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# 2SB1688

Silicon PNP Epitaxial  
High voltage amplifier

# HITACHI

ADE-208-975A (Z)  
2nd. Edition  
Mar. 2001

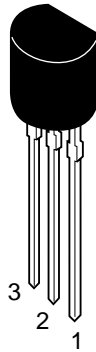
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## Features

- High breakdown voltage  
 $V_{CEO} = -300V$  min

## Outline

TO-92 (1)



1. Emitter
2. Collector
3. Base

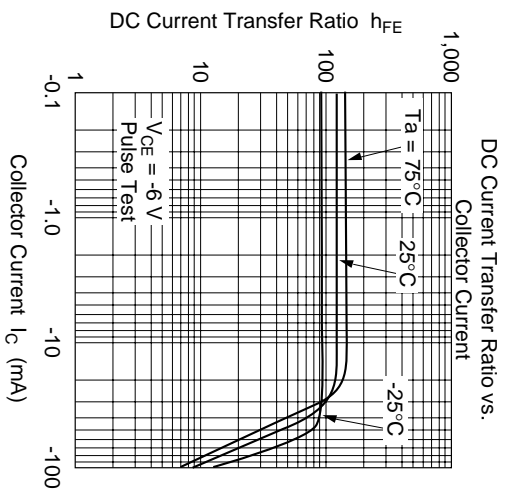
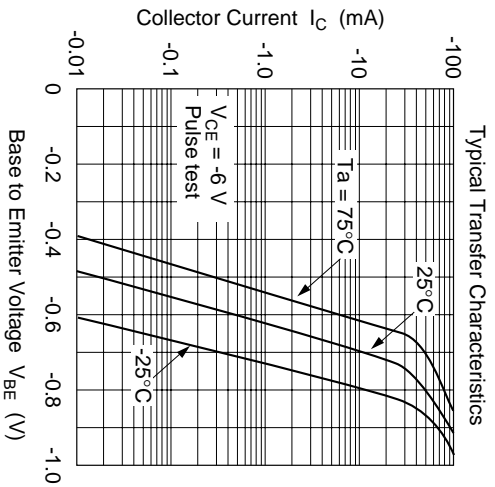
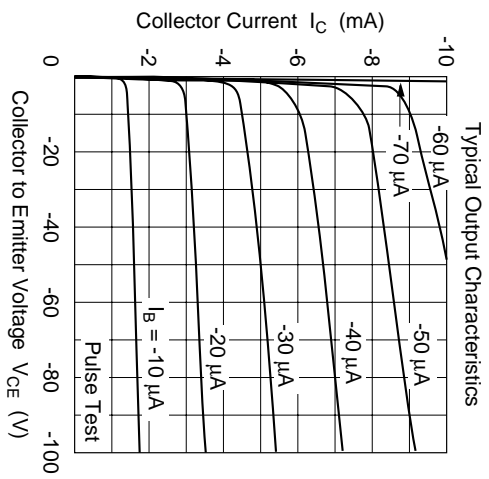
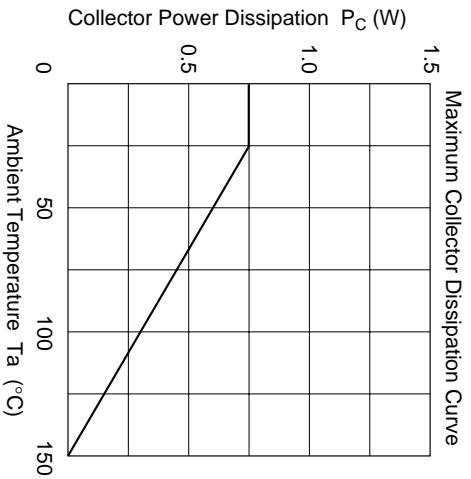
**Absolute Maximum Ratings** ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-300	V
Collector to emitter voltage	$V_{CEO}$	-300	V
Emitter to base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-50	mA
Collector power dissipation	$P_C$	750	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

