

# 2SD812

## Silicon NPN Triple-Diffused Planar Type

High Power Amplifier

Complementary Pair with 2SB747

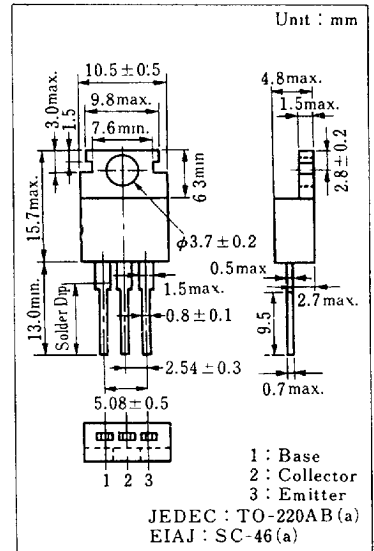
### ■ Features

- Wide area of safety operation (ASO)
- Good linearity of DC current gain ( $h_{FE}$ )
- Optimum for 15~20W home stereo output and stabilized power source

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

Item	Symbol	Value	Unit	
Collector-base voltage	$V_{CB0}$	80	V	
Collector-emitter voltage	$V_{CE0}$	80	V	
Emitter-base voltage	$V_{EB0}$	5	V	
Peak collector current	$I_{CP}$	8	A	
Collector current	$I_C$	5	A	
Collector power dissipation	$P_C$	$T_c=25^\circ\text{C}$	40	W
		$T_a=25^\circ\text{C}$	1.4	
Junction temperature	$T_j$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$	

### ■ Package Dimensions



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

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB}=80\text{ V}, I_E=0$			50	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB}=3\text{ V}, I_C=0$			50	$\mu\text{A}$
DC current gain	$h_{FE1}$	$V_{CE}=5\text{ V}, I_C=0.02\text{ A}$	20			
	$h_{FE2}^*$	$V_{CE}=5\text{ V}, I_C=1\text{ A}$	40		200	
	$h_{FE3}$	$V_{CE}=5\text{ V}, I_C=3\text{ A}$	20			
Base-emitter voltage	$V_{BE}$	$V_{CE}=5\text{ V}, I_C=3\text{ A}$			1.8	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=3\text{ A}, I_B=0.3\text{ A}$			2	V
Transition frequency	$f_T$	$V_{CE}=5\text{ V}, I_C=0.5\text{ A}, f=1\text{ MHz}$		15		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10\text{ V}, I_E=0, f=1\text{ MHz}$		90		pF

### \* $h_{FE2}$ Classifications

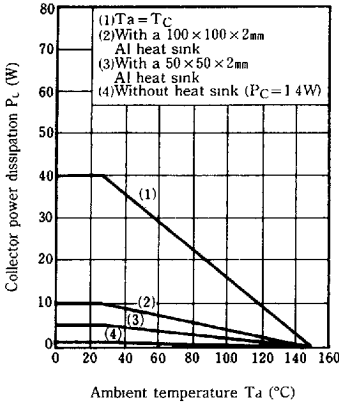
Class	R	Q	P
$h_{FE2}$	40~80	60~120	100~200

6932852 0016620 551

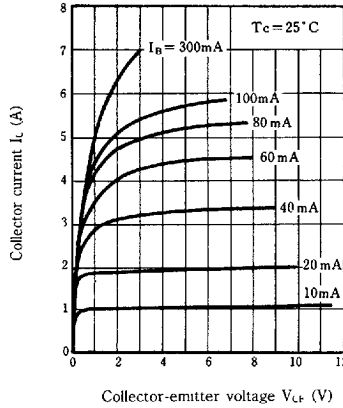
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Panasonic

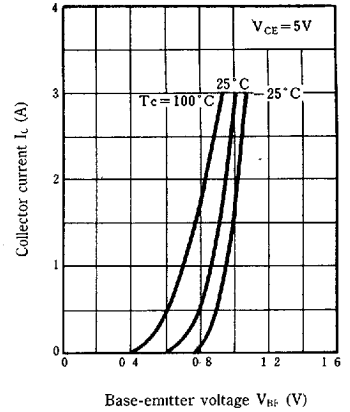
**P<sub>C</sub> - T<sub>a</sub>**



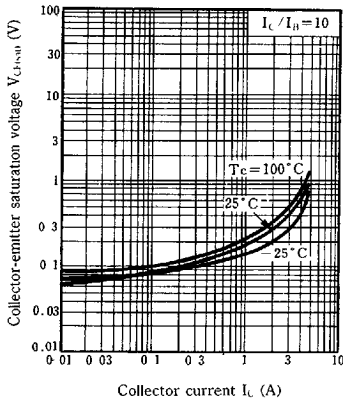
**I<sub>C</sub> - V<sub>CE</sub>**



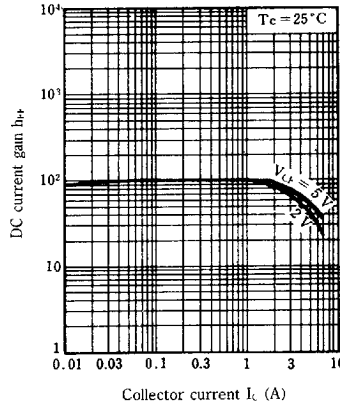
**I<sub>C</sub> - V<sub>BE</sub>**



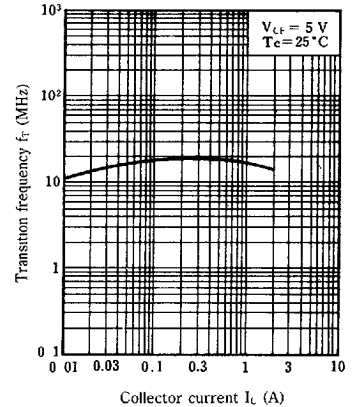
**V<sub>CE(sat)</sub> - I<sub>C</sub>**



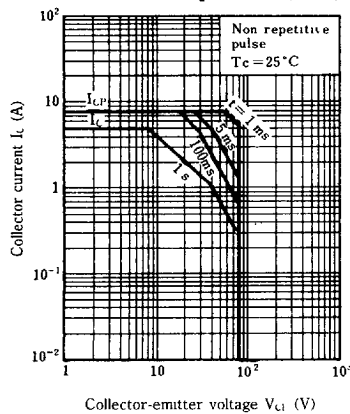
**h<sub>FE</sub> - I<sub>C</sub>**



**f<sub>T</sub> - I<sub>C</sub>**



**Area of safe operation (ASO)**



**R<sub>th(t)</sub> - t**

