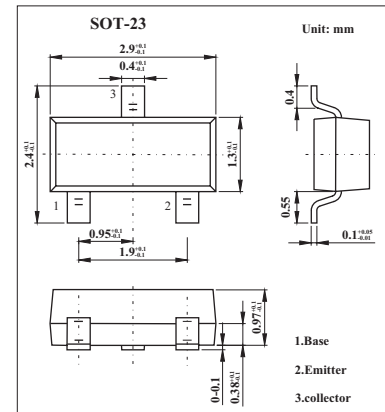


PNP Epitaxial Planar Silicon Transistors

2SA1331

■ Features

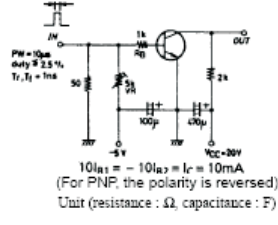
- Fast switching speed.
- High breakdown voltage.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	-60	V
Collector-emitter voltage	V_{CE0}	-50	V
Emitter-base voltage	V_{EB0}	-5	V
Collector current	I_C	-150	mA
Collector current (pulse)	I_{CP}	-400	mA
Base current	I_B	-40	mA
Collector dissipation	P_C	150	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +125	$^\circ\text{C}$

2SA1331

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	IcBO	V _{CB} = -40V , I _E = 0			-0.1	μA
Emitter cutoff current	I _{EBO}	V _{EB} = -4V , I _C = 0			-0.1	μA
DC current Gain	hFE	V _{CE} = -6V , I _C = -1mA	90		400	
Gain bandwidth product	f _T	V _{CE} = -6V , I _C = -1mA		100		MHz
Common base output capacitance	C _{ob}	V _{CB} = -6V , f = 1MHz		3.5		pF
Collector-to-emitter saturation voltage	V _{CE(sat)}	I _C = -10mA , I _B = -1mA		-0.1	-0.4	V
Base-to-emitter saturation voltage	V _{BE(sat)}	I _C = -10mA , I _B = -1mA		-0.75	-1.1	V
Collector-to-base breakdown voltage	V _{(BR)CBO}	I _C = -10μA , I _E = 0	-60			V
Collector-to-emitter breakdown voltage	V _{(BR)CEO}	I _C = -1mA , R _{BE} = ∞	-50			V
Emitter-to-base breakdown voltage	V _{(BR)EBO}	I _E = -10μA , I _C = 0	-5			V
Delay time	t _d			40	ns	
Rise time	t _r				120	ns
Storage time	t _{stg}				190	ns
Fall time	t _f				200	ns

■ hFE Classification

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