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# 2SD1821

## Silicon NPN epitaxial planar type

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

### ■ Features

- High collector-emitter voltage (Base open)  $V_{CEO}$
- Low noise voltage NV
- S-Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing.

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

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

### ■ Package

- Code  
SMini3-G1
- Pin Name
  1. Base
  2. Emitter
  3. Collector

### ■ Marking Symbol: P

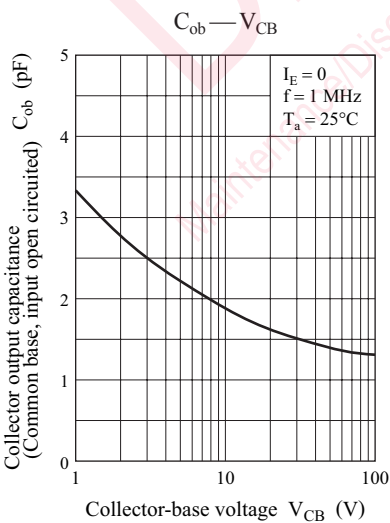
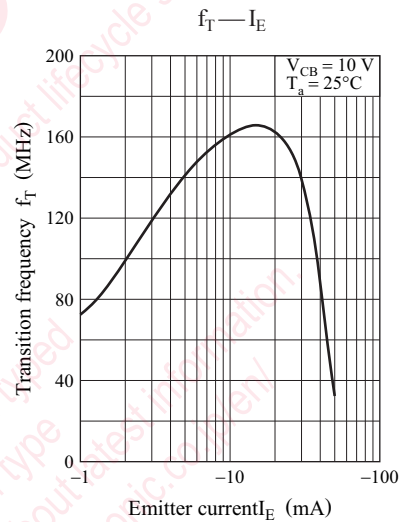
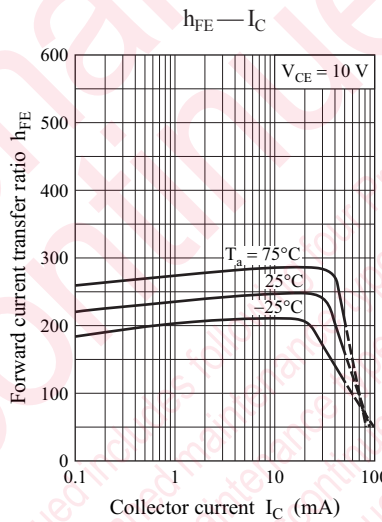
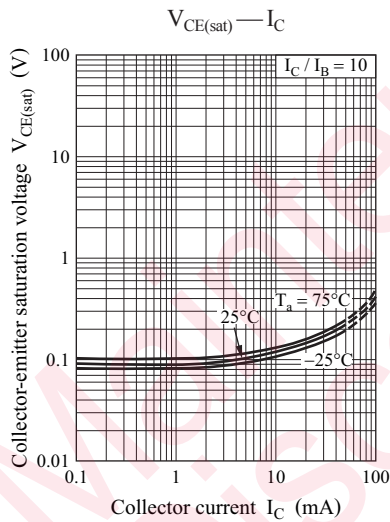
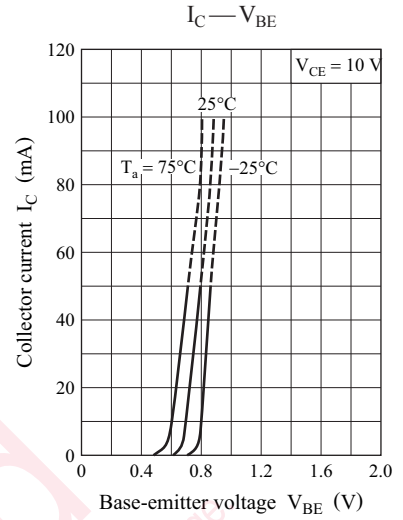
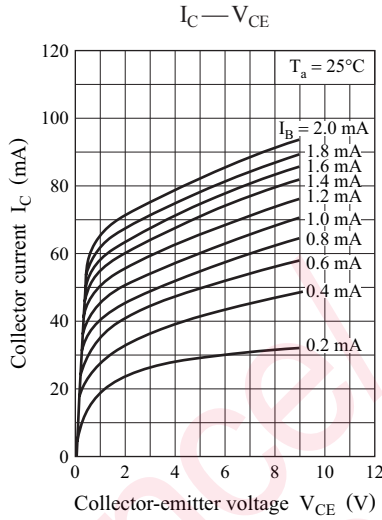
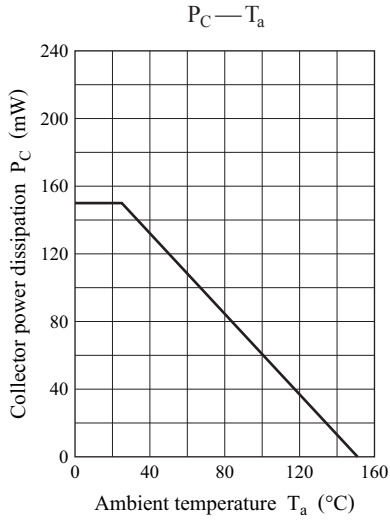
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 100 \mu\text{A}, I_B = 0$	150			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 10 \mu\text{A}, I_C = 0$	5			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 100 \text{V}, I_E = 0$			1	$\mu\text{A}$
Forward current transfer ratio *	$h_{FE}$	$V_{CE} = 5 \text{V}, I_C = 10 \text{mA}$	130		330	—
Collector-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 (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10 \text{V}, I_E = 0, f = 1 \text{MHz}$		2.3		pF
Noise voltage	NV	$V_{CB} = 10 \text{V}, I_C = 1 \text{mA}, G_V = 80 \text{dB},$ $R_g = 100 \text{k}\Omega, \text{Function} = \text{FLAT}$		150		mV

