

2SD1820A

Silicon NPN epitaxial planer type

For general amplification

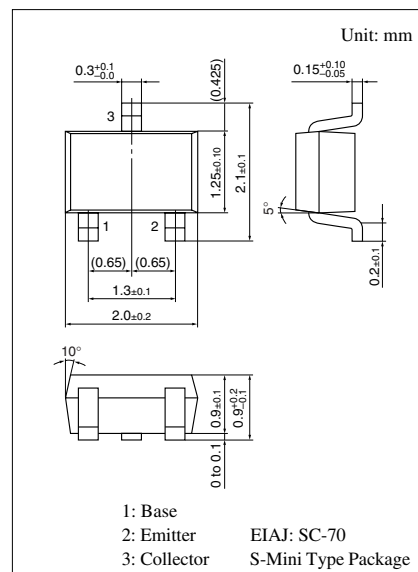
Complementary to 2SB1219A

■ 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	V_{CBO}	60	V
Collector to emitter voltage	V_{CEO}	50	V
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	$^\circ\text{C}$



Marking Symbol: X

■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

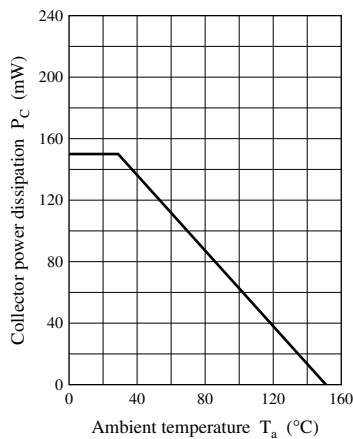
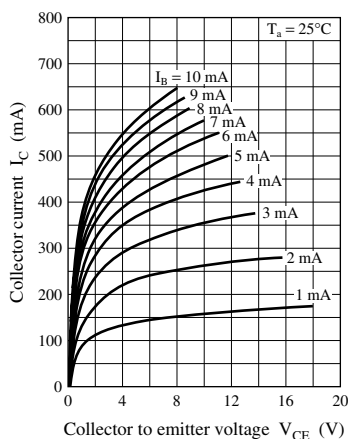
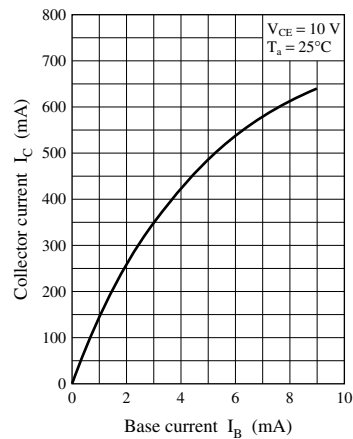
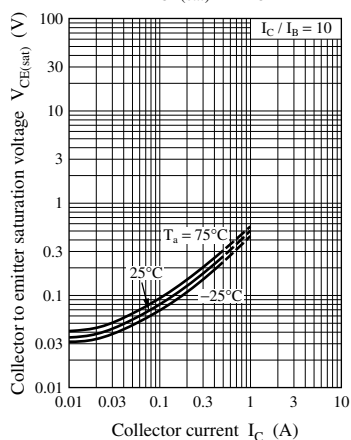
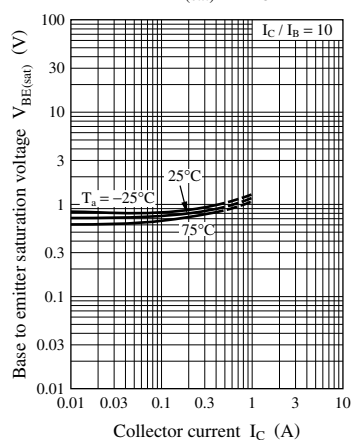
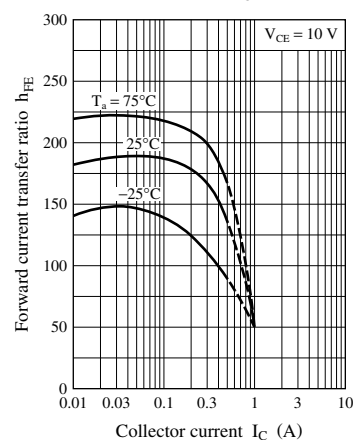
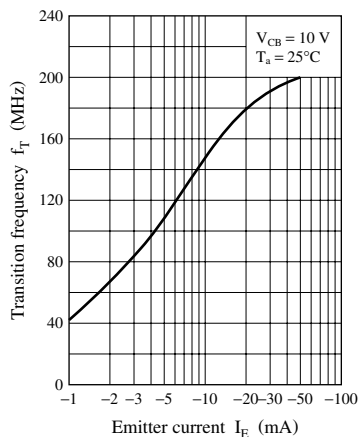
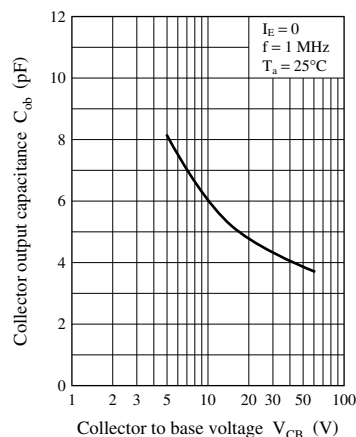
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 20\text{ V}, I_E = 0$			0.1	μA
Collector to base voltage	V_{CBO}	$I_C = 10\text{ }\mu\text{A}, I_E = 0$	60			V
Collector to emitter voltage	V_{CEO}	$I_C = 2\text{ mA}, I_B = 0$	50			V
Emitter to base voltage	V_{EBO}	$I_E = 10\text{ }\mu\text{A}, I_C = 0$	5			V
Forward current transfer ratio ^{*1}	h_{FE1} ^{*2}	$V_{CE} = 10\text{ V}, I_C = 150\text{ mA}$	85		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}: Rank classification

Rank	Q	R	S	No-rank
h_{FE1}	85 to 170	120 to 240	170 to 340	85 to 340
Marking symbol	XQ	XR	XS	X

Product of no-rank is not classified and have no indication for rank.

$P_C - T_a$  $I_C - V_{CE}$  $I_C - I_B$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_E$  $C_{ob} - V_{CB}$  $V_{CER} - R_{BE}$ 