HITACHI

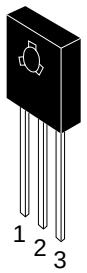
2SA1810

Silicon PNP Epitaxial
High Frequency Amplifier

Feature

- Excellent high frequency characteristics
  f_T = 300 MHz typ
- High voltage and low output capacitance
  V_{CEO} = –200 V, Cob = 5.0 pF typ
- Suitable for wide band video amplifier
- Complementary pair of 2SC4704

TO-126 MOD



1. Emitter
2. Collector
3. Base

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	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	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: 1. Value at T_C = 25°C.

Electrical Characteristics (Ta = 25°C)

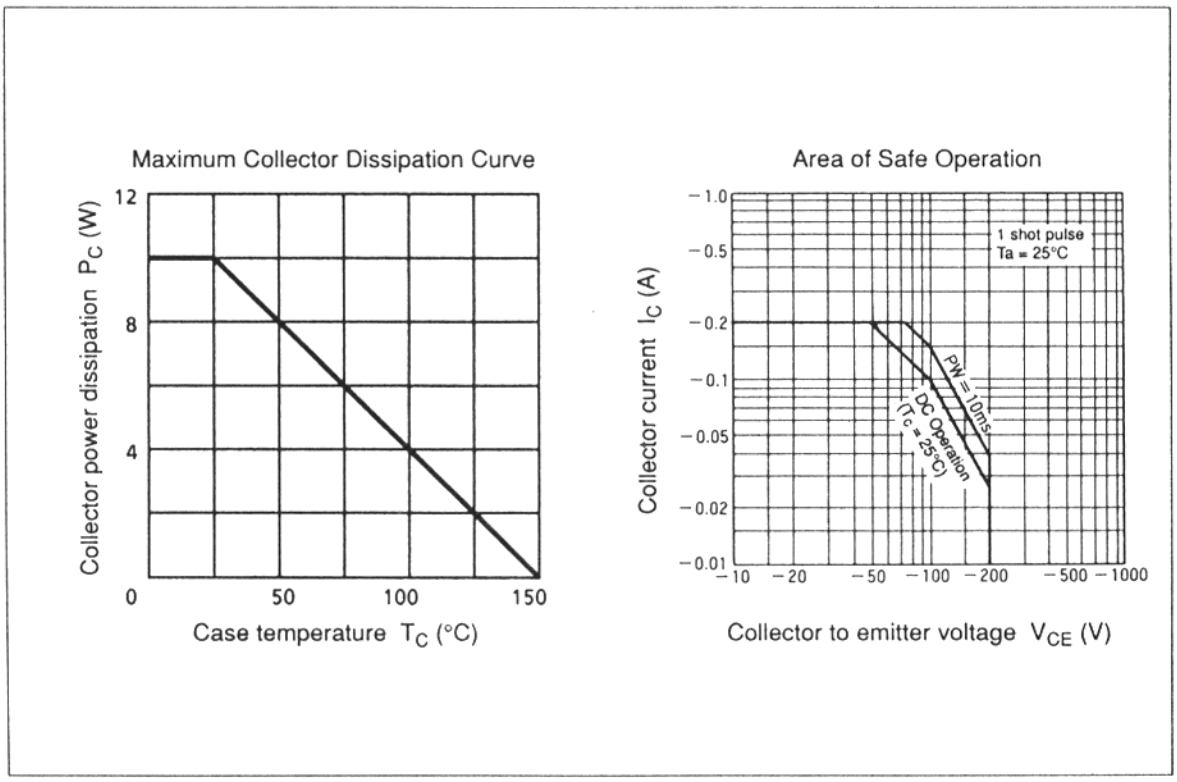
Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to base breakdown voltage	$V_{(BR)CBO}$	–200	—	—	V	I_C = –10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–200	—	—	V	I_C = –1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–5	—	—	V	I_E = –10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	–10	µA	V_{CB} = –160 V, I_E = 0
DC current transfer ratio	h_{FE}*1	60	—	200		V_{CE} = –5 V, I_C = –10 mA
Base to emitter voltage	V_{BE}	—	—	–1.0	V	V_{CE} = –5 V, I_C = –30 mA

Electrical Characteristics (Ta = 25°C) (cont)

Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	–1.0	V	I_C = –30 mA, I_B = –3 mA
Gain bandwidth product	f_T	200	300	—	MHz	V_{CE} = –20 V, I_C = –30 mA
Collector output capacitance	Cob	—	5.0	—	pF	V_{CB} = –30 V, I_E = 0, f = 1MHz

