2SD1820, 2SD1820A

Silicon NPN epitaxial planer type

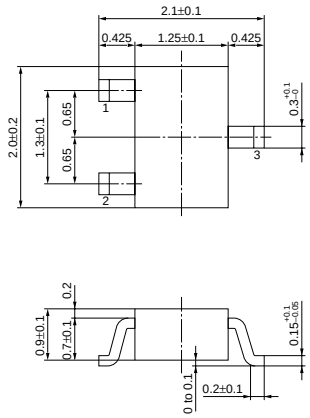
For general amplification

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.

Unit: mm



1:Base
2:Emitter EIAJ:SC–70
3:Collector S–Mini Type Package

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

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

Electrical Characteristics (Ta=25˚C)

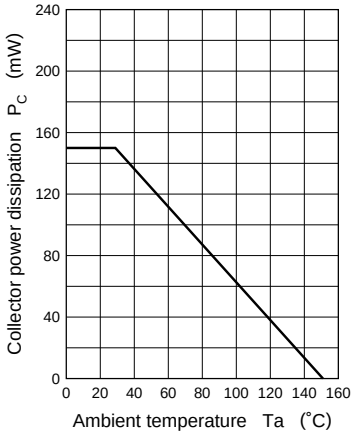
Parameter		Symbol	Conditions	min	typ	max	Unit
Collector cutoff current		I_{CBO}	V_{CB} = 20V, I_E = 0			0.1	μA
Collector to base voltage	2SD1820	V_{CBO}	I_C = 10μA, I_E = 0	30			V
	2SD1820A			60			
Collector to emitter voltage	2SD1820	V_{CEO}	I_C = 2mA, I_B = 0	25			V
	2SD1820A			50			
Emitter to base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

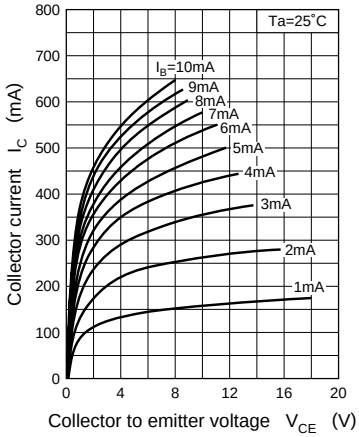
*1h_{FE1} Rank classification

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

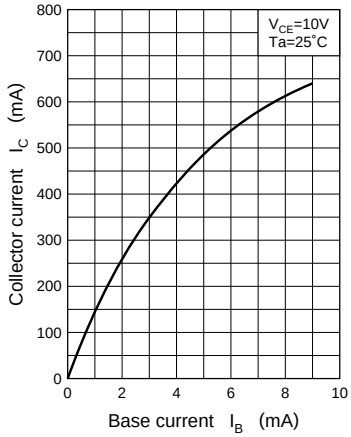
P_C — Ta



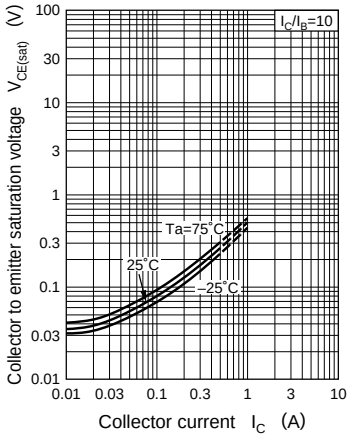
I_C — V_{CE}



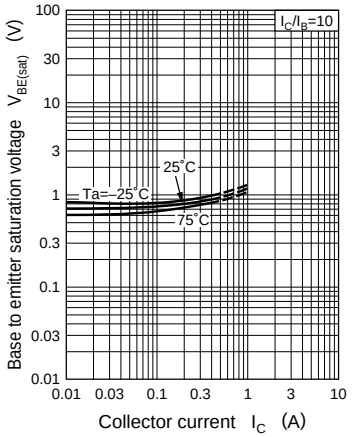
I_C — I_B



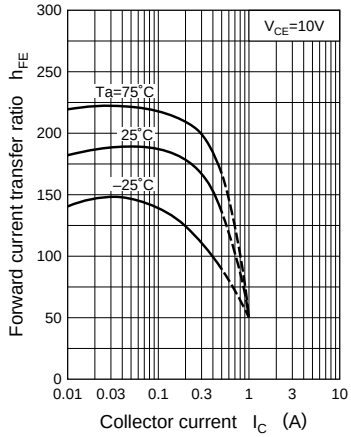
$V_{CE(sat)}$ — I_C



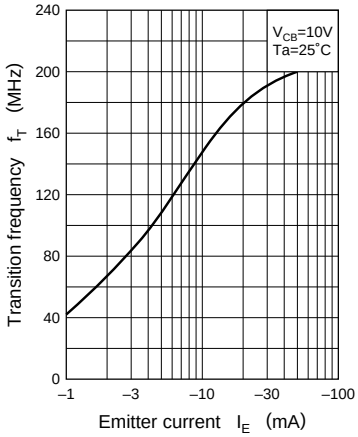
$V_{BE(sat)}$ — I_C



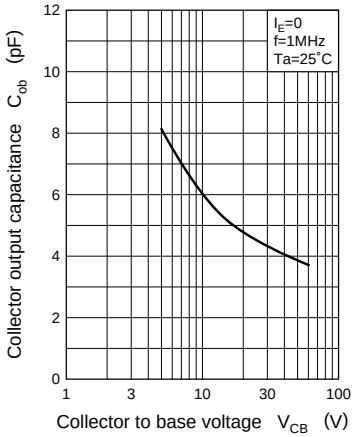
h_{FE} — I_C



f_T — I_E



C_{ob} — V_{CB}



V_{CER} — R_{BE}