

## 2SC5023

Silicon NPN Epitaxial

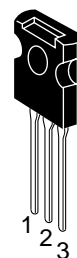
### Application

High frequency amplifier

### Features

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

TO-126FM



1. Emitter  
 2. Collector  
 3. Base

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

Item	Symbol	Rating	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	$i_{c(\text{peak})}$	0.5	A
Collector power dissipation	$P_C$	1.25	W
Collector power dissipation	$P_C^{*1}$	8	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

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

## 2SC5023

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

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	100	—	—	V	$I_C = 10 \mu A$ , $I_E = 0$
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	$\mu A$	$V_{CB} = 80 \text{ V}$ , $I_E = 0$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu A$	$V_{EB} = 3 \text{ V}$ , $I_C = 0$
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	$V_{CE} = 20 \text{ V}$ , $I_C = 100 \text{ mA}$
Capacitor 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.

