

NPN Epitaxial Planar Silicon Transistors

2SC5310

■ Features

- Adoption of FBET, MBIT processes.
- Large current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- Ultrasmall package facilitates miniaturization in end products.



■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	V _{CBO}	30	V
Collector-emitter voltage	V _{CEO}	25	V
Emitter-base voltage	V _{EBO}	6	V
Collector current	I _C	1	A
Collector current (pulse)	I _{CP}	3	A
Base current	I _B	200	mA
Collector dissipation *	P _C	250	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

* Mounted on a glass-epoxy board (20×30×1.6mm)

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Collector cutoff current	ICBO	V _{CB} = 20V, I _E =0			0.1	μA	
Emitter cutoff current	IEBO	V _{EB} = 3V, I _C =0			0.1	μA	
DC current gain	hFE	V _{CE} = 2V, I _C = 100mA	135		400		
Gain bandwidth product	f _T	V _{CE} = 10V, I _C = 50mA		150		MHz	
Output capacitance	C _{ob}	V _{CB} = 10V, f = 1.0MHz		19		pF	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C = 500mA, I _B = 25mA		100	200	mV	
Base-emitter saturation voltage	V _{BE(sat)}	I _C = 500mA, I _B = 25mA		0.85	1.2	V	
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 10μA, I _E = 0	30			V	
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = 1mA, R _{BE} = ∞	25			V	
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E = 10μA, I _C = 0	6			V	
Turn-on time	t _{on}	<p> $PW=20\mu s$ $D.C.\leq 1\%$ $V_{BE}=-5V$ $V_{CC}=12V$ $20_{IB1} = -20_{IB2} = I_C = 500mA$ (For PNP, the polarity is reversed.) </p>		60		ns	
Storage time	t _{stg}				500		ns
Fall time	t _f				25		ns

■ hFE Classification

Marking	NN	
	Rank	5
hFE	135~270	200~400