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# 2SA1810

Silicon PNP Epitaxial

# HITACHI

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## Application

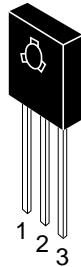
High frequency amplifier

## Features

- Excellent high frequency characteristics  
 $f_T = 300$  MHz typ
- High voltage and low output capacitance  
 $V_{CEO} = -200$  V,  $C_{ob} = 5.0$  pF typ
- Suitable for wide band video amplifier

## Outline

TO-126 MOD



1. Emitter
2. Collector
3. Base

# 2SA1810

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

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-200	V
Collector to emitter voltage	$V_{CEO}$	-200	V
Emitter to base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-0.2	A
Collector peak current	$I_{C(peak)}$	-0.5	A
Collector power dissipation	$P_C$	1.25	W
	$P_C^{*1}$	10	
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

Note: 1. Value at  $T_C = 25^\circ\text{C}$ .

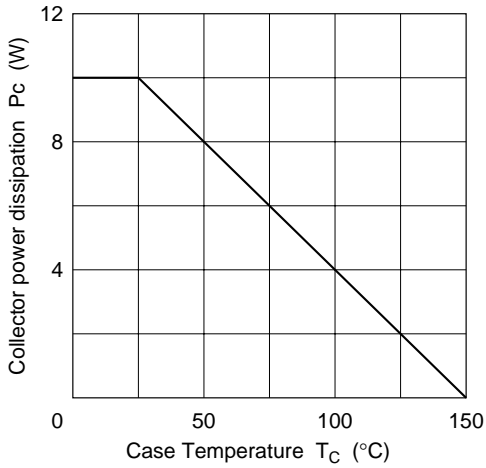
## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	-200	—	—	V	$I_C = -10 \mu\text{A}$ , $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-200	—	—	V	$I_C = -1 \text{ mA}$ , $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_E = -10 \mu\text{A}$ , $I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	-10	$\mu\text{A}$	$V_{CB} = -160 \text{ V}$ , $I_E = 0$
DC current transfer ratio	$h_{FE}^{*1}$	60	—	200		$V_{CE} = -5 \text{ V}$ , $I_C = -10 \text{ mA}$
Base to emitter voltage	$V_{BE}$	—	—	-1.0	V	$V_{CE} = -5 \text{ V}$ , $I_C = -30 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-1.0	V	$I_C = -30 \text{ mA}$ , $I_B = -3 \text{ mA}$
Gain bandwidth product	$f_T$	200	300	—	MHz	$V_{CE} = -20 \text{ V}$ , $I_C = -30 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	5.0	—	pF	$V_{CB} = -30 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$

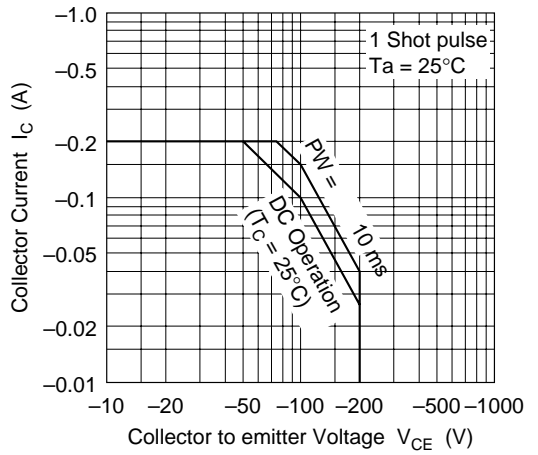
Note: 1. The 2SA1810 is grouped by  $h_{FE}$  as follows.

