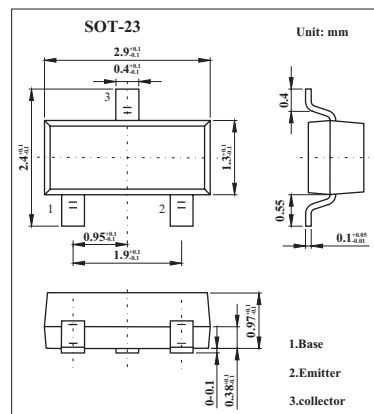


# 2SA1411

## ■ Features

- Very high DC current gain:hFE=500 to 1600.
- High V<sub>EBO</sub> Voltage:V<sub>EBO</sub>=-10V



## ■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	V <sub>CB0</sub>	-25	V
Collector-emitter voltage	V <sub>CEO</sub>	-25	V
Emitter-base voltage	V <sub>EBO</sub>	-10	V
Collector current	I <sub>C</sub>	-150	mA
Total power dissipation at 25°C ambient temperature	P <sub>T</sub>	200	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = -25 V, I <sub>E</sub> = 0			-100	nA
Emitter cutoff current	I <sub>EBO</sub>	V <sub>EB</sub> = -7 V, I <sub>C</sub> = 0			-100	nA
DC current gain *	h <sub>FE</sub>	V <sub>CE</sub> = -5 V, I <sub>C</sub> = -1 mA	500	1000	1600	
Base-emitter voltage *	V <sub>BE</sub>	V <sub>CE</sub> = -5 V, I <sub>C</sub> = -1 mA		-580		mV
Collector-emitter saturation voltage *	V <sub>CE(sat)</sub>	I <sub>C</sub> = -50mA, I <sub>B</sub> = -5mA		-0.15	-0.3	V
Base-emitter saturation voltage *	V <sub>BE(sat)</sub>	I <sub>C</sub> = -50mA, I <sub>B</sub> = -5mA		-0.8	-1.2	V
Gain bandwidth product	f <sub>T</sub>	V <sub>CE</sub> = -5V, I <sub>E</sub> = 10mA		200		MHz
Output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -5V, I <sub>E</sub> = 0, f = 1.0MHz		4.6		pF
Turn-on time	t <sub>on</sub>	V <sub>CC</sub> = -10V, V <sub>BE(off)</sub> = 2.7V,		0.12		ns
Storage time	t <sub>stg</sub>	I <sub>C</sub> = -50mA,		0.58		ns
Turn-off time	t <sub>off</sub>	I <sub>B1</sub> = -I <sub>B2</sub> = -1mA		0.75		ns

\* PW ≤ 350μs, duty cycle ≤ 2%

## ■ hFE Classification

Marking	M15	M16
hFE	500~1000	800~1600