

2SB1172, 2SB1172A

Silicon PNP epitaxial planar type

For low-frequency power amplification

Complementary to 2SD1742, 2SD742A

■ 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)	2SB1172	-60	V
	2SB1172A	-80	
Collector-emitter voltage (Base open)	2SB1172	-60	V
	2SB1172A	-80	
Emitter-base voltage (Collector open)	V_{EBO}	-5	V
Collector current	I_C	-3	A
Peak collector current	I_{CP}	-5	A
Collector power dissipation	P_C	15	W
		$T_a = 25^\circ\text{C}$	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

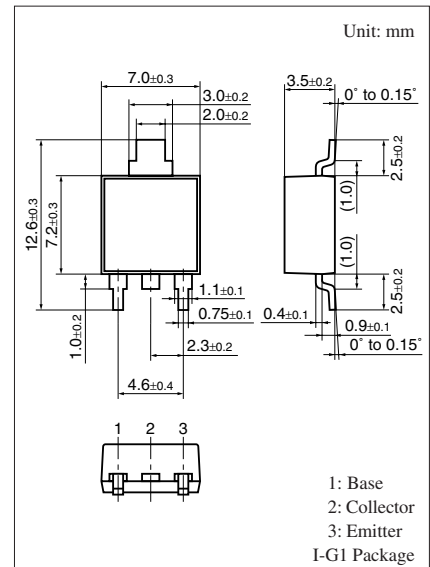
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -30\text{ mA}, I_B = 0$	-60			V
			-80			
Base-emitter voltage	V_{BE}	$V_{CE} = -4\text{ V}, I_C = -3\text{ A}$			-1.8	V
Collector-emitter cutoff current (E-B short)	I_{CES}	$V_{CE} = -60\text{ V}, V_{BE} = 0$			-200	μA
		$V_{CE} = -80\text{ V}, V_{BE} = 0$			-200	
Collector-emitter cutoff current (Emitter open)	I_{CEO}	$V_{CE} = -30\text{ V}, I_B = 0$			-300	μA
		$V_{CE} = -60\text{ V}, I_B = 0$			-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}^*	$V_{CE} = -4\text{ V}, I_C = -1\text{ A}$	70		250	—
	h_{FE2}	$V_{CE} = -4\text{ V}, I_C = -3\text{ A}$	10			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -3\text{ A}, I_B = -0.375\text{ A}$			-1.2	V
Transition frequency	f_T	$V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 10\text{ MHz}$		30		MHz
Turn-on time	t_{on}	$I_C = -1\text{ A}, I_{B1} = -0.1\text{ A}, I_{B2} = 0.1\text{ A}$		0.5		μs
Storage time	t_{stg}	$V_{CC} = -50\text{ V}$		1.2		μs
Fall time	t_f			0.3		μs

