

# 2SD1133, 2SD1134

Silicon NPN Triple Diffused

# HITACHI

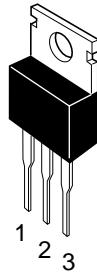
ADE-208-905 (Z)  
1st. Edition  
Sep. 2000

## Application

Low frequency power amplifier complementary pair with 2SB857 and 2SB858

## Outline

TO-220AB



1. Base
2. Collector (Flange)
3. Emitter

## Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings		Unit
		2SD1133	2SD1134	
Collector to base voltage	$V_{CBO}$	70	70	V
Collector to emitter voltage	$V_{CEO}$	50	60	V
Emitter to base voltage	$V_{EBO}$	5	5	V
Collector current	$I_C$	4	4	A
Collector peak current	$I_{C(peak)}$	8	8	A
Collector power dissipation	$P_C^{*1}$	40	40	W
Junction temperature	$T_j$	150	150	°C
Storage temperature	$T_{stg}$	-45 to +150	-45 to +150	°C

Note: 1. Value at  $T_C = 25^\circ\text{C}$ .

# 2SD1133, 2SD1134

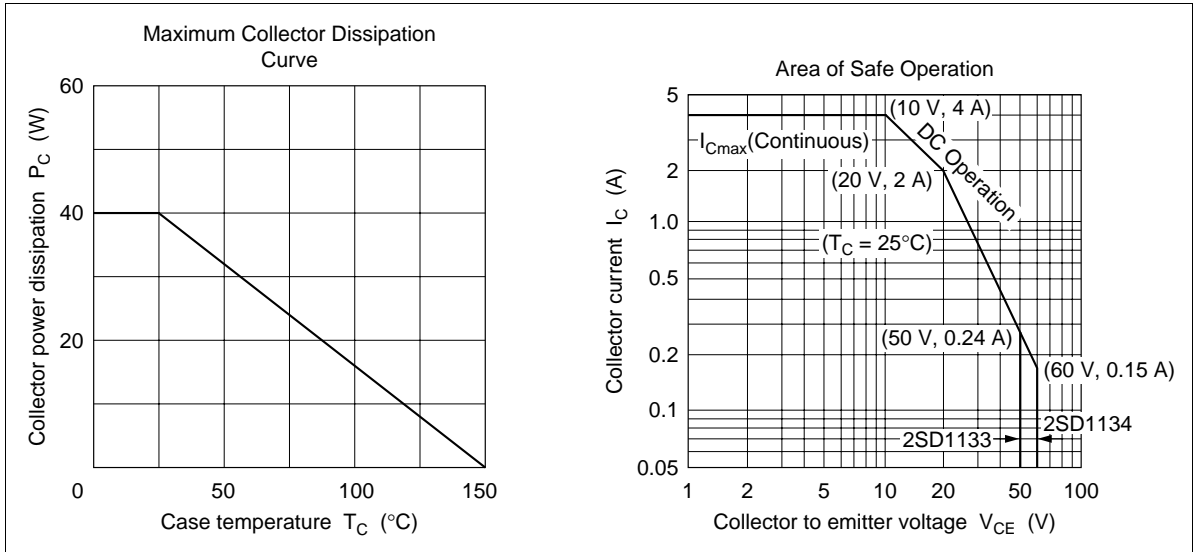
## Electrical Characteristics (Ta = 25°C)

