

# 2SD1821, 2SD1821A

## Silicon NPN epitaxial planar 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 $T_a = 25^\circ\text{C}$

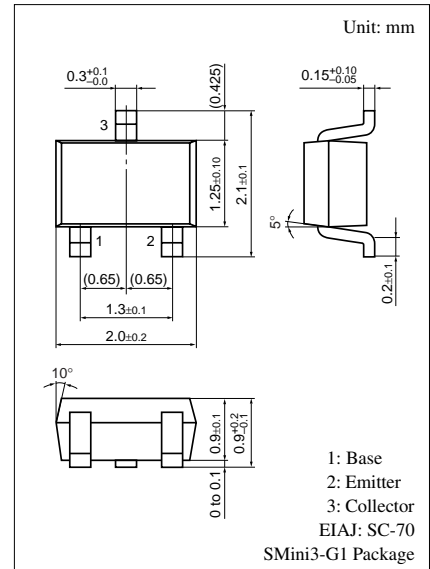
Parameter	Symbol	Rating	Unit	
Collector to base voltage	2SD1821	$V_{CBO}$	150	V
	2SD1821A		185	
Collector to emitter voltage	2SD1821	$V_{CEO}$	150	V
	2SD1821A		185	
Emitter to base voltage	$V_{EBO}$	5	V	
Peak collector current	$I_{CP}$	100	mA	
Collector current	$I_C$	50	mA	
Collector power dissipation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

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

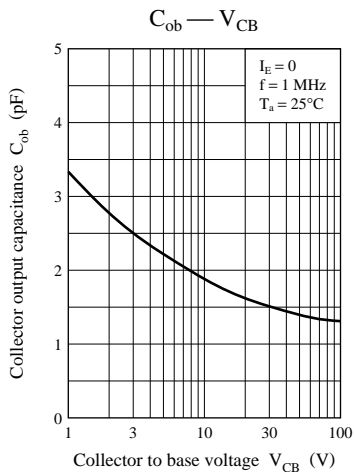
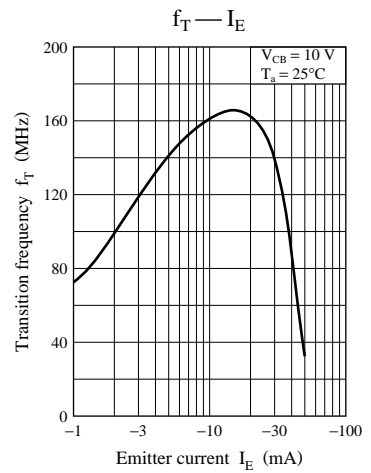
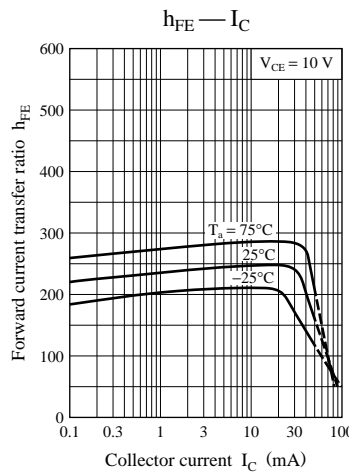
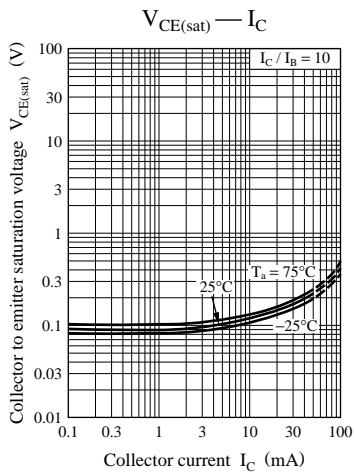
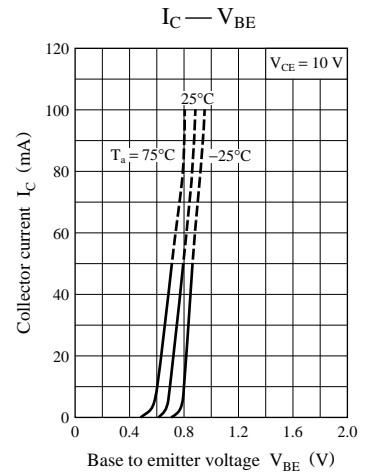
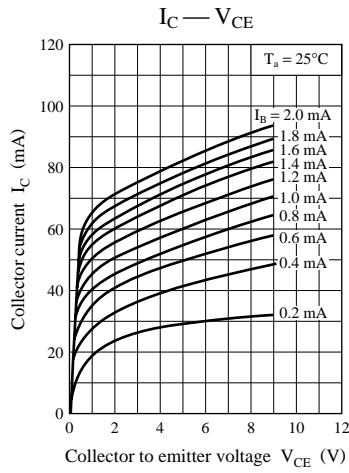
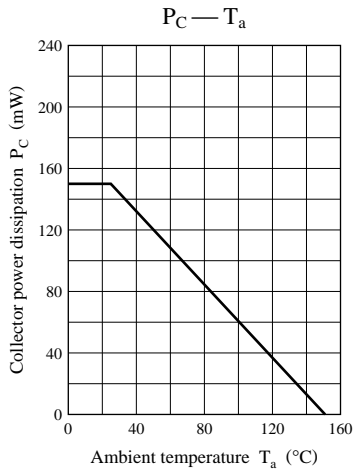
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 100\text{ V}, I_E = 0$			1	$\mu\text{A}$
Collector to emitter voltage	2SD1821	$I_C = 100\ \mu\text{A}, I_B = 0$	150			V
	2SD1821A		185			
Emitter to base voltage	$V_{EBO}$	$I_E = 10\ \mu\text{A}, I_C = 0$	5			V
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

Note) \*:  $h_{FE}$  Rank classification

Rank		R	S
$h_{FE1}$		130 to 220	185 to 330
Marking symbol	2SD1821	PR	PS
	2SD1821A	LR	LS



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



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