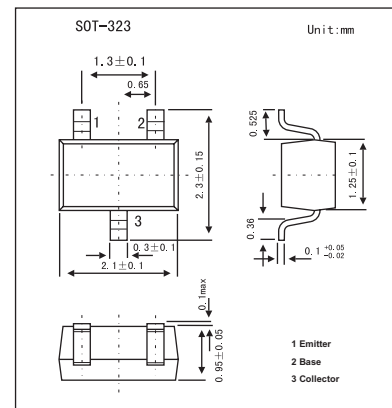


## Silicon PNP Epitaxial

## 2SA1954

## ■ Features

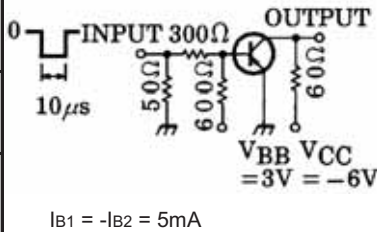
- Low saturation voltage:  $V_{CE(sat)}(1) = -15 \text{ mV (typ.)}$
- Large collector current:  $I_c = -500 \text{ mA (max)}$

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	-15	V
Collector-emitter voltage	$V_{CE0}$	-12	V
Emitter-base voltage	$V_{EB0}$	-5	V
Collector current	$I_c$	-500	mA
Base current	$I_B$	-50	mA
Collector power dissipation	$P_C$	100	mW
Junction temperature	$T_j$	125	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55 to +125	$^\circ\text{C}$

## 2SA1954

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = -15 V, I <sub>E</sub> = 0			-0.1	μA	
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = -5 V, I <sub>C</sub> = 0			-0.1	μA	
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> = -2 V, I <sub>C</sub> = -10 mA	300		1000		
Collector-emitter saturation voltage	V <sub>CE(sat)(1)</sub>	I <sub>C</sub> = -10 mA, I <sub>B</sub> = -0.5 mA		-15	-30	mV	
	V <sub>CE(sat)(2)</sub>	I <sub>C</sub> = -200 mA, I <sub>B</sub> = -10 mA		-110	-250	mV	
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = -200 mA, I <sub>B</sub> = -10 mA		-0.87	-1.2	V	
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -2 V, I <sub>C</sub> = -10 mA	80	130		MHz	
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1 MHz		4.2		pF	
Collector-emitter on resistance	R <sub>on</sub>	I <sub>B</sub> = -1mA, V <sub>in</sub> = -1V <sub>rms</sub> , f = 1KHz		0.9		Ω	
Switching Turn-on time	t <sub>on</sub>	 <p>           INPUT 300Ω            10 μs            50Ω            600Ω            OUTPUT            60Ω            V<sub>BB</sub> V<sub>CC</sub>            = 3V = -6V            I<sub>B1</sub> = -I<sub>B2</sub> = 5mA         </p>		40		ns	
Switching Storage time	t <sub>stg</sub>				280		ns
Switching Fall time	t <sub>f</sub>				45		ns

## ■ hFE Classification

Marking	GA	GB
hFE	300~600	500~1000