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# 2SC3836

Silicon NPN Epitaxial

# HITACHI

ADE-208-1092 (Z)  
1st. Edition  
Mar. 2001

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## Application

Low frequency amplifier, switching

## Outline

SPAK



1. Emitter
2. Collector
3. Base

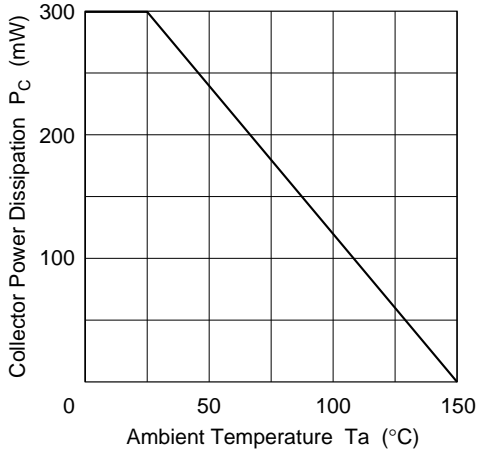
**Absolute Maximum Ratings** ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{\text{CBO}}$	60	V
Collector to emitter voltage	$V_{\text{CEO}}$	50	V
Emitter to base voltage	$V_{\text{EBO}}$	15	V
Collector current	$I_{\text{C}}$	300	mA
Collector power dissipation	$P_{\text{C}}$	300	mW
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

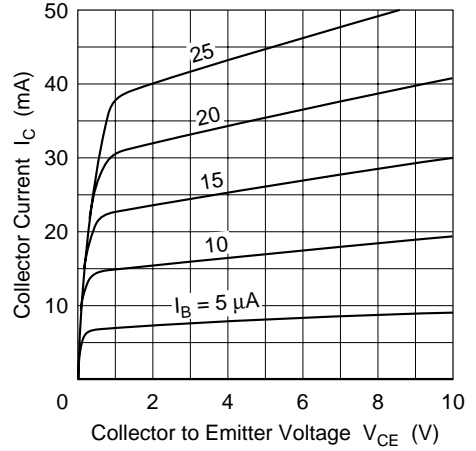
**Electrical Characteristics** ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	60	—	—	V	$I_{\text{C}} = 10 \mu\text{A}$ , $I_{\text{E}} = 0$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	50	—	—	V	$I_{\text{C}} = 1 \text{ mA}$ , $R_{\text{BE}} = \infty$
Emitter to base breakdown voltage	$V_{(\text{BE})\text{EBO}}$	15	—	—	V	$I_{\text{E}} = 10 \mu\text{A}$ , $I_{\text{C}} = 0$
Collector cutoff current	$I_{\text{CBO}}$	—	—	1	$\mu\text{A}$	$V_{\text{CB}} = 50 \text{ V}$ , $I_{\text{E}} = 0$
Base to emitter voltage	$V_{\text{BE}}$	—	—	0.75	V	$V_{\text{CE}} = 6 \text{ V}$ , $I_{\text{C}} = 1 \text{ mA}$
DC current transfer ratio	$h_{\text{FE1}}$	800	—	2000		$V_{\text{CE}} = 6 \text{ V}$ , $I_{\text{C}} = 100 \text{ mA}$ (pulse test)
	$h_{\text{FE2}}$	500	—	—		$V_{\text{CE}} = 6 \text{ V}$ , $I_{\text{C}} = 1 \text{ mA}$
Collector to emitter saturation voltage	$V_{\text{CE(sat)}}$	—	—	0.3	V	$I_{\text{C}} = 300 \text{ mA}$ , $I_{\text{B}} = 30 \text{ mA}$ (pulse test)

