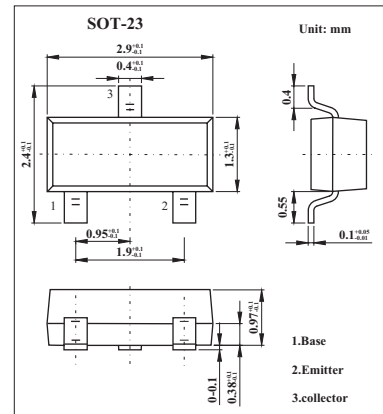


■ Features

- Fast switching speed.
- High breakdown voltage.

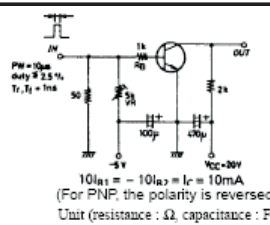


■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	V <sub>CB0</sub>	-60	V
Collector-emitter voltage	V <sub>CEO</sub>	-50	V
Emitter-base voltage	V <sub>EBO</sub>	-5	V
Collector current	I <sub>C</sub>	-150	mA
Collector current (pulse)	I <sub>CP</sub>	-400	mA
Base current	I <sub>B</sub>	-40	mA
Collector dissipation	P <sub>C</sub>	150	mW
Junction temperature	T <sub>j</sub>	125	°C
Storage temperature	T <sub>stg</sub>	-55 to +125	°C

## 2SA1331

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	IcBO	V <sub>CB</sub> = -40V , I <sub>E</sub> = 0			-0.1	μA
Emitter cutoff current	I <sub>EBO</sub>	V <sub>EB</sub> = -4V , I <sub>C</sub> = 0			-0.1	μA
DC current Gain	hFE	V <sub>CE</sub> = -6V , I <sub>C</sub> = -1mA	90		400	
Gain bandwidth product	f <sub>T</sub>	V <sub>CE</sub> = -6V , I <sub>C</sub> = -1mA		100		MHz
Common base output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -6V , f = 1MHz		3.5		pF
Collector-to-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -10mA , I <sub>B</sub> = -1mA		-0.1	-0.4	V
Base-to-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = -10mA , I <sub>B</sub> = -1mA		-0.75	-1.1	V
Collector-to-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = -10μA , I <sub>E</sub> = 0	-60			V
Collector-to-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = -1mA , R <sub>BE</sub> = ∞	-50			V
Emitter-to-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -10μA , I <sub>C</sub> = 0	-5			V
Delay time	t <sub>d</sub>	 <p>10I<sub>B1</sub> = -10I<sub>B2</sub> = I<sub>C</sub> = 10mA (For PNP, the polarity is reversed) Unit (resistance : Ω, capacitance : F)</p>		40	ns	
Rise time	t <sub>r</sub>			120	ns	
Storage time	t <sub>stg</sub>			190	ns	
Fall time	t <sub>f</sub>			200	ns	

■ hFE Classification

Marking	O		
Rank	4	5	6
hFE	90~180	135~270	200~400