

# 2SB1169, 2SB1169A

## Silicon PNP epitaxial planar type

For power amplification

### ■ Features

- High forward current transfer ratio  $h_{FE}$  which has satisfactory linearity
- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- I type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

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

Parameter		Symbol	Rating	Unit
Collector-base voltage (Emitter open)	2SB1169	$V_{CBO}$	-60	V
	2SB1169A		-80	
Collector-emitter voltage (Base open)	2SB1169	$V_{CEO}$	-60	V
	2SB1169A		-80	
Emitter-base voltage (Collector open)		$V_{EBO}$	-5	V
Collector current		$I_C$	-1	A
Peak collector current		$I_{CP}$	-2	A
Collector power dissipation <div><math>T_a = 25^{\circ}\text{C}</math></div>		$P_C$	15	W
			1.3	
Junction temperature		$T_j$	150	$^{\circ}\text{C}$
Storage temperature		$T_{stg}$	-55 ~ +150	$^{\circ}\text{C}$

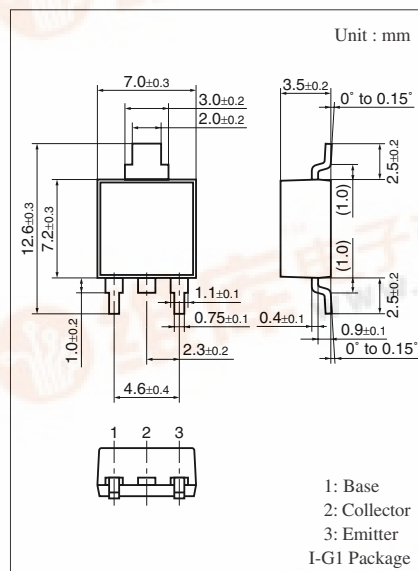
### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SB1169 2SB1169A	$V_{CEO}$ $I_C = -30\text{ mA}, I_B = 0$	-60			V
			-80			
Base-emitter voltage	$V_{BE}$	$V_{CE} = -4\text{ V}, I_C = -1\text{ A}$			-1.3	V
Collector-emitter cutoff current (E-B short)	2SB1169 2SB1169A	$I_{CES}$ $V_{CE} = -60\text{ V}, V_{BE} = 0$ $V_{CE} = -80\text{ V}, V_{BE} = 0$			-200	$\mu\text{A}$
					-200	
Collector-emitter cutoff current (Base open)	2SB1169 2SB1169A	$I_{CEO}$ $V_{CE} = -30\text{ V}, I_B = 0$ $V_{CE} = -60\text{ V}, I_B = 0$			-300	$\mu\text{A}$
					-300	
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$			-1	mA
Forward current transfer ratio	$h_{FE1}^*$ $h_{FE2}$	$V_{CE} = -4\text{ V}, I_C = -0.2\text{ A}$ $V_{CE} = -4\text{ V}, I_C = -1\text{ A}$	40		450	—
			15			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -1\text{ A}, I_B = -0.125\text{ A}$			-1	V
Transition frequency	$f_T$	$V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 10\text{ MHz}$		40		MHz
Turn-on time	$t_{on}$	$I_C = -1\text{ A}, I_{B1} = -50\text{ mA}, I_{B2} = 50\text{ mA}$ $V_{CC} = -50\text{ V}$		0.5		$\mu\text{s}$
Strage time	$t_{stg}$			1.2		$\mu\text{s}$
Fall time	$t_f$			0.3		$\mu\text{s}$