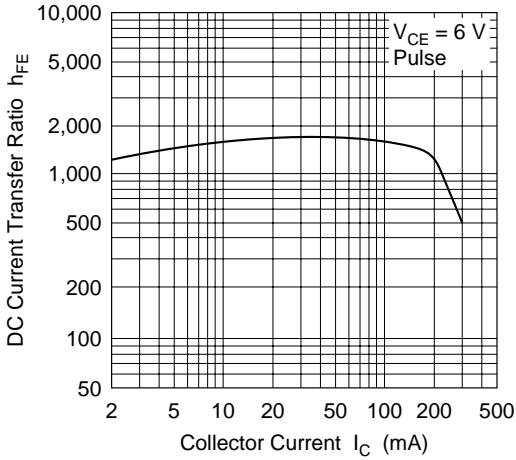
Maximum Collector Dissipation Curve



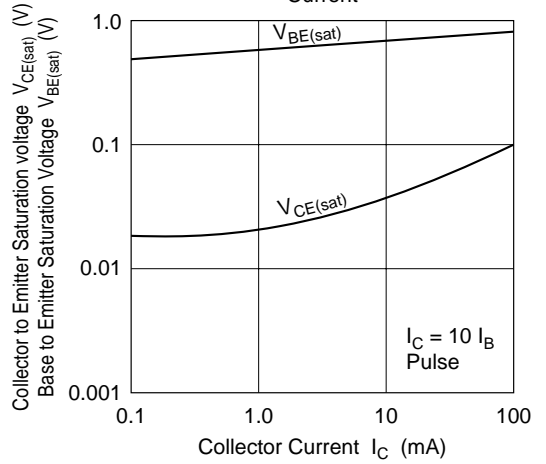
Typical Output Characteristics



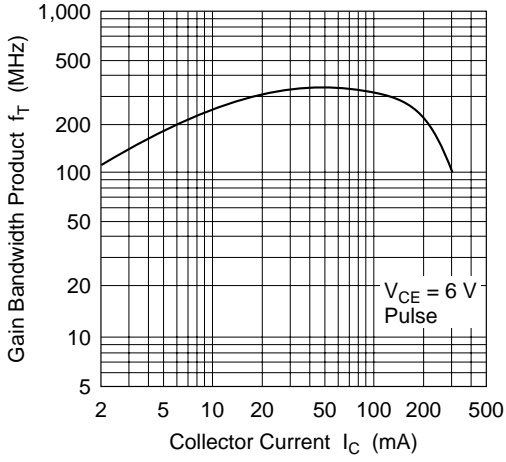
DC Current Transfer Ratio vs. Collector Current



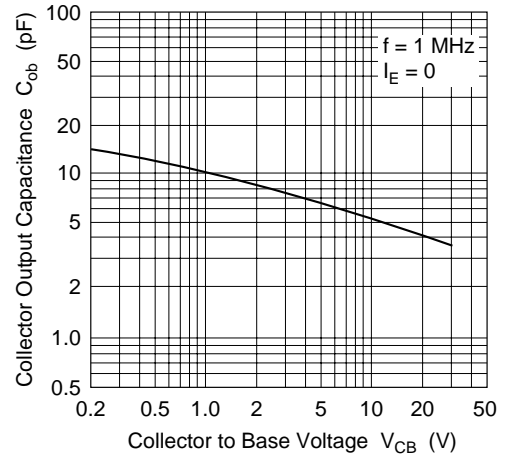
Saturation Voltage vs. Collector Current



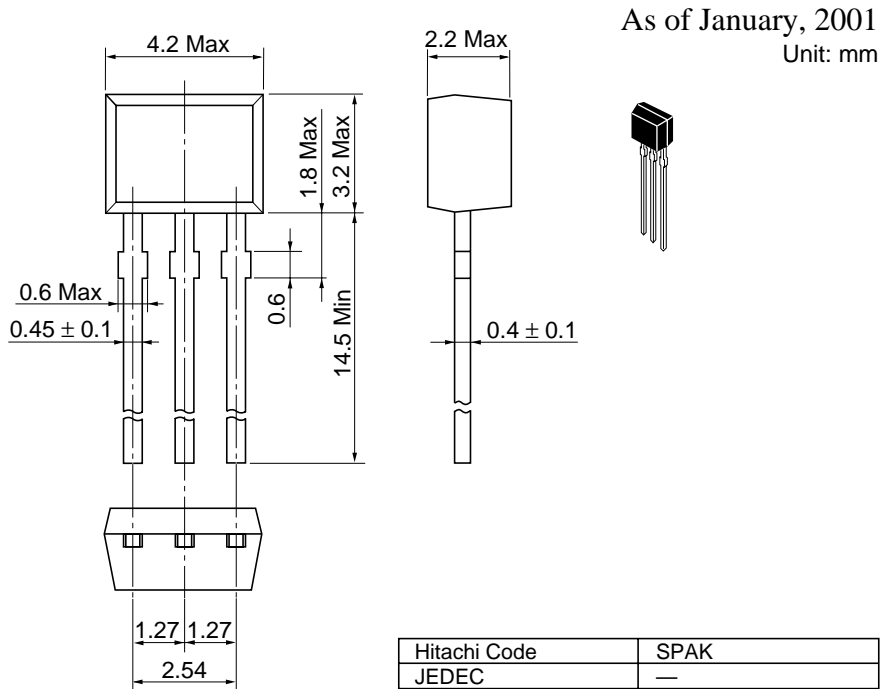
Gain Bandwidth Product vs. Collector Current



Collector Output Capacitance vs. Collector to Base Voltage



## Package Dimensions



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