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# 2SC5023

Silicon NPN Epitaxial

## HITACHI

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### Application

High frequency amplifier

### Features

- Excellent high frequency characteristics  $f_T = 1000$  MHz typ
- High breakdown voltage and low output capacitance  $V_{CE0} = 100$  V,  $C_{ob} = 4.5$  pF typ
- Suitable for wide band video amplifier

### Outline

TO-126FM



1. Emitter
2. Collector
3. Base

## 2SC5023

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

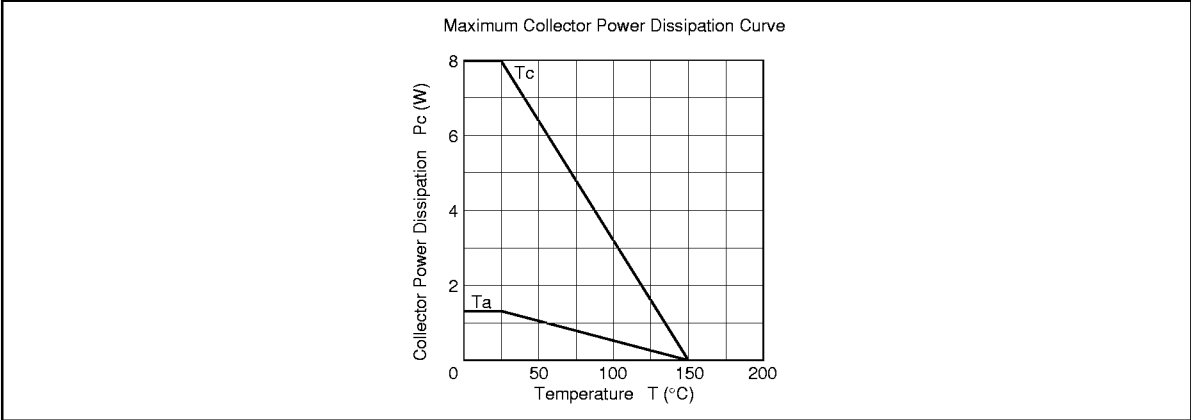
Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	100	V
Collector to emitter voltage	$V_{CEO}$	100	V
Emitter to base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	0.2	A
Collector peak current	$I_{C(peak)}$	0.5	A
Collector power dissipation	$P_C$	1.25	W
	$P_C^{*1}$	8	
Junction temperature	$T_j$	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	$V_{(BR)CBO}$	100	—	—	V	$I_C = 10 \mu\text{A}$ , $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	100	—	—	V	$I_C = 1 \text{ mA}$ , $R_{BE} = \infty$
Collector cutoff current	$I_{CBO}$	—	—	1.0	$\mu\text{A}$	$V_{CB} = 80 \text{ V}$ , $I_E = 0$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu\text{A}$	$V_{EB} = 3 \text{ V}$ , $I_C = 0$
DC current transfer ratio	2SC5023B $h_{FE}$	60	—	120		$V_{CE} = 10 \text{ V}$ , $I_C = 10 \text{ mA}$
	2SC5023C $h_{FE}$	100	—	200		
Base to emitter voltage	$V_{BE}$	—	—	1.0	V	$V_{CE} = 10 \text{ V}$ , $I_C = 10 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	$I_C = 100 \text{ mA}$ , $I_B = 10 \text{ mA}$
Gain bandwidth product	$f_T$	800	1000	—	MHz	$V_{CE} = 20 \text{ V}$ , $I_C = 100 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	4.5	6.0	pF	$V_{CB} = 30 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$

See characteristic curves of 2SC4708.



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