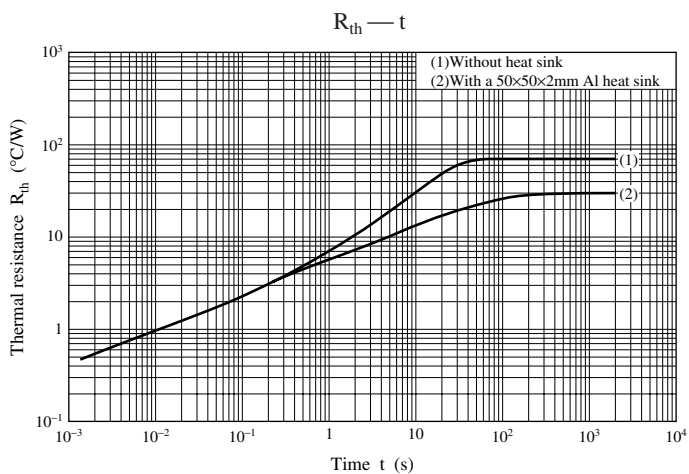
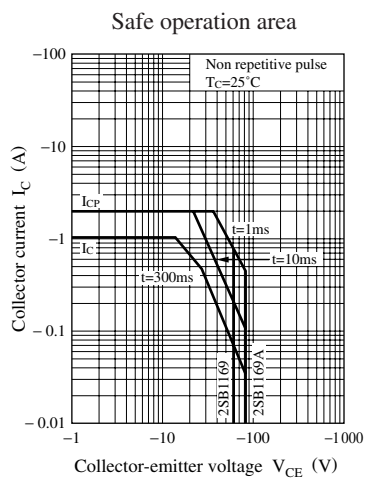
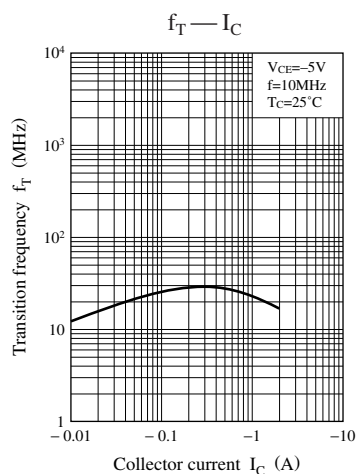
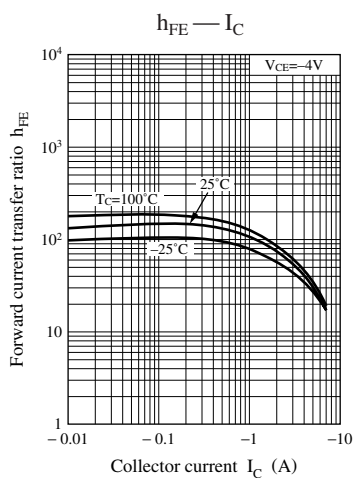
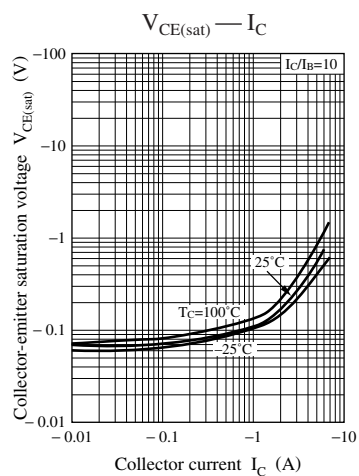
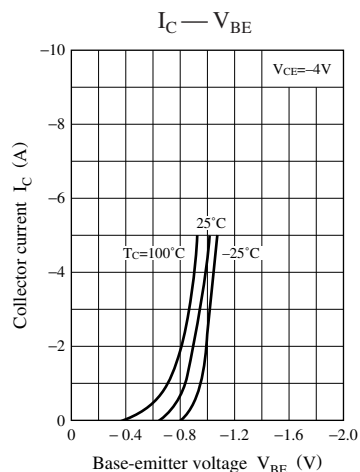
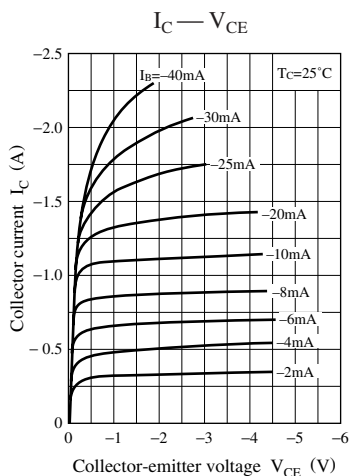
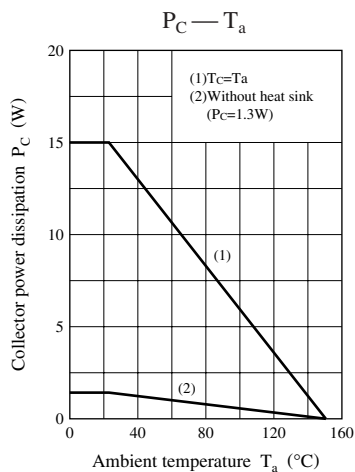
(Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

Rank classification

Rank	R	Q	P	O
$h_{FE1}$	40 to 90	70 to 150	120 to 250	200 to 450



Note) Self-supported type package is also prepared.



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