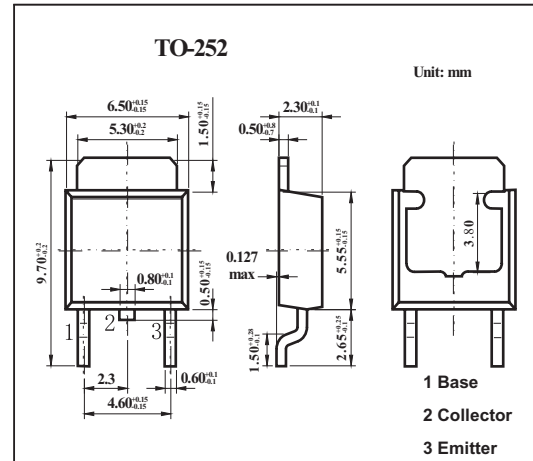


## Silicon NPN Epitaxial

## 2SC4684



### ■ Features

- High DC current gain.
- Low collector saturation voltage.
- High power dissipation.

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

Parameter	Symbol	Rating	Unit	
Collector-base voltage	$V_{CB0}$	50	V	
Collector-emitter voltage	$V_{CE0}$	20	V	
	$V_{CES}$	40	V	
Emitter-base voltage	$V_{EB0}$	8	V	
Collector current	$I_C$	5	A	
Collector current pulse *	$I_{CP}$	8	A	
Base current	$I_B$	0.5	A	
Collector power dissipation	$P_C$	$T_a = 25^\circ\text{C}$	1.0	W
		$T_c = 25^\circ\text{C}$	10	W
Junction temperature	$T_j$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$	

\* Pulse test: Pulse width = 10 ms (max), duty cycle = 30% (max)

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = 50\text{ V}, I_E = 0$			100	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 8\text{ V}, I_C = 0$			100	nA
Collector-emitter breakdown voltage	$V_{CE0}$	$I_C = 10\text{ mA}, I_B = 0$	20			V
DC current gain	$h_{FE}$	$V_{CE} = 2\text{ V}, I_C = 0.5\text{ A}$	800		3200	
		$V_{CE} = 2\text{ V}, I_C = 4\text{ A}$	250			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 4\text{ A}, I_B = 40\text{ mA}$			0.5	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = 2\text{ V}, I_C = 4\text{ A}$			1.2	V
Transition frequency	$f_T$	$V_{CE} = 2\text{ V}, I_C = 0.5\text{ A}$		150		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		45		pF

### ■ Marking

Marking	C4684