

2SD1820, 2SD1820A

Silicon NPN epitaxial planar type

For general amplification

Complementary to 2SB1219 and 2SB1219A

■ Features

- Low collector-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-base voltage (Emitter open)	2SD1820	V_{CBO}	30	V
	2SD1820A		60	
Collector-emitter voltage (Base open)	2SD1820	V_{CEO}	25	V
	2SD1820A		50	
Emitter-base voltage (Collector open)		V_{EBO}	5	V
Collector current		I_C	500	mA
Peak collector current		I_{CP}	1	A
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 $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	2SD1820	V_{CBO}	$I_C = 10\text{ }\mu\text{A}$, $I_E = 0$	30			V
	2SD1820A			60			
Collector-emitter voltage (Base open)	2SD1820	V_{CEO}	$I_C = 2\text{ mA}$, $I_B = 0$	25			V
	2SD1820A			50			
Emitter-base voltage (Collector open)		V_{EBO}	$I_E = 10\text{ }\mu\text{A}$, $I_C = 0$	5			V
Collector-base cutoff current (Emitter open)		I_{CBO}	$V_{CB} = 20\text{ V}$, $I_E = 0$			0.1	μA
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-emitter saturation voltage *1		$V_{CE(sat)}$	$I_C = 300\text{ mA}$, $I_B = 30\text{ mA}$		0.35	0.60	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 (Common base, input open circuited)		C_{ob}	$V_{CB} = 10\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$		6	15	pF

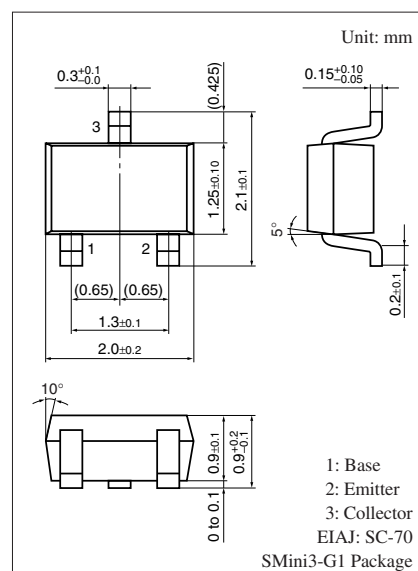
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *1: Pulse measurement

