

High-Voltage Switching Applications

2SC4135

■ Features

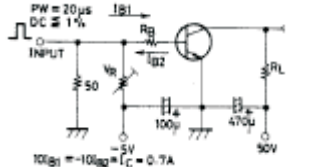
- High breakdown voltage and large current capacity.
- Fast switching speed.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	120	V
Collector-emitter voltage	V_{CE0}	100	V
Emitter-base voltage	V_{EB0}	6	V
Collector current	I_C	2	A
Collector current (pulse)	I_{CP}	3	A
Collector dissipation	P_C	1	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Collector cutoff current	I_{CBO}	$V_{CB} = 100V, I_E = 0$			100	nA	
Emitter cutoff current	I_{EBO}	$V_{EB} = 4V, I_C = 0$			100	nA	
DC current gain	h_{FE}	$V_{CE} = 5V, I_C = 100mA$	100		400		
Gain bandwidth product	f_T	$V_{CE} = 10V, I_C = 100mA$		120		MHz	
Output capacitance	C_{ob}	$V_{CB} = 10V, f = 1.0MHz$		16		pF	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1A, I_B = 100mA$		0.13	0.4	V	
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1A, I_B = 100mA$		0.85	1.2	V	
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	120			V	
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1mA, R_{BE} = \infty$	100			V	
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	6			V	
Turn-on time	t_{on}	 <p>Unit (resistance : Ω, capacitance : F) (For PNP, the polarity is reversed.)</p>		80		ns	
Storage time	t_{stg}				1000		ns
Fall time	t_f				50		ns

■ hFE Classification

Rank	R	S	T
hFE	100~200	140~280	200~400