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# 2SC3391

Silicon NPN Epitaxial Planar

# HITACHI

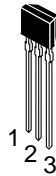
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## Application

VHF amplifier, Mixer, Local oscillator

## Outline

SPAK



1. Emitter
2. Collector
3. Base

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

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	30	V
Collector to emitter voltage	$V_{CEO}$	20	V
Emitter to base voltage	$V_{EBO}$	4	V
Collector current	$I_C$	20	mA
Collector power dissipation	$P_C$	200	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

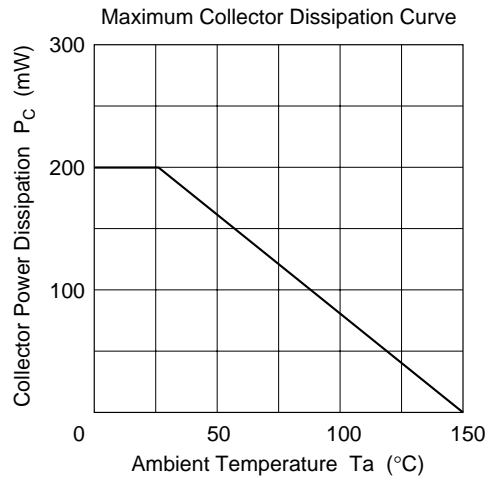
## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	30	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	20	—	—	V	$I_C = 1 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	4	—	—	V	$I_E = 10 \mu A, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	0.5	$\mu A$	$V_{CB} = 10 \text{ V}, I_E = 0$
DC current transfer ratio	$h_{FE}^{*1}$	60	—	200		$V_{CE} = 6 \text{ V}, I_C = 1 \text{ mA}$
Base to emitter voltage	$V_{BE}$	—	0.72	—	V	$V_{CE} = 6 \text{ V}, I_C = 1 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	0.17	—	V	$I_C = 20 \text{ mA}, I_B = 4 \text{ mA}$
Gain bandwidth product	$f_T$	450	940	—	MHz	$V_{CE} = 6 \text{ V}, I_C = 5 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	0.9	1.2	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$
Power gain	PG	17	20	—	dB	$V_{CE} = 6 \text{ V}, I_C = 1 \text{ mA}, f = 100 \text{ MHz}$
Noise figure	NF	—	3.5	5.5	dB	$V_{CE} = 6 \text{ V}, I_C = 1 \text{ mA}, R_g = 50 \Omega, f = 100 \text{ MHz}$

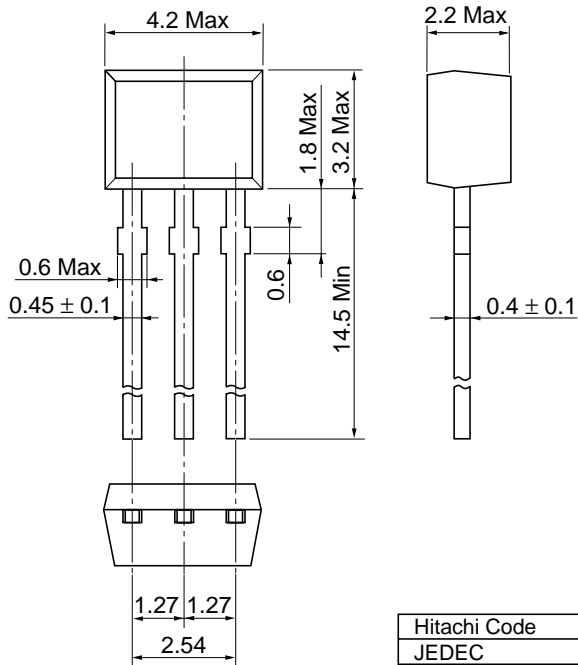
Note: 1. The 2SC3391 is grouped by  $h_{FE}$  as follows.

B	C
60 to 120	100 to 200

See characteristic curves of 2SC535.



Unit: mm



Hitachi Code	SPAK
JEDEC	—
EIAJ	—
Weight (reference value)	0.10 g

## Cautions

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