

2SD1821, 2SD1821A

Silicon NPN epitaxial planer type

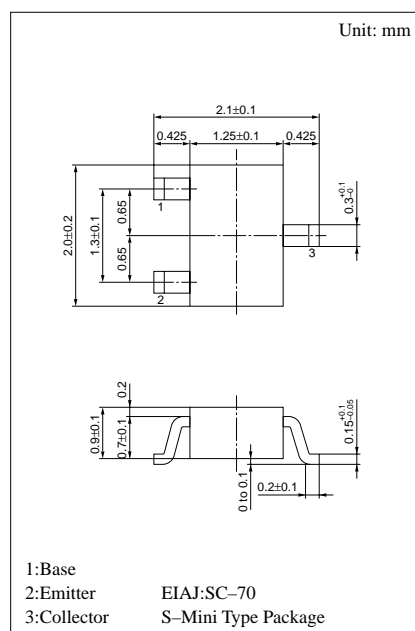
For high breakdown voltage low-frequency and low-noise amplification

Features

- High collector to emitter voltage V_{CEO} .
- Low noise voltage NV.
- 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	Ratings	Unit
Collector to base voltage	2SD1821	150	V
	2SD1821A	185	
Collector to emitter voltage	2SD1821	150	V
	2SD1821A	185	
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	100	mA
Collector current	I_C	50	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$



Marking symbol : P(2SD1821)
L(2SD1821A)

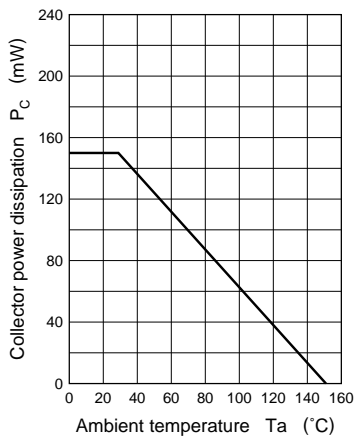
Electrical Characteristics ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 100\text{V}, I_E = 0$			1	μA
Collector to emitter voltage	2SD1821	$I_C = 100\mu\text{A}, I_B = 0$	150			V
	2SD1821A		185			
Emitter to base voltage	V_{EBO}	$I_E = 10\mu\text{A}, I_C = 0$	5			V
Forward current transfer ratio	h_{FE}^*	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	130		330	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 30\text{mA}, I_B = 3\text{mA}$			1	V
Transition frequency	f_T	$V_{CB} = 10\text{V}, I_E = -10\text{mA}, f = 200\text{MHz}$		150		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$		2.3		pF
Noise voltage	NV	$V_{CE} = 10\text{V}, I_C = 1\text{mA}, G_V = 80\text{dB}$ $R_g = 100\text{k}\Omega, \text{Function} = \text{FLAT}$		150		mV

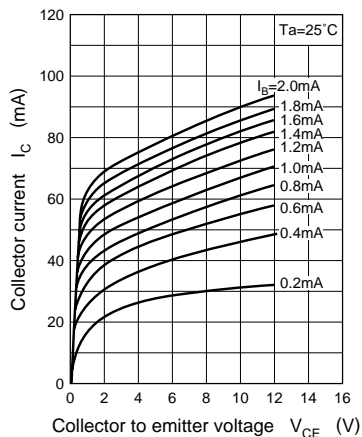
* h_{FE} Rank classification

Rank	R	S
h_{FE}	130 ~ 220	185 ~ 330
Marking	2SD1821	PR
Symbol	2SD1821A	LR

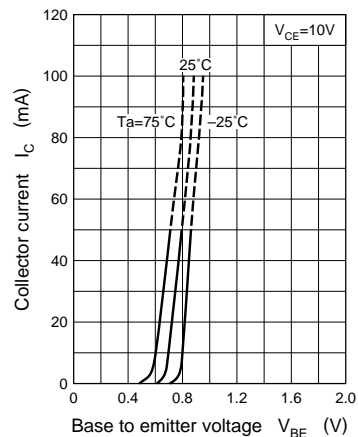
$P_C - T_a$



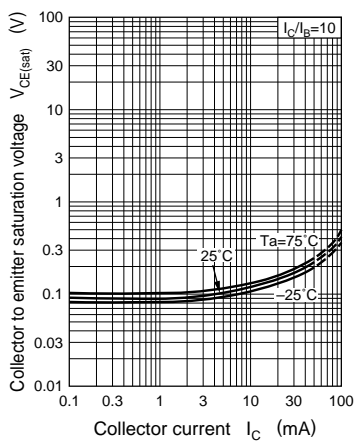
$I_C - V_{CE}$



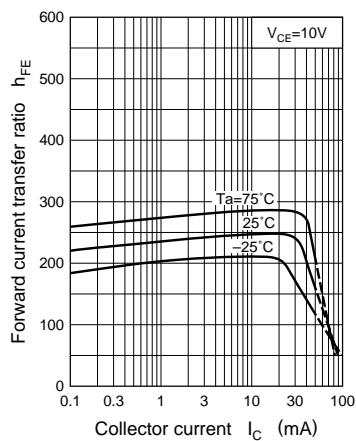
$I_C - V_{BE}$



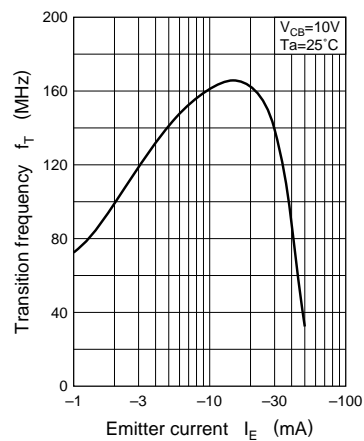
$V_{CE(sat)} - I_C$



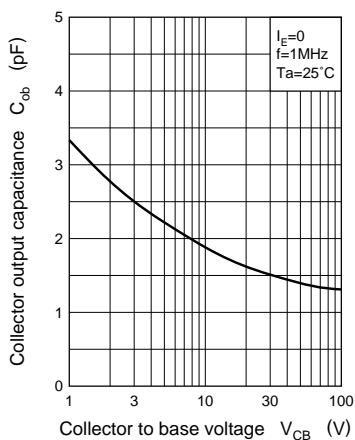
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



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