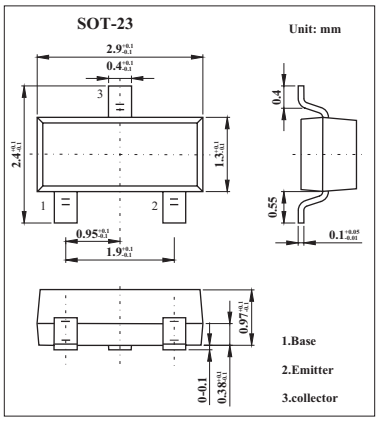
PNP Epitaxial Planar Silicon Transistors

2SA1331



■ Features

- Fast switching speed.
- High breakdown voltage.

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-60	V
Collector-emitter voltage	V_{CEO}	-50	V
Emitter-base voltage	V_{EBO}	-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
Jumction temperature	T_j	125	℃
Storage temperature	T_{stg}	-55 to +125	℃

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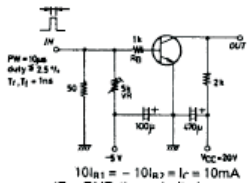
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	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	h_{FE}	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	Cob	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

$10I_{B1} = -10I_{B2} = I_C = 10mA$
(For PNP, the polarity is reversed)
Unit (resistance : Ω, capacitance : F)

■ h_{FE} Classification

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