

# 2SB1091

Silicon PNP Triple Diffused

# HITACHI

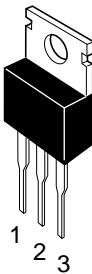
ADE-208-867 (Z)  
1st. Edition  
Sep. 2000

## Application

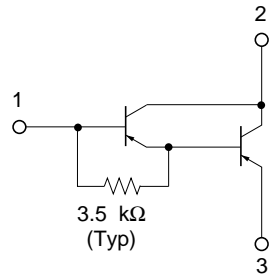
Low frequency power amplifier

## Outline

TO-220AB



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



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

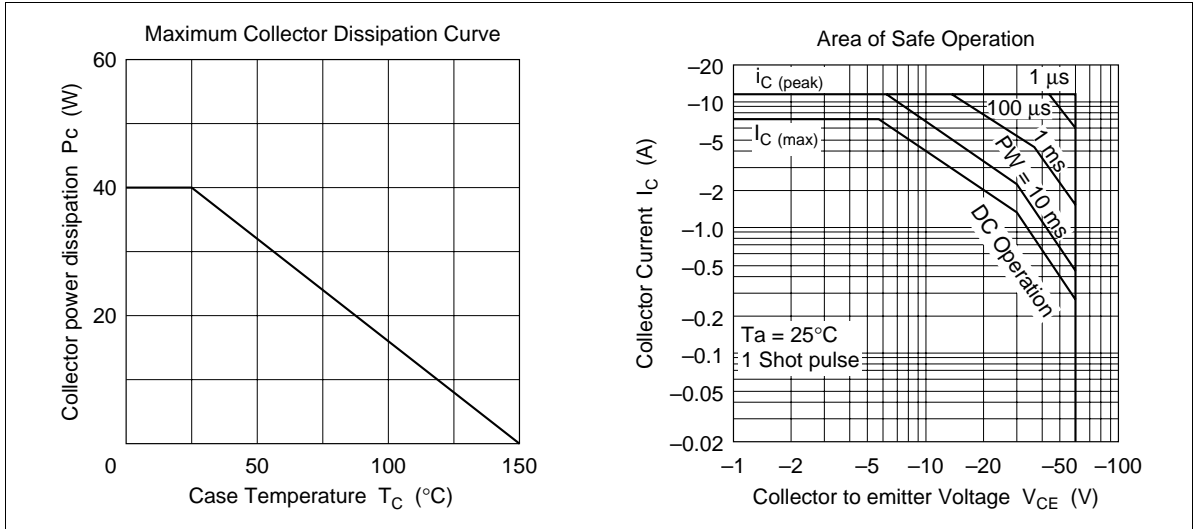
Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-60	V
Collector to emitter voltage	$V_{CEO}$	-60	V
Emitter to base voltage	$V_{EBO}$	-7	V
Collector current	$I_C$	-8	A
Collector peak current	$I_{C(peak)}$	-12	A
Collector power dissipation	$P_C^{*1}$	40	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

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

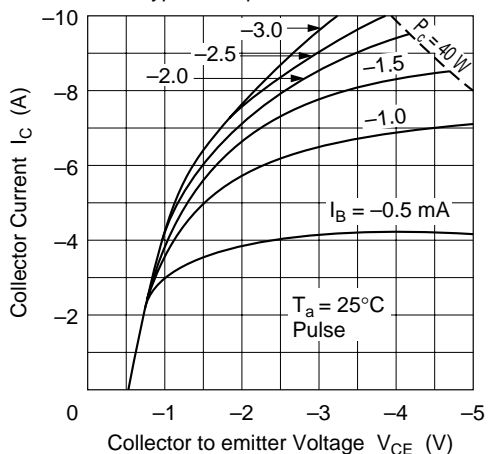
## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-60	—	—	V	$I_C = -25 \text{ mA}$ , $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-7	—	—	V	$I_E = -50 \text{ mA}$ , $I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	-100	$\mu\text{A}$	$V_{CB} = -60 \text{ V}$ , $I_E = 0$
	$I_{CEO}$	—	—	-10	$\mu\text{A}$	$V_{CE} = -50 \text{ V}$ , $R_{BE} = \infty$
DC current transfer ratio	$h_{FE}$	1000	—	20000		$V_{CE} = -3 \text{ V}$ , $I_C = -4 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)1}$	—	—	-1.5	V	$I_C = -4 \text{ A}$ , $I_B = -8 \text{ mA}^{*1}$
	$V_{CE(sat)2}$	—	—	-3.0	V	$I_C = -8 \text{ A}$ , $I_B = -80 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)1}$	—	—	-2.0	V	$I_C = -4 \text{ A}$ , $I_B = -8 \text{ mA}^{*1}$
	$V_{BE(sat)2}$	—	—	-3.5	V	$I_C = -8 \text{ A}$ , $I_B = -80 \text{ mA}^{*1}$
Turn on time	$t_{on}$	—	1.0	—	$\mu\text{s}$	$I_C = -4 \text{ A}$ , $I_{B1} = -I_{B2} = -8 \text{ mA}$
Storage time	$t_{slg}$	—	2.5	—	$\mu\text{s}$	
Fall time	$t_f$	—	0.5	—	$\mu\text{s}$	