*2: Rank classification

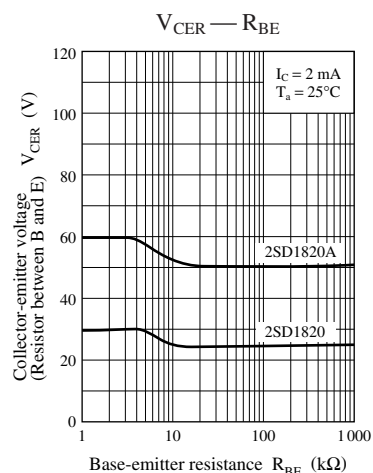
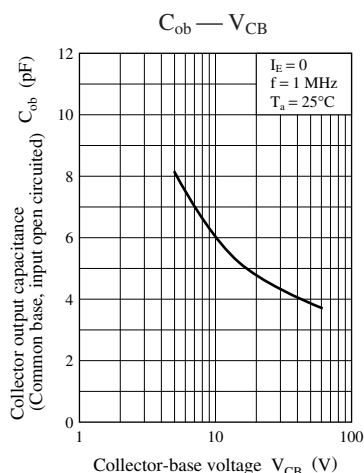
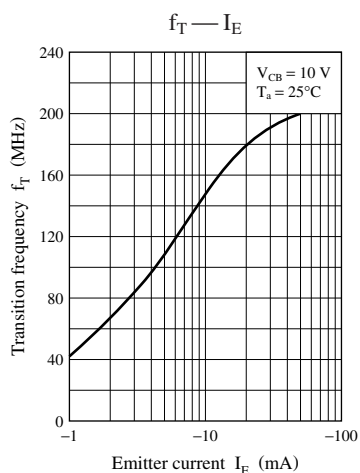
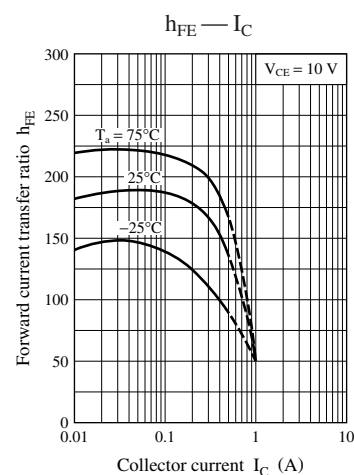
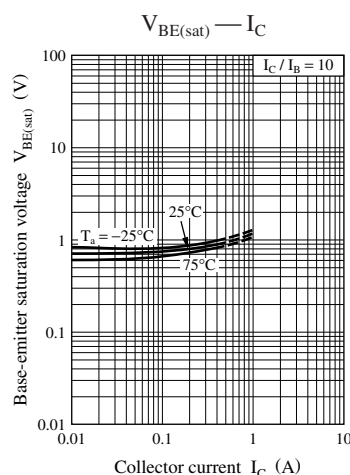
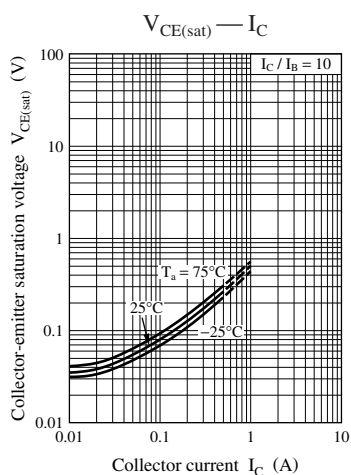
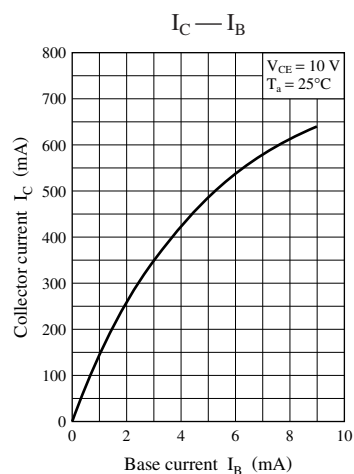
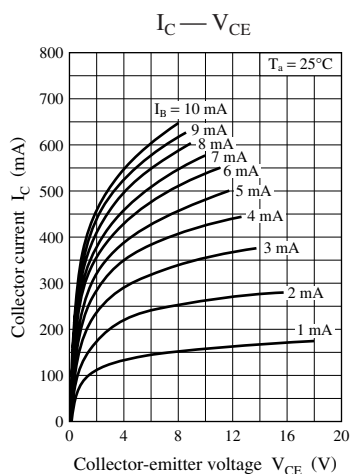
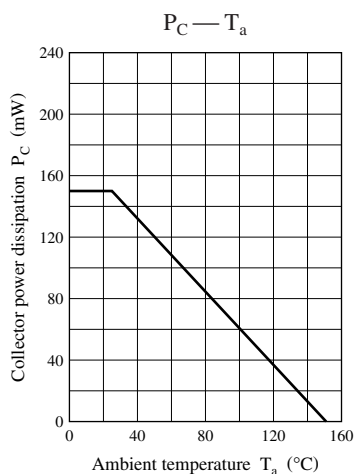
Rank	Q	R	S	No-rank
h_{FE1}	85 to 170	120 to 240	170 to 340	85 to 340
Marking symbol	2SD1820	WQ	WR	WS
	2SD1820A	XQ	XR	XS

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



Marking Symbol:

- 2SD1820: W
- 2SD1820A: X



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