

## 2SC4704

### Silicon NPN Epitaxial High Frequency Amplifier

#### Feature

- 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
- Complementary pair of 2SA1810

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

Item	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	200	V
Collector to emitter voltage	$V_{CEO}$	200	V
Emitter to base voltage	$V_{EBO}$	4	V
Collector current	$I_C$	0.2	A
Collector peak current	$i_{C(\text{peak})}$	0.5	A
Collector power dissipation	$P_C$	1.25	W
	$P_C^{*1}$	10	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

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

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

Item	Symbol	Min	Typ	Max	Unit	Test condition
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	$V_{(BR)EBO}$	4	—	—	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	$V_{CE} = 5 \text{ V}$ , $I_C = 30 \text{ mA}$

TO-126 MOD



1. Emitter
2. Collector
3. Base

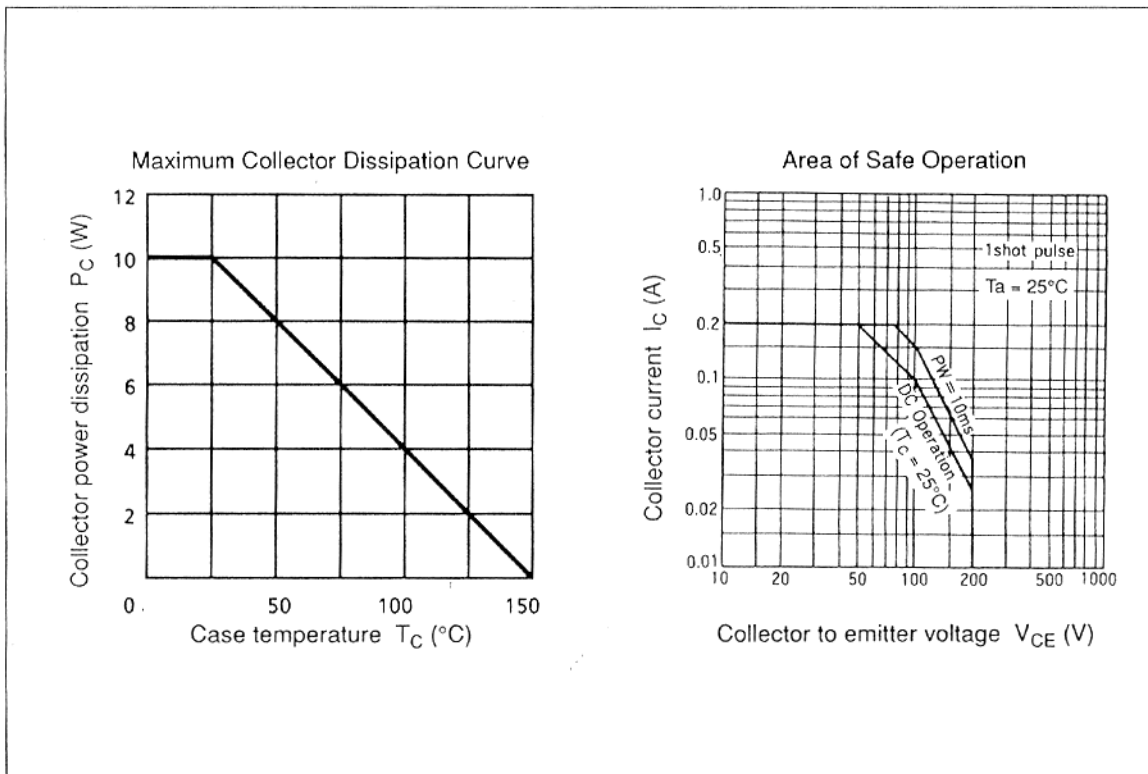
## 2SC4704

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

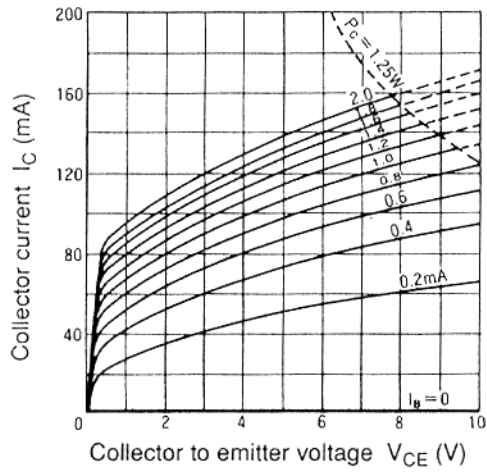
Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	$I_C = 30 \text{ mA}, I_B = 3 \text{ mA}$
Gain bandwidth product	$f_T$	200	300	—	MHz	$V_{CE} = 20 \text{ V}, I_C = 30 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	5.0	—	pF	$V_{CB} = 30 \text{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

Note: 1. The 2SC4704 is grouped by  $h_{FE}$  and its specification is as follows.

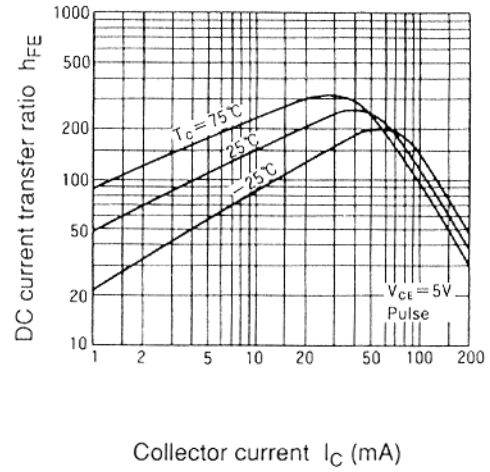
B	C
60 to 120	100 to 200



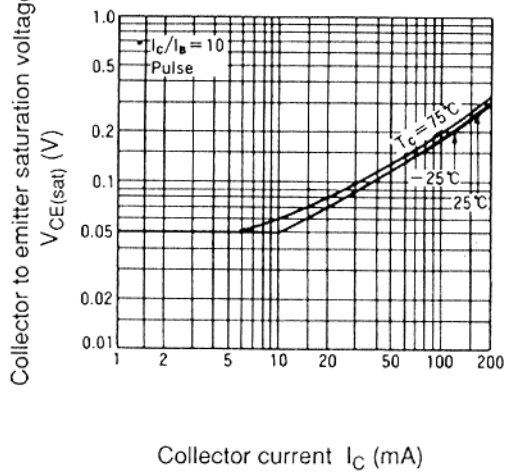
Typical Output Characteristics



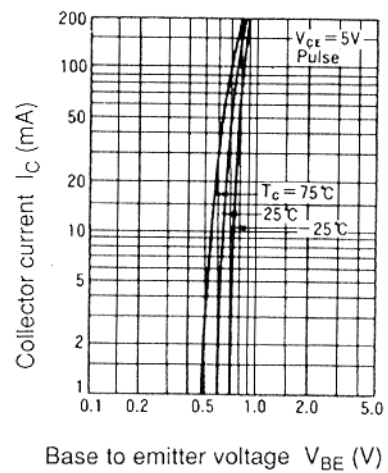
DC Current Transfer Ratio vs. Collector Current



Collector to Emitter Saturation Voltage vs. Collector Current



Typical Transfer Characteristics



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