B	C
60 to 120	100 to 200

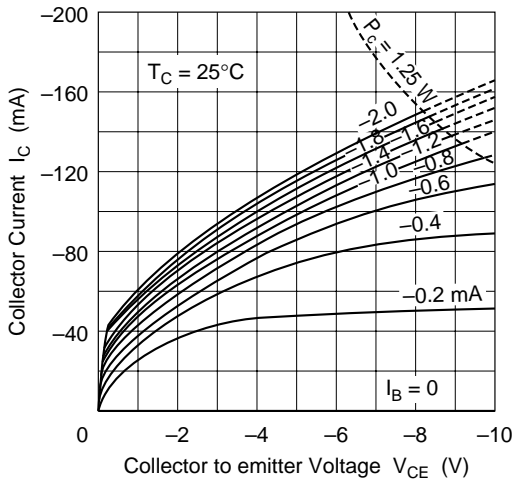
Maximum Collector Dissipation Curve



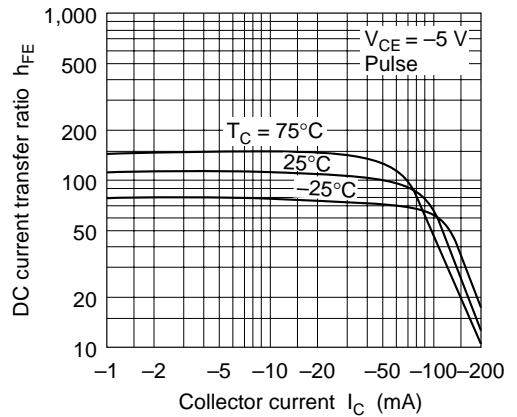
Area of Safe Operation



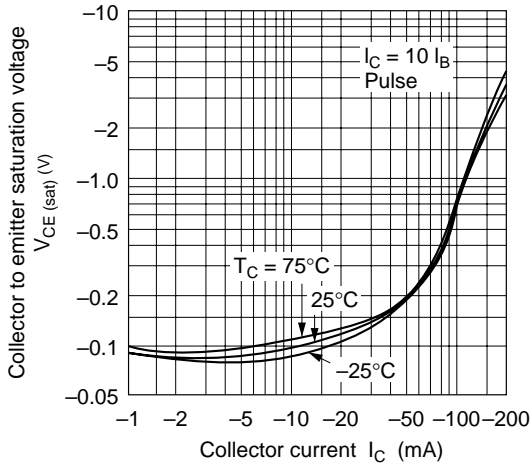
Typical Output Characteristics



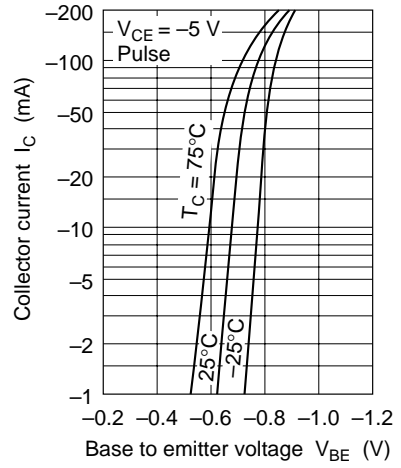
DC Current Transfer Ratio vs. Collector Current



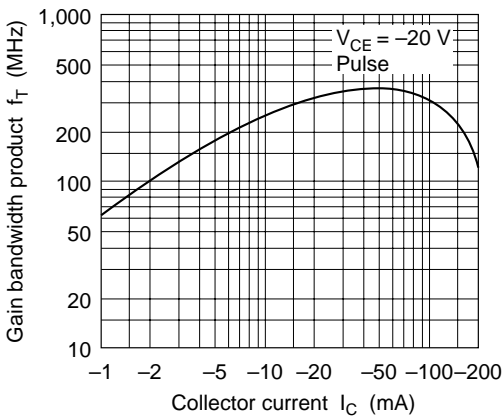
Collector to Emitter Saturation Voltage vs. Collector Current



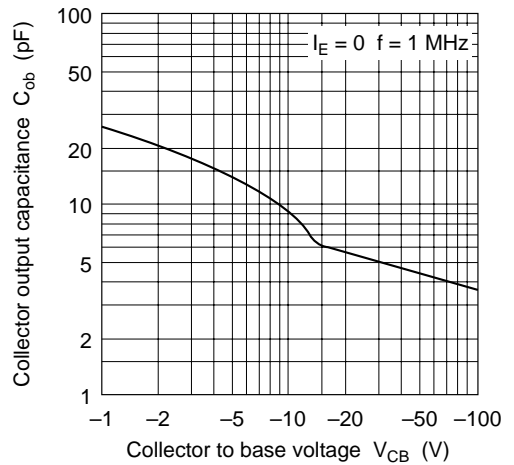
Typical Transfer Characteristics

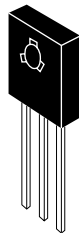
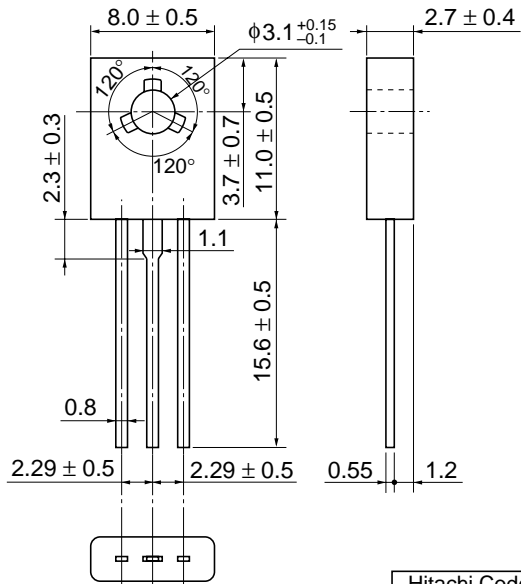


Gain Bandwidth Product vs. Collector Current



Collector Output Capacitance Collector to Base Voltage





Hitachi Code	TO-126 Mod
JEDEC	—
EIAJ	—
Weight (reference value)	0.67 g

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