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

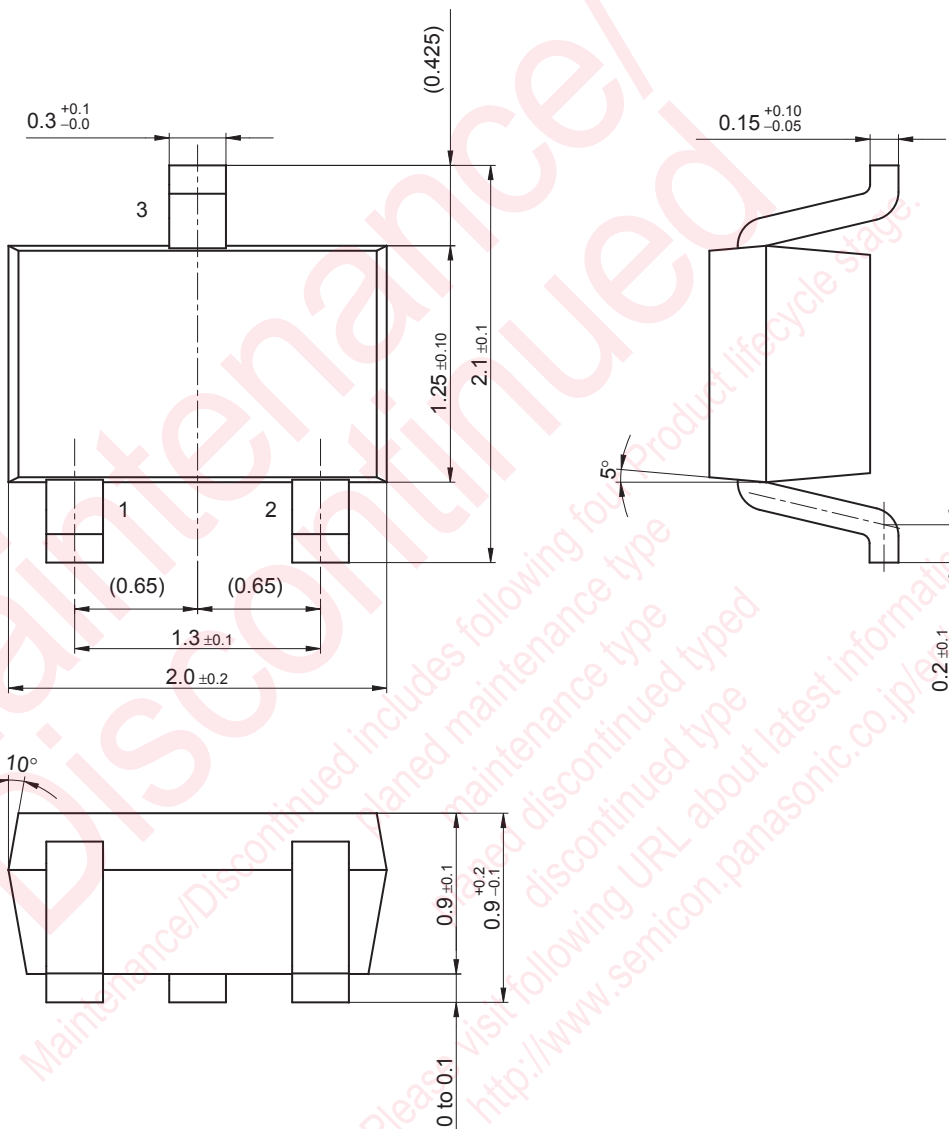
2. \*: Rank classification

Rank	R	S
$h_{FE}$	130 to 220	185 to 330



SMini3-G1

Unit: mm



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