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# 2SC3957

Silicon NPN Epitaxial, Darlington

# HITACHI

ADE-208-1094 (Z)

1st. Edition

Mar. 2001

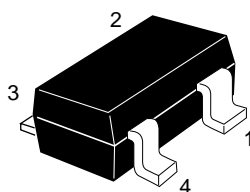
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## Application

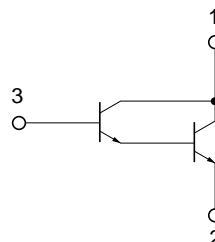
High gain amplifier

## Outline

MPAK-4



- 1. Collector
- 2. Emitter
- 3. Base
- 4. NC



Absolute Maximum Ratings (Ta = 25°C)

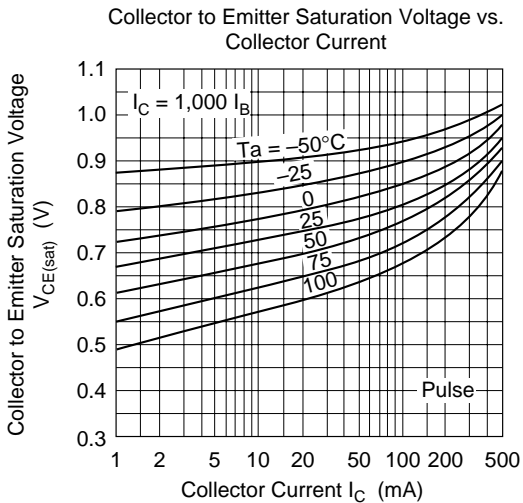
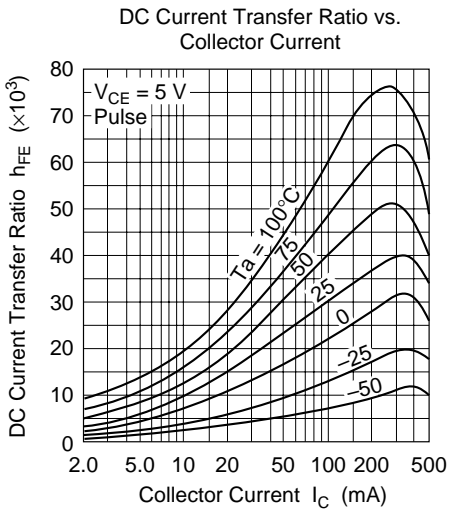
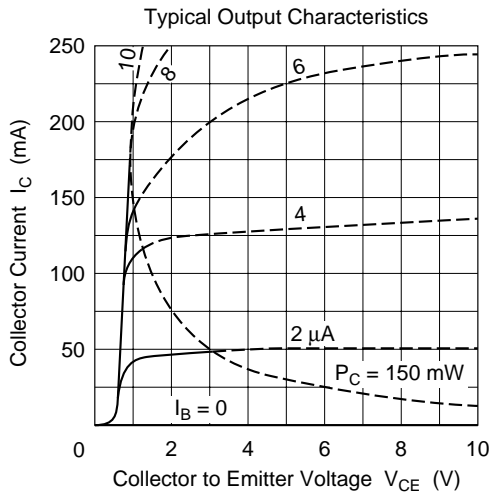
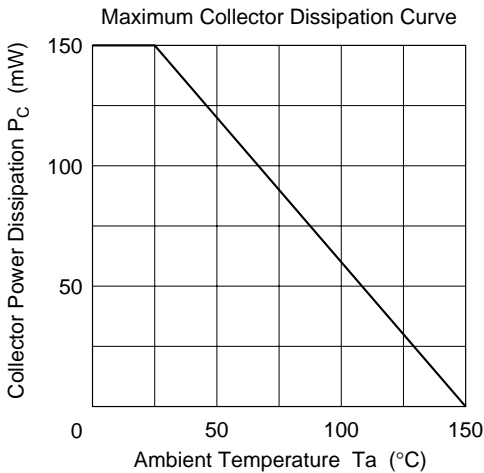
Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	40	V
Collector to emitter voltage	$V_{CEO}$	30	V
Emitter to base voltage	$V_{EBO}$	10	V
Collector current	$I_C$	300	mA
Collector peak current	$I_{C\ (peak)}$	500	mA
Collector power dissipation	$P_C$	150	mW
Junction temperature	$T_j$	150	°C
Storage temperature	Tstg	−55 to +150	°C

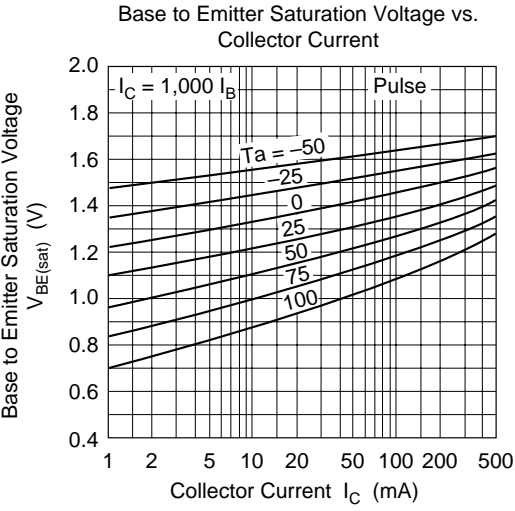
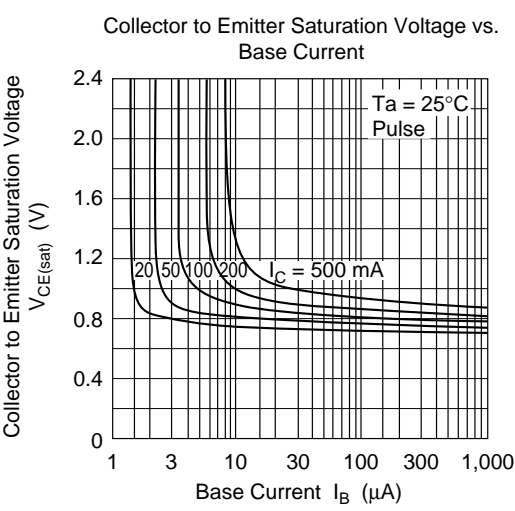
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	30	—	—	V	$I_C = 1\ \text{mA}, R_{BE} = \infty$
Collector cutoff current	$I_{CBO}$	—	—	100	nA	$V_{CB} = 30\ \text{V}, I_E = 0$
Emitter cutoff current	$I_{EBO}$	—	—	100	nA	$V_{EB} = 10\ \text{V}, I_C = 0$
DC current transfer ratio	$h_{FE1}^{*1}$	2000	—	100000		$I_C = 10\ \text{mA}, V_{CE} = 5\ \text{V}^{*2}$
	$h_{FE2}^{*1}$	3000	—	—		$I_C = 100\ \text{mA}, V_{CE} = 5\ \text{V}^{*2}$
	$h_{FE3}^{*1}$	3000	—	—		$I_C = 400\ \text{mA}, V_{CE} = 5\ \text{V}^{*2}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	$I_C = 100\ \text{mA}, I_B = 0.1\ \text{mA}^{*2}$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	2.0	V	$I_C = 100\ \text{mA}, I_B = 0.1\ \text{mA}^{*2}$

Notes: 1. The 2SC3957 is grouped by  $h_{FE}$  as follows.  
2. Pulse test

Mark	GIA	GIB
$h_{FE1}$	2000 to 100000	5000 to 100000
$h_{FE2}$	3000 min	10000 min
$h_{FE3}$	3000 min	10000 min







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