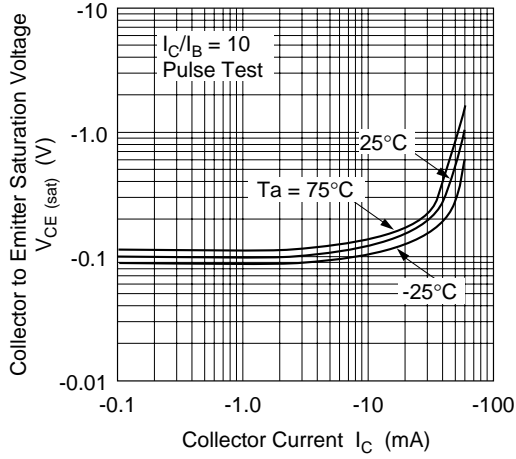
**Electrical Characteristics** ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector cutoff current	$I_{CBO}$	—	—	-0.1	$\mu\text{A}$	$V_{CB} = -300\text{V}, I_E = 0$
	$I_{CEO}$	—	—	-0.1	$\mu\text{A}$	$V_{CE} = -300\text{V}, R_{BE} = \infty$
Emitter cutoff current	$I_{EBO}$	—	—	-10	$\mu\text{A}$	$V_{EB} = -5\text{V}, I_C = 0$
Base to emitter voltage	$V_{BE}$	—	—	-0.75	V	$V_{CE} = -6\text{V}, I_C = -1\text{mA}$
DC current transfer ratio	$h_{FE}$	80	—	160	—	$V_{CE} = -6\text{V}, I_C = -2\text{mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-0.9	V	$I_C = -30\text{mA}, I_B = -3\text{mA}$

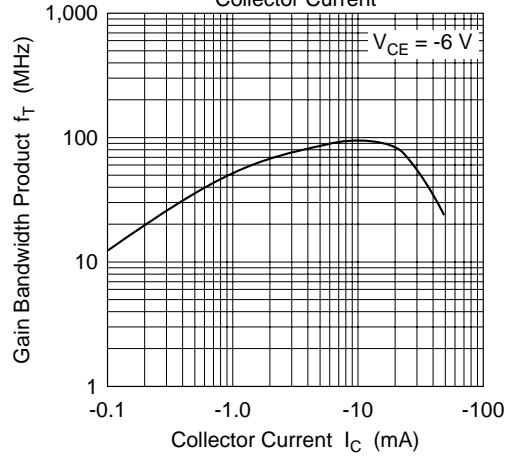
### Main Characteristics



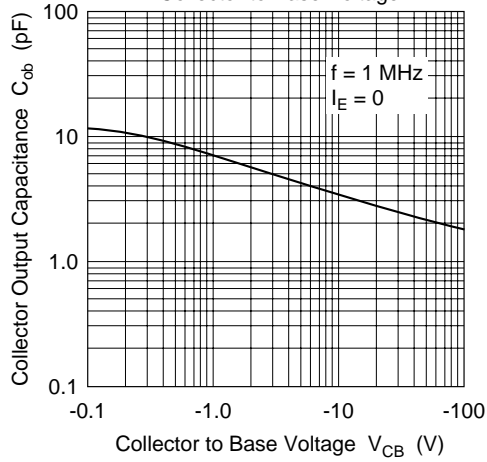
Collector to Emitter Saturation Voltage vs. Collector Current



Gain Bandwidth Product vs. Collector Current

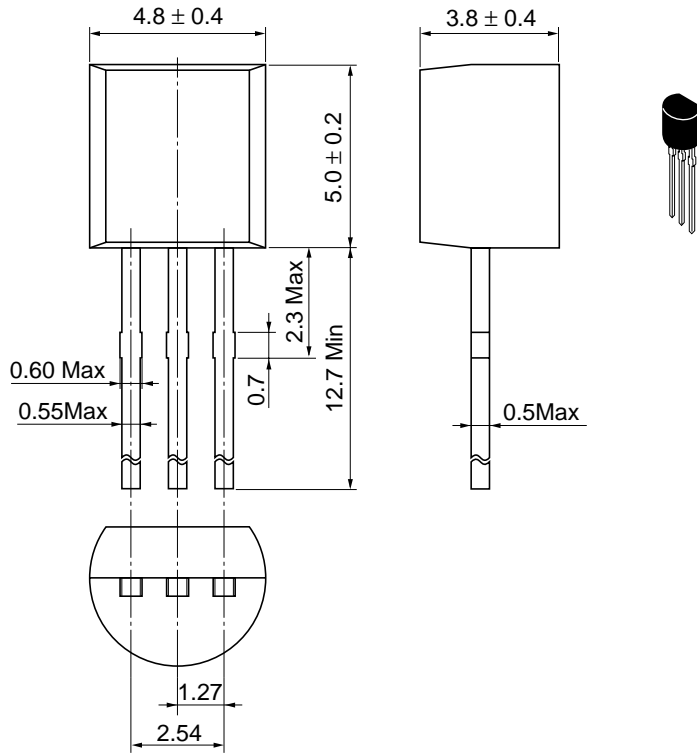


Collector Output Capacitance vs. Collector to Base Voltage



Package Dimensions

As of January, 2001  
Unit: mm



Hitachi Code	TO-92 (1)
JEDEC	Conforms
EIAJ	Conforms
Mass (reference value)	0.25 g

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