

# 2SD1211

## Silicon NPN epitaxial planar type

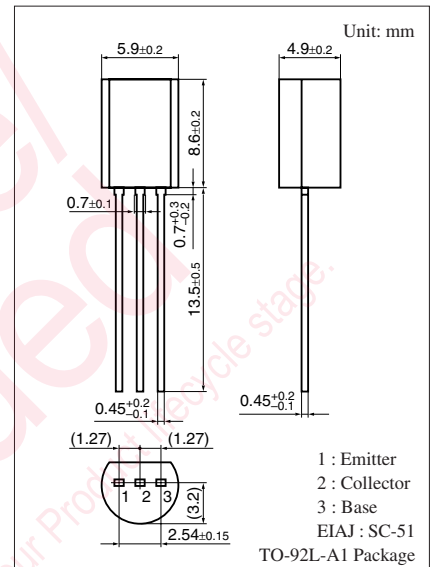
For low-frequency amplification

### ■ Features

- High collector-emitter voltage (Base open)  $V_{CEO}$
- Optimum for the driver-stage of a low-frequency and 40 W to 60 W output amplifier.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	120	V
Collector-emitter voltage (Base open)	$V_{CEO}$	120	V
Emitter-base voltage (Collector open)	$V_{EBO}$	5	V
Collector current	$I_C$	0.5	A
Peak collector current	$I_{CP}$	1	A
Collector power dissipation	$P_C$	1	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



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

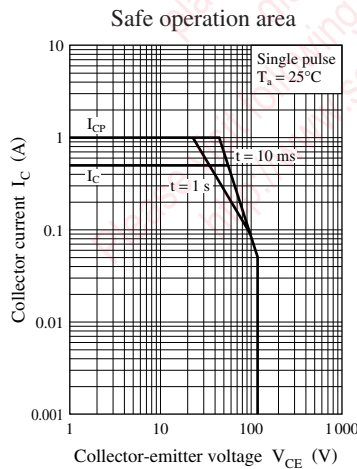
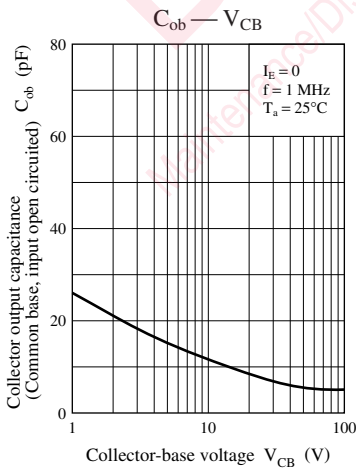
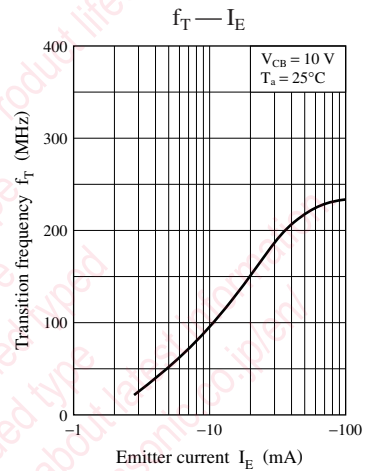
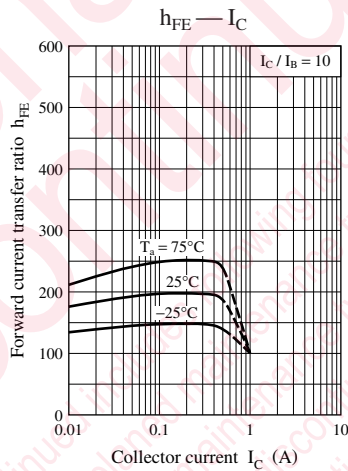
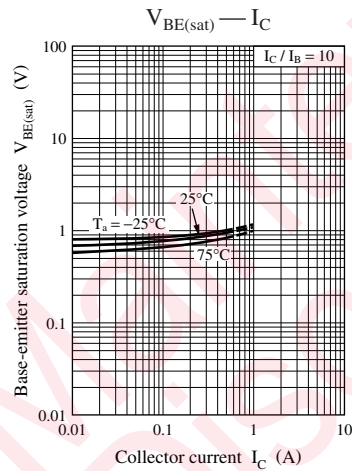
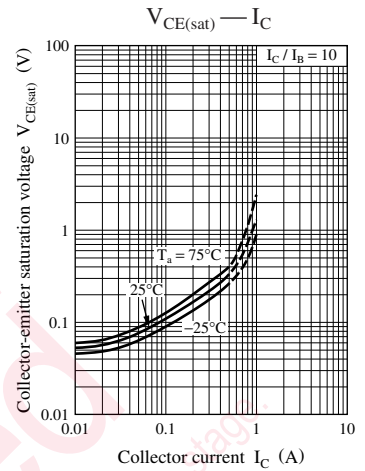
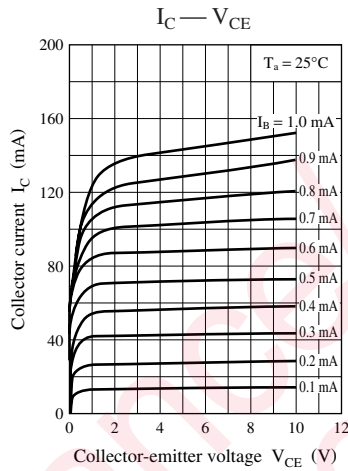
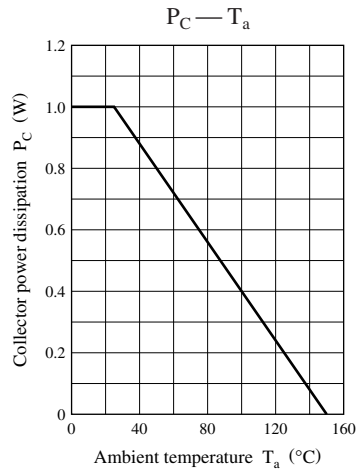
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 0.1 \text{ mA}, I_B = 0$	120			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 10 \mu\text{A}, I_C = 0$	5			V
Forward current transfer ratio *1	$h_{FE1}$ *2	$V_{CE} = 10 \text{ V}, I_C = 150 \text{ mA}$	130		330	—
	$h_{FE}$	$V_{CE} = 5 \text{ V}, I_C = 500 \text{ mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 300 \text{ mA}, I_B = 30 \text{ mA}$			1	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 300 \text{ A}, I_B = 30 \text{ mA}$			1.2	V
Transition frequency	$f_T$	$V_{CB} = 10 \text{ V}, I_E = -50 \text{ mA}, f = 200 \text{ MHz}$		200		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$			20	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	R	S
$h_{FE1}$	130 to 220	185 to 330



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