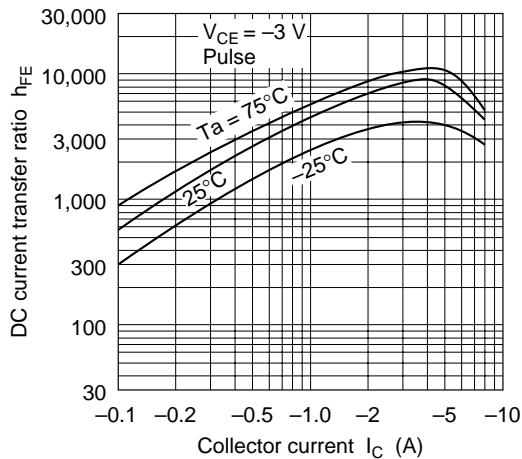
Note: 1. Pulse Test.



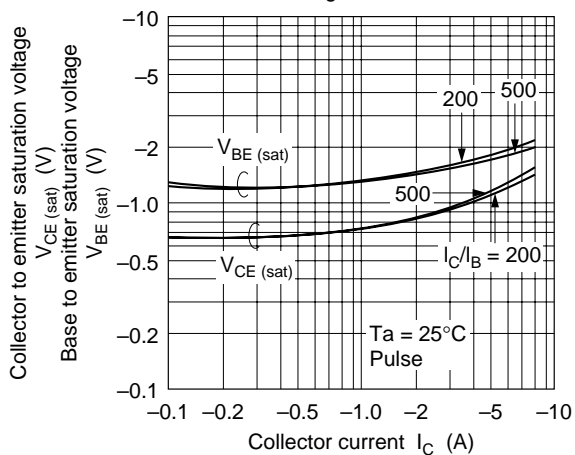
Typical Output Characteristics



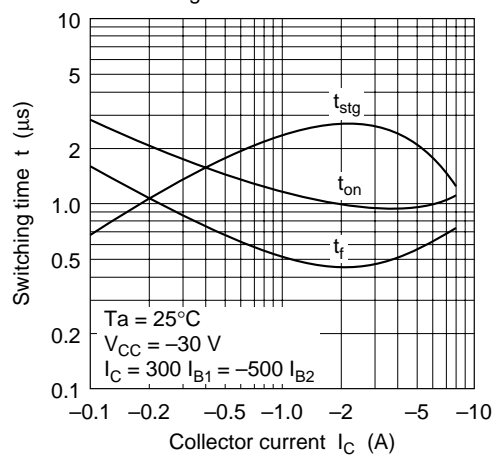
DC Current Transfer Ratio vs. Collector Current

