

2SD2140

Silicon NPN Triple-Diffused Planar Type

High Power Amplifier

Complementary Pair with 2SB1372

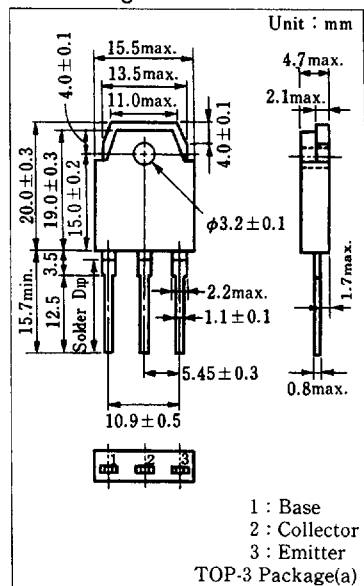
■ Features

- Very good linearity of DC current gain (h_{FE})
- Wide area of good linearity (ASO)
- High transition frequency (f_T)
- Optimum for hi-fi audio amplifier output

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

Item	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	140	V
Collector-emitter voltage	V_{CEO}	140	V
Emitter-base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	12	A
Collector current	I_C	7	A
Collector power dissipation	$T_C=25^\circ\text{C}$	80	W
	$T_a=25^\circ\text{C}$	2.5	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

■ Package Dimensions

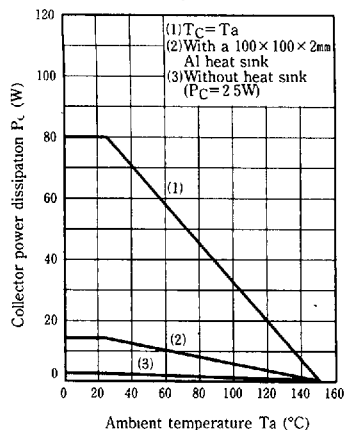
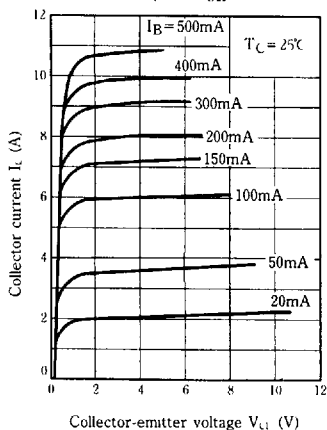
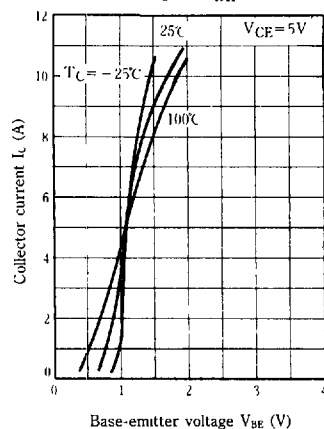
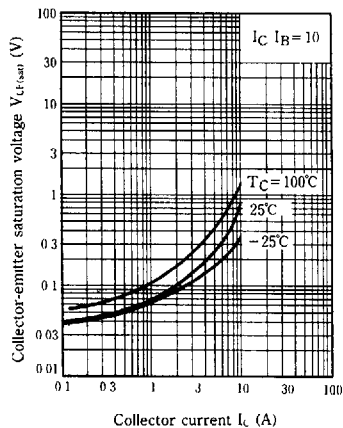
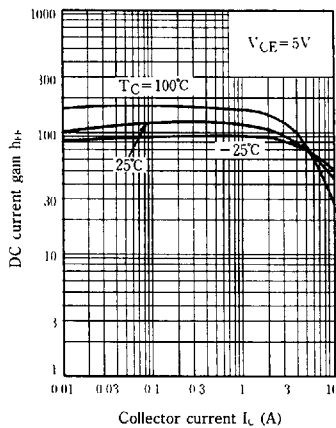
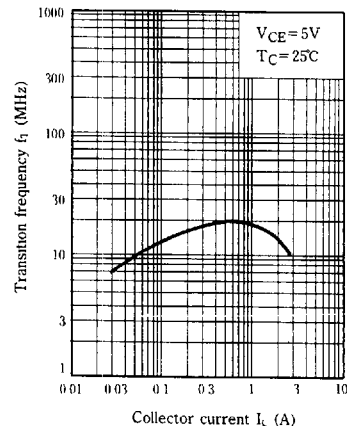
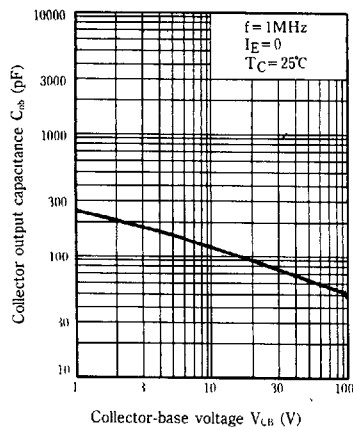


■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB}=140\text{V}, I_E=0$			50	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=3\text{V}, I_C=0$			50	μA
DC current gain	h_{FE1}	$V_{CE}=5\text{V}, I_C=20\text{mA}$	20			
	h_{FE2}^*	$V_{CE}=5\text{V}, I_C=1\text{A}$	60		200	
	h_{FE3}	$V_{CE}=5\text{V}, I_C=5\text{A}$	20			
Base-emitter voltage	V_{BE}	$V_{CE}=5\text{V}, I_C=5\text{A}$			1.8	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=5\text{A}, I_B=0.5\text{A}$			2.0	V
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=0.5\text{A}, f=1\text{MHz}$		20		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}, I_E=0$		110		pF

* h_{FE2} Classifications

Class	Q	S	P
h_{FE2}	60~120	80~160	100~200

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

Safety operation area-forward bias (ASO)