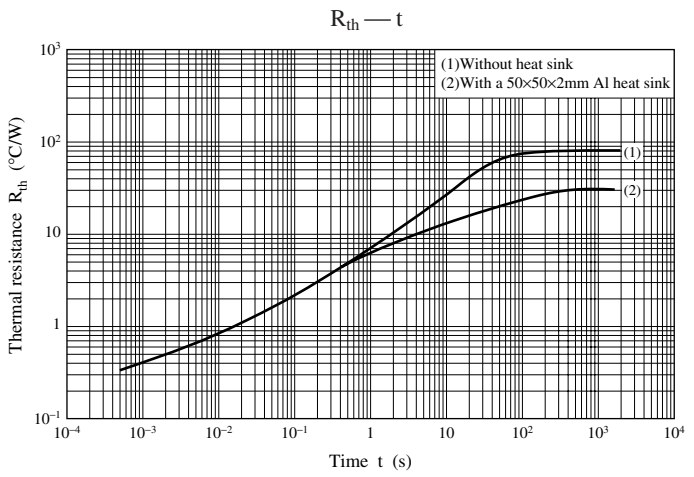
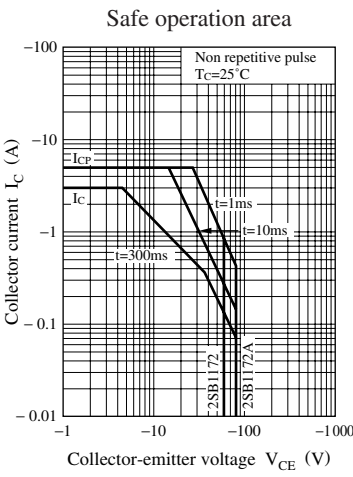
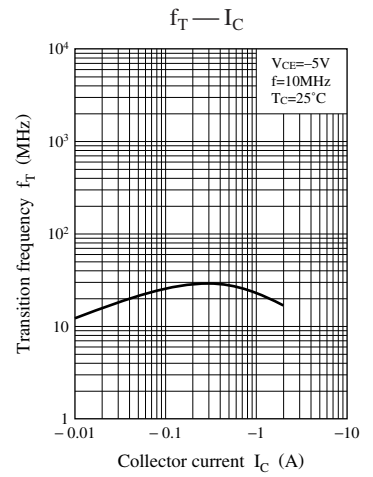
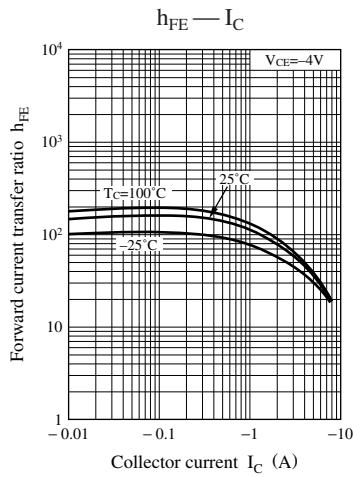
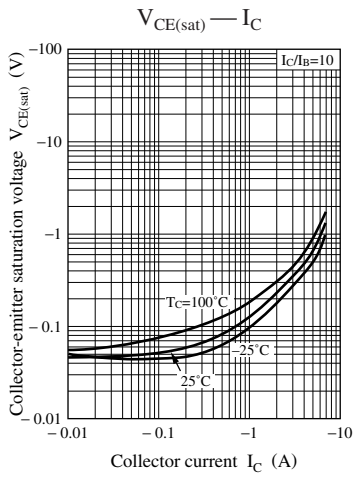
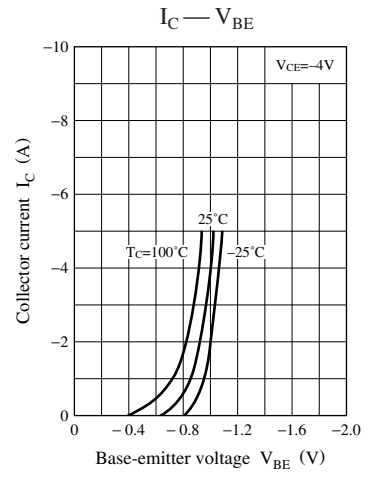
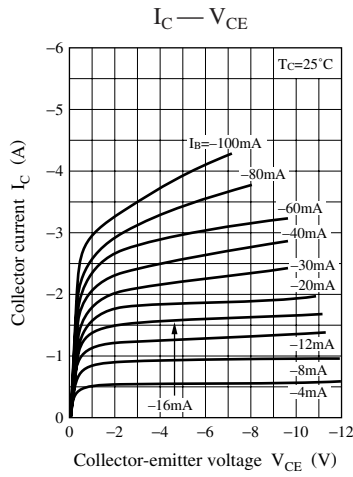
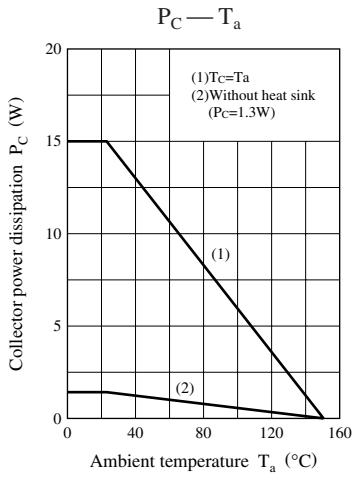
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification

Rank	Q	P
h_{FE2}	70 to 150	120 to 250



Note) Self-supported type package is also prepared.



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