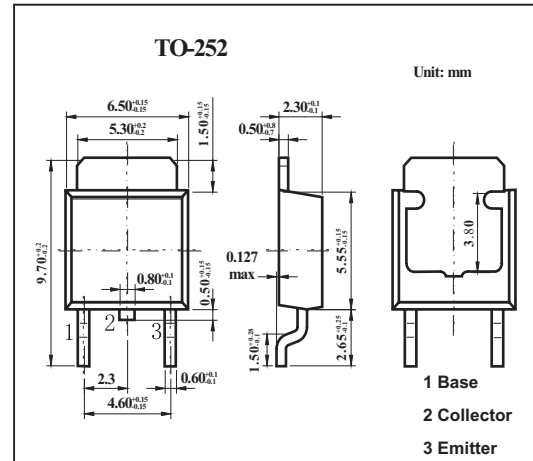


Silicon NPN Triple Diffused Type Transistor

2SB1409S



■ Features

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

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CB0}	-180	V
Collector to emitter voltage	V_{CE0}	-160	V
Emitter to base voltage	V_{EB0}	-5	V
Collector current	I_C	-1.5	A
Collector peak current	$I_{C(\text{peak})}$	-3	A
Collector power dissipation	P_C^{*1}	18	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

*1 Value at $T_c = 25^\circ\text{C}$.

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector to base breakdown voltage	$V_{(BR)CB0}$	$I_C = -1 \text{ mA}, I_E = 0$	-180			V
Collector to emitter breakdown voltage	$V_{(BR)CE0}$	$I_C = -10 \text{ mA}, R_{BE} = \infty$	-160			V
Emitter to base breakdown voltage	$V_{(BR)EB0}$	$I_E = -1 \text{ mA}, I_C = 0$	-5			V
Collector cutoff current	I_{CBO}	$V_{CB} = -160 \text{ V}, I_E = 0$			-10	μA
DC current transfer ratio	h_{FE}	$V_{CE} = -5 \text{ V}, I_C = -150 \text{ mA}^*$	60		200	
		$V_{CE} = -5 \text{ V}, I_C = -500 \text{ mA}^*$	30			
Collector to emitter saturation voltage	$V_{CE(\text{sat})}$	$I_C = -500 \text{ mA}, I_B = -50 \text{ mA}$			-1	V
Base to emitter voltage	V_{BE}	$V_{CE} = -5 \text{ V}, I_C = -150 \text{ mA}$			-1.5	V
Gain bandwidth product	f_T	$V_{CE} = -5 \text{ V}, I_C = -150 \text{ mA}$		240		MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		25		pF

* Pulse test.

■ h_{FE} Classification

TYPE	B	C
h_{FE}	60 to 120	100 to 200