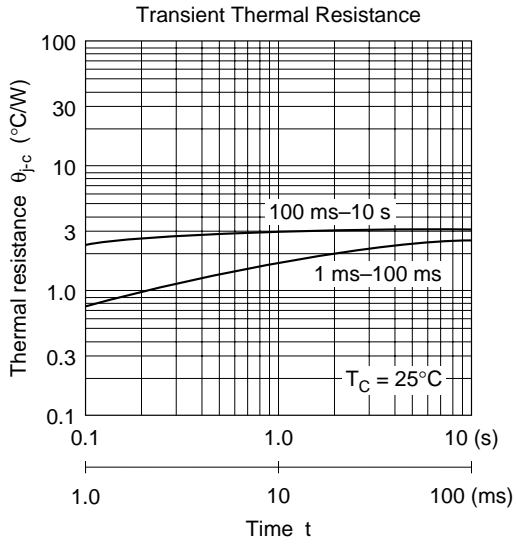


Saturation Voltage vs. Collector Current



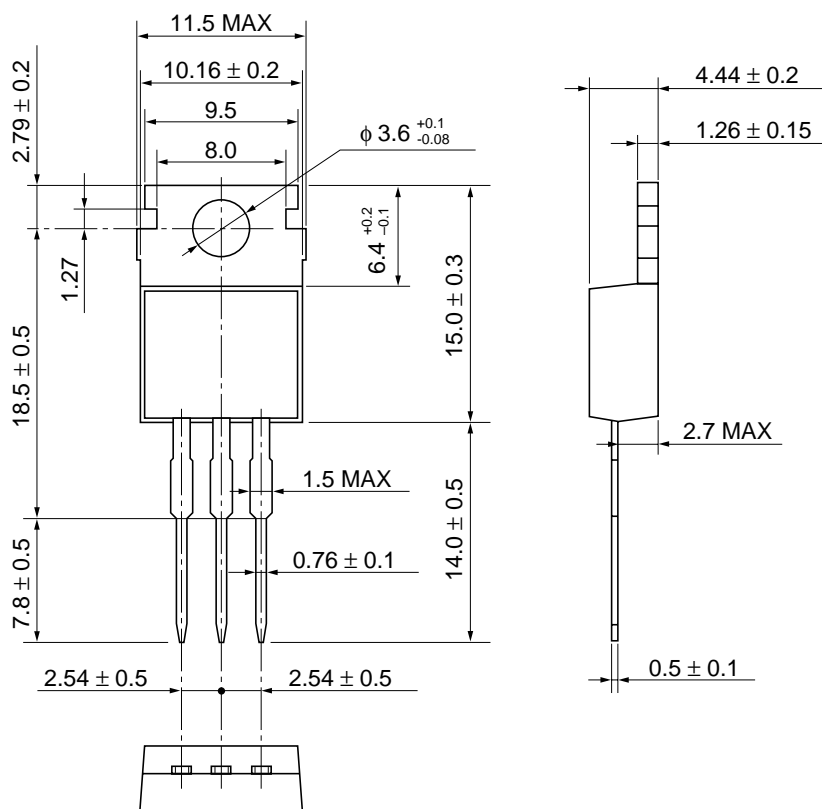
Switching Time vs. Collector Current





## Package Dimensions

Unit: mm



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

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**Hitachi, Ltd.**

Semiconductor & Integrated Circuits.  
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan  
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL      North America      : <http://semiconductor.hitachi.com/>  
              Europe                 : <http://www.hitachi-eu.com/hel/ecg>  
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**For further information write to:**

Hitachi Semiconductor  
(America) Inc.  
179 East Tasman Drive,  
San Jose, CA 95134  
Tel: <1> (408) 433-1990  
Fax: <1> (408) 433-0223

Hitachi Europe GmbH  
Electronic Components Group  
Dornacher StraÙe 3  
D-85622 Feldkirchen, Munich  
Germany  
Tel: <49> (89) 9 9180-0  
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.  
Electronic Components Group.  
Whitebrook Park  
Lower Cookham Road  
Maidenhead  
Berkshire SL6 8YA, United Kingdom  
Tel: <44> (1628) 585000  
Fax: <44> (1628) 585160

Hitachi Asia Ltd.  
Hitachi Tower  
16 Collyer Quay #20-00,  
Singapore 049318  
Tel: <65>-538-6533/538-8577  
Fax : <65>-538-6933/538-3877  
URL : <http://www.hitachi.com.sg>

Hitachi Asia Ltd.  
(Taipei Branch Office)  
4/F, No. 167, Tun Hwa North Road,  
Hung-Kuo Building,  
Taipei (105), Taiwan  
Tel: <886>-(2)-2718-3666  
Fax : <886>-(2)-2718-8180  
Telex : 23222 HAS-TP  
URL : <http://www.hitachi.com.tw>

Hitachi Asia (Hong Kong) Ltd.  
Group III (Electronic Components)  
7/F., North Tower,  
World Finance Centre,  
Harbour City, Canton Road  
Tsim Sha Tsui, Kowloon,  
Hong Kong  
Tel : <852>-(2)-735-9218  
Fax : <852>-(2)-730-0281  
URL : <http://www.hitachi.com.hk>

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