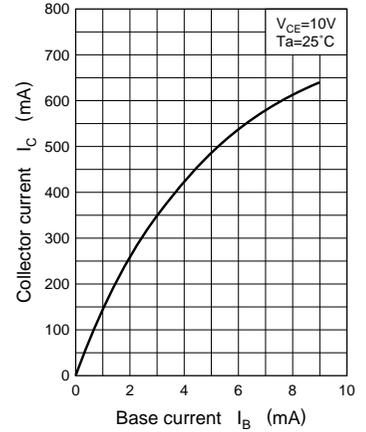
$P_C - T_a$



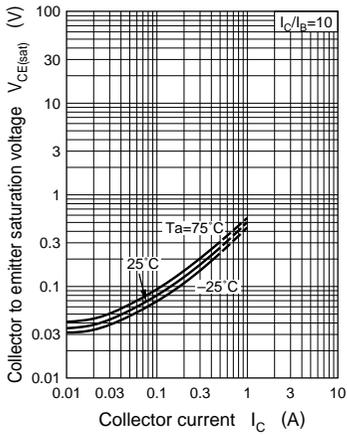
$I_C - V_{CE}$



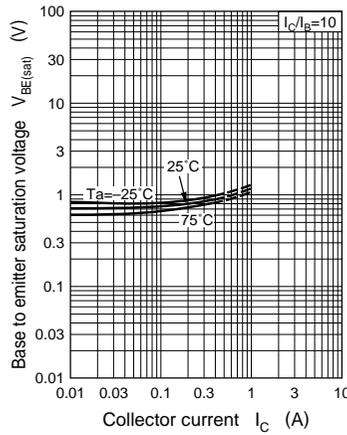
$I_C - I_B$



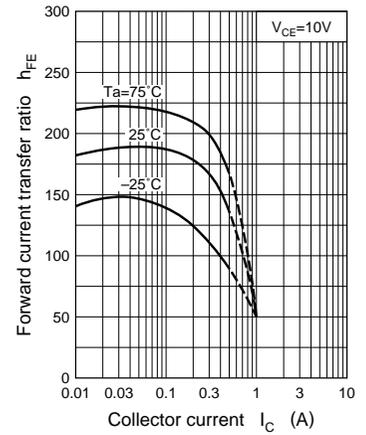
$V_{CE(sat)} - I_C$



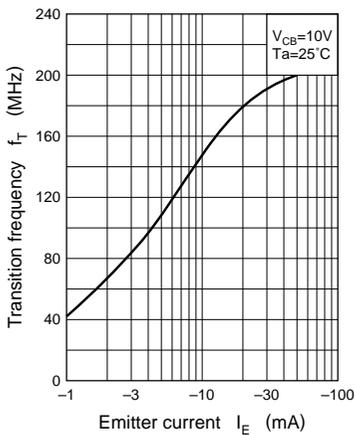
$V_{BE(sat)} - I_C$



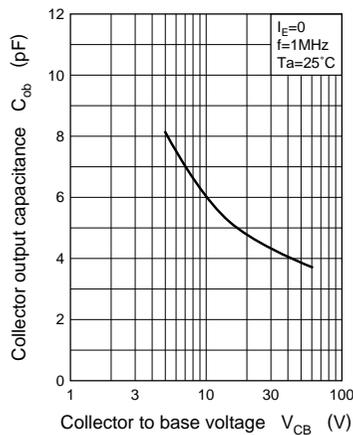
$h_{FE} - I_C$



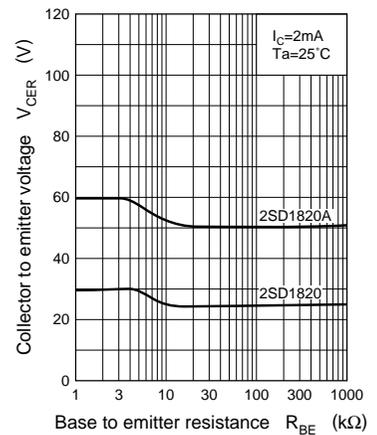
$f_T - I_E$



$C_{ob} - V_{CB}$



$V_{CER} - R_{BE}$



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