

2SB1172, 2SB1172A

Silicon PNP Epitaxial Planar Type

AF Power Amplifier

Complementary Pair with 2SD1742, 2SB1742

Features

- High DC current gain (h_{FE}) and good linearity
- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- "I Type" package configuration with a cooling fin for direct soldering on PC board of a small-size electronic equipment

Absolute Maximum Ratings ($T_c=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Collector-base voltage	2SB1172	-60	V
	2SB1172A	-80	
Collector-emitter voltage	2SB1172	-60	V
	2SB1172A	-80	
Emitter-base voltage	V_{EBO}	-5	V
Peak collector current	I_{CP}	-5	A
Collector current	I_C	-3	A
Collector power dissipation	$T_c=25^\circ\text{C}$	15	W
	$T_a=25^\circ\text{C}$	1.3	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

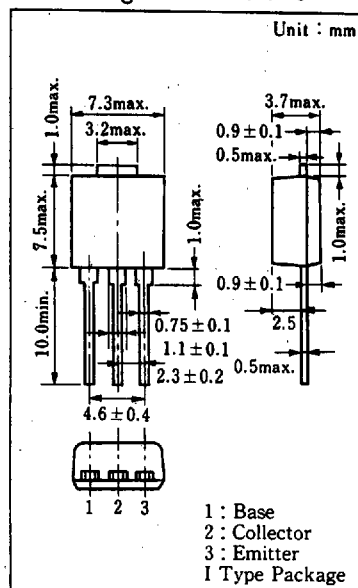
Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	2SB1172	$V_{CE} = -60\text{ V}, V_{BE} = 0$			-200	μA
	2SB1172A	$V_{CE} = -80\text{ V}, V_{BE} = 0$			-300	
Collector cutoff current	2SB1172	$V_{CE} = -30\text{ V}, I_B = 0$			-300	μA
	2SB1172A	$V_{CE} = -60\text{ V}, I_B = 0$			-300	
Emitter cutoff current	I_{EBO}	$V_{EB} = -5\text{ V}, I_C = 0$			-1	mA
Collector-emitter voltage	2SB1172	$I_C = -30\text{ mA}, I_B = 0$	-60			V
	2SB1172A		-80			
DC current gain	h_{FE1}^*	$V_{CE} = -4\text{ V}, I_C = -1\text{ A}$	40		250	
	h_{FE2}	$V_{CE} = -4\text{ V}, I_C = -3\text{ A}$	10			
Base-emitter voltage	V_{BE}	$V_{CE} = -4\text{ V}, I_C = -3\text{ A}$			-1.8	V
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}	$I_C = -1\text{ A}, -I_{B1} = I_{B2} = 0.5\text{ mA}, V_{CC} = -50\text{ V}$		0.5		μs
Storage time	t_{stg}			1.2		μs
Collector current fall time	t_f			0.3		μs

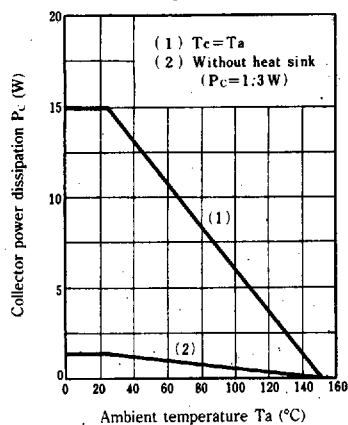
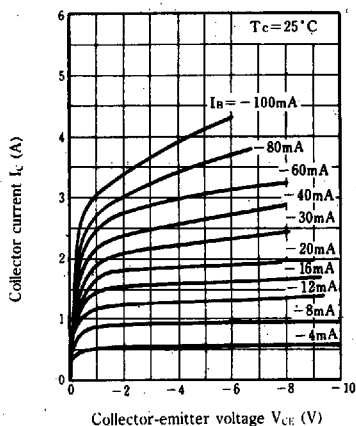
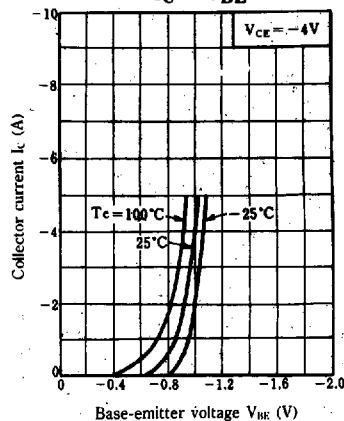
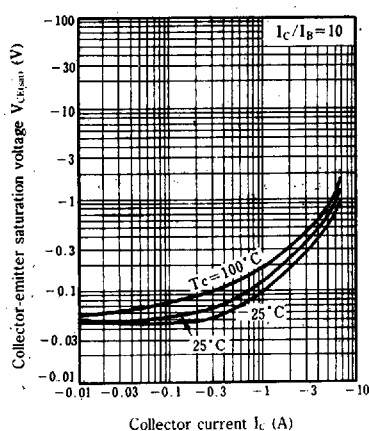
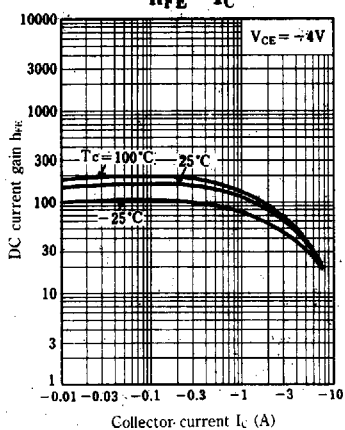
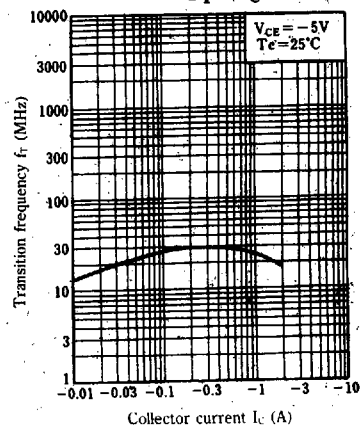
* h_{FE1} Classifications

Class	R	Q	P
h_{FE1}	40 ~ 90	70 ~ 150	120 ~ 250

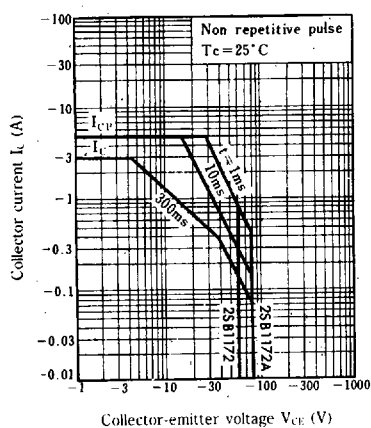
Package Dimensions



*Surface-mount type is also available.
(Refer to p.81.)

$P_C - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_C$ 

Area of safe operation (ASO)

 $R_{th(t)} - t$ 