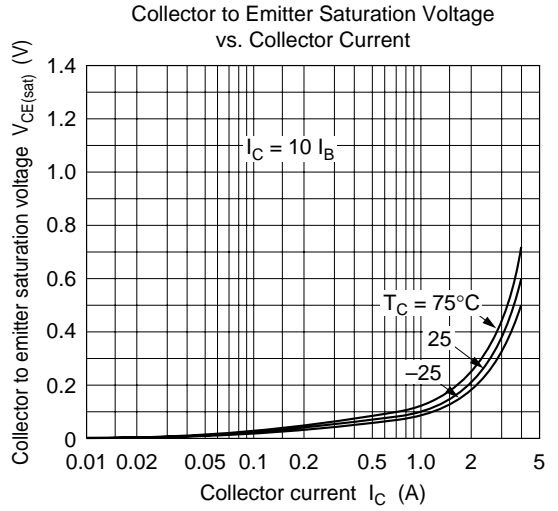
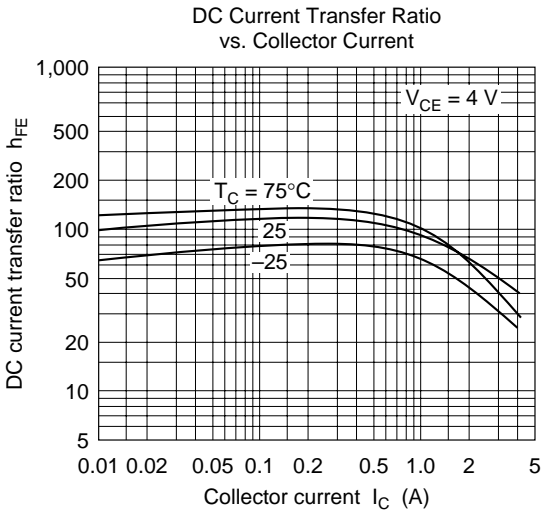
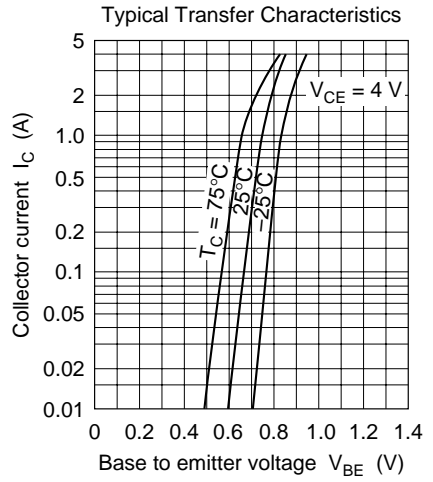
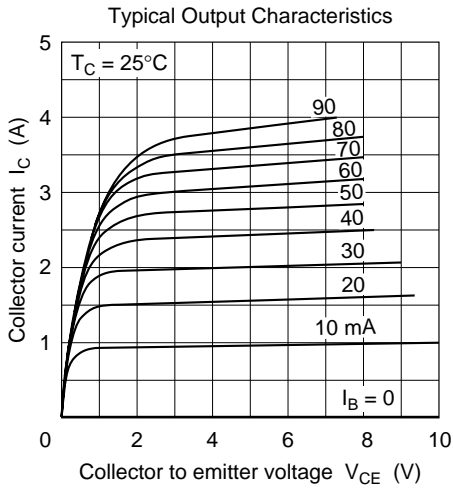
Item	Symbol	2SD1133			2SD1134			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max		
Collector to base breakdown voltage	$V_{(BR)CBO}$	70	—	—	70	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	50	—	—	60	—	—	V	$I_C = 50 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	5	—	—	V	$I_E = 10 \mu A, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	1	—	—	1	$\mu A$	$V_{CB} = 50 \text{ V}, I_E = 0$
DC current transfer ratio	$h_{FE1}^{*1}$	60	—	320	60	—	320		$V_{CE} = 4 \text{ V}, I_C = 1 \text{ A}^{*2}$
	$h_{FE2}$	35	—	—	35	—	—		$I_C = 0.1 \text{ A}^{*2}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1	—	—	1	V	$I_C = 2 \text{ A}, I_B = 0.2 \text{ A}^{*2}$
Base to emitter voltage	$V_{BE}$	—	—	1	—	—	1	V	$V_{CE} = 4 \text{ V}, I_C = 1 \text{ A}^{*2}$
Gain bandwidth product	$f_T$	—	7	—	—	7	—	MHz	$V_{CE} = 4 \text{ V}, I_C = 0.5 \text{ A}^{*2}$

Notes: 1. The 2SD1133 and 2SD1134 are grouped by  $h_{FE1}$  as follows.

2. Pulse test.

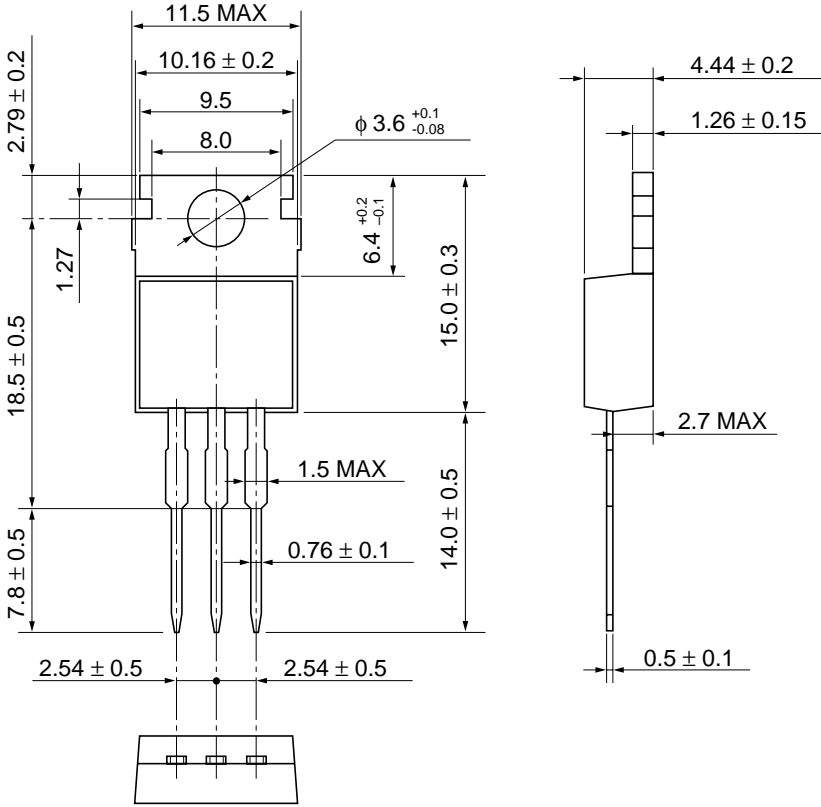
B	C	D
60 to 120	100 to 200	160 to 320





Package Dimensions

Unit: mm



Hitachi Code	TO-220AB
JEDEC	Conforms
EIAJ	Conforms
Mass (reference value)	1.8 g

## Cautions

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