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# 2SC3957

Silicon NPN Epitaxial, Darlington

# HITACHI

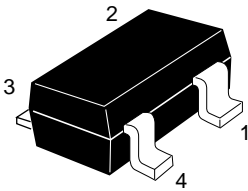
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## Application

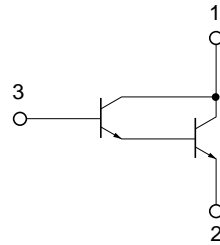
High gain amplifier

## 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	$T_{stg}$	-55 to +150	°C

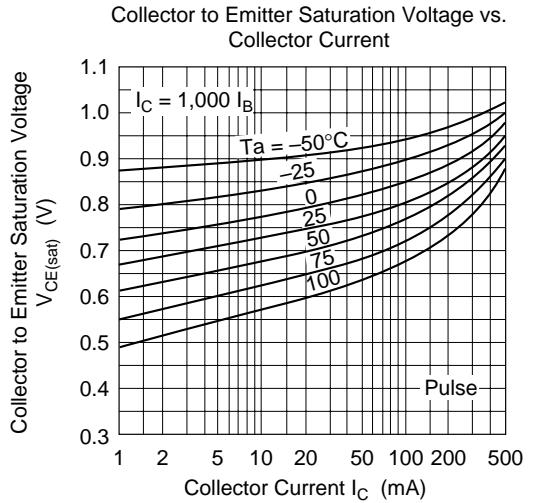
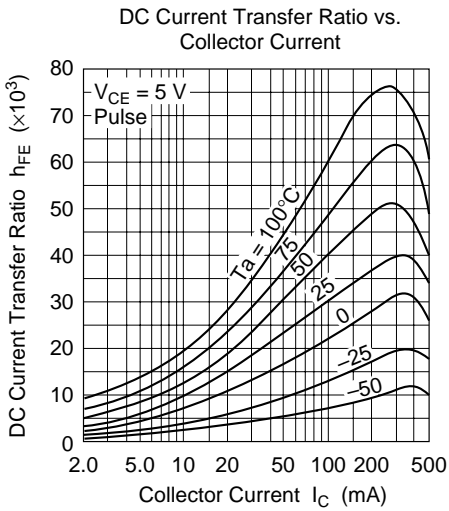
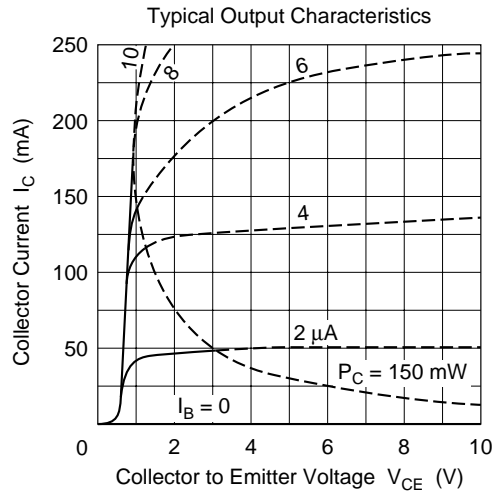
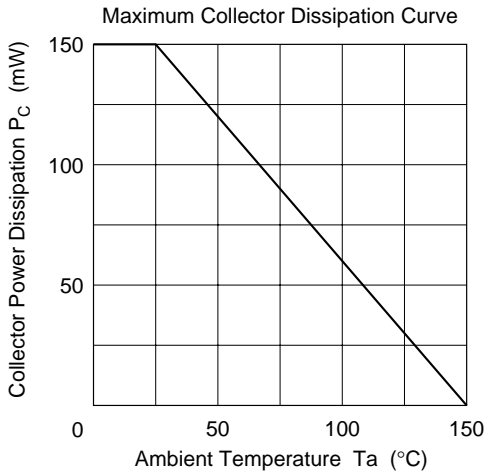
## Electrical Characteristics (Ta = 25°C)

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	$I_C = 100 \text{ mA}$ , $I_B = 0.1 \text{ mA}^{*2}$

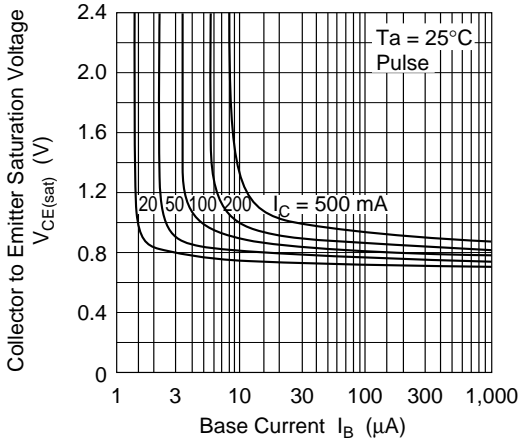
Notes: 1. The 2SC3957 is grouped by  $h_{FE}$  as follows.

2. Pulse test

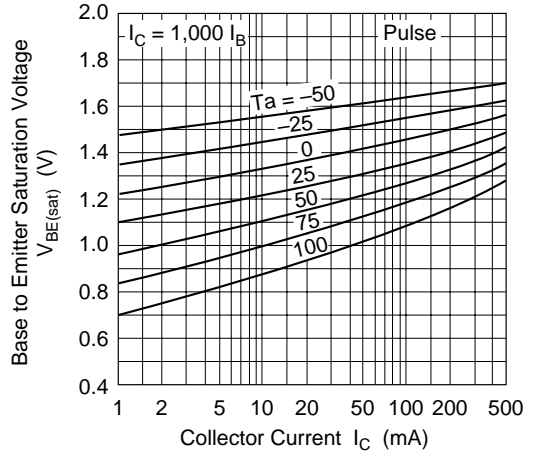
Mark	GIA	GIB
$h_{FE1}$	2000 to 100000	5000 to 100000
$h_{FE2}$	3000 min	10000 min
$h_{FE3}$	3000 min	10000 min

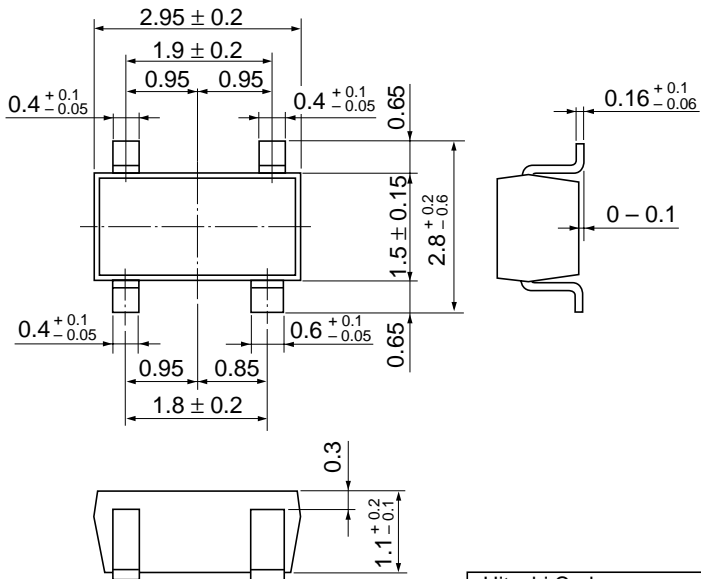


Collector to Emitter Saturation Voltage vs. Base Current



Base to Emitter Saturation Voltage vs. Collector Current





Hitachi Code	MPAK-4
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.013 g

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