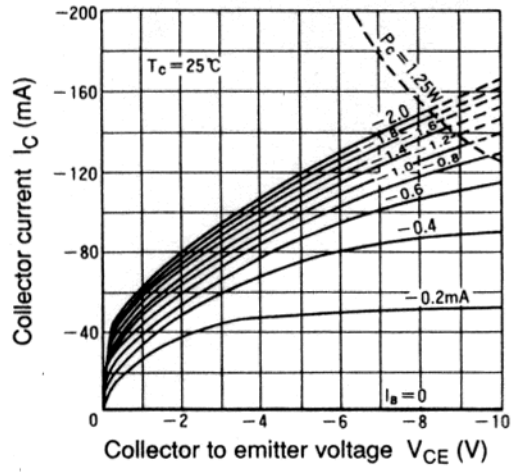
Note: 1. The 2SA1810 is grouped by h_{FE} as follows.

B	C
60 to 120	100 to 200

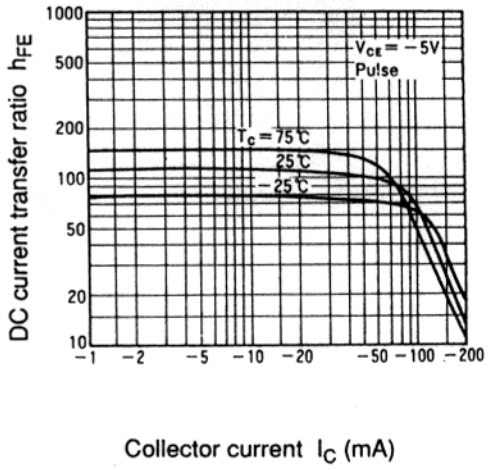


2SA1810

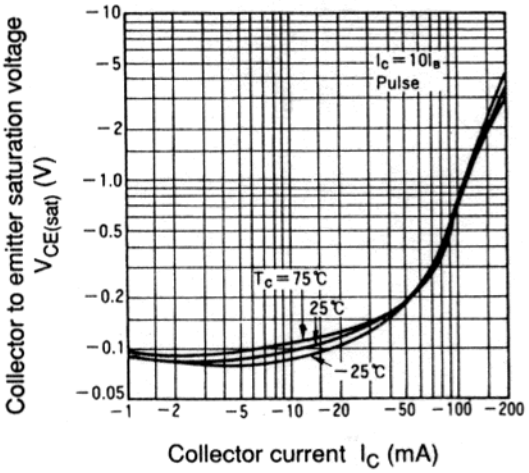
Typical Output Characteristics



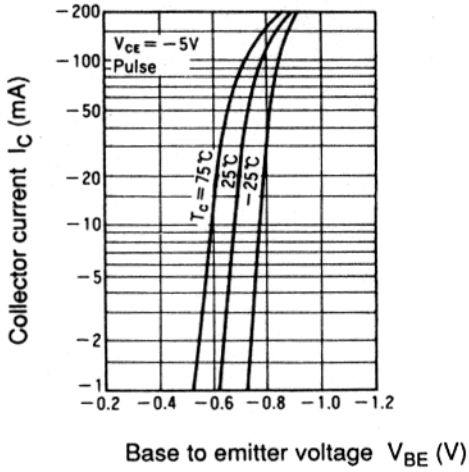
DC Current Transfer Ratio vs. Collector Current



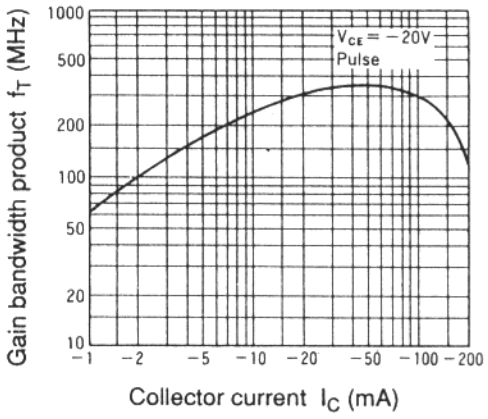
Collector to Emitter Saturation Voltage vs. Collector Current



Typical Transfer Characteristics



Gain Bandwidth Product vs. Collector Current



Collector Output Capacitance vs. Collector to Base Voltage