

New Jersey Semi-Conductor Products, Inc.

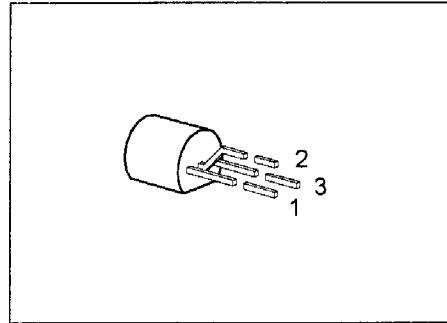
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PNP Silicon AF Switching Transistor

BCX 13

- For general AF applications
- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary type: BCX 12 (NPN)



Type	Marking
BCX 13	BCX 13

Pin Configuration			Package ¹⁾
1	2	3	
C	B	E	TO-92

Maximum Ratings

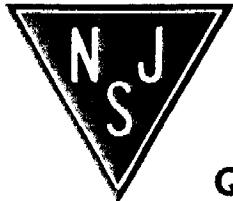
Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CEO}	125	V
Collector-base voltage	V_{CBO}	125	
Emitter-base voltage	V_{EBO}	5	
Collector current	I_C	800	mA
Peak collector current	I_{CM}	1	A
Base current	I_B	100	mA
Peak base current	I_{BM}	200	
Total power dissipation, $T_c = 66^\circ\text{C}$	P_{tot}	625	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-65 ... +150	

Thermal Resistance

Junction - ambient	$R_{th JA}$	≤ 200	K/W
Junction - case ²⁾	$R_{th JC}$	≤ 135	

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Quality Semi-Conductors



Electrical Characteristicsat $T_A = 25^\circ\text{C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC characteristics for transistor T1

Collector-emitter breakdown voltage $I_C = 10 \text{ mA}, I_B = 0$	$V_{(\text{BR})\text{CE}0}$	125	—	—	V
Collector-base breakdown voltage $I_C = 100 \mu\text{A}, I_B = 0$	$V_{(\text{BR})\text{CB}0}$	125	—	—	
Emitter-base breakdown voltage $I_E = 10 \mu\text{A}, I_C = 0$	$V_{(\text{BR})\text{EBS}}$	5	—	—	
Collector-base cutoff current $V_{CB} = 100 \text{ V}, I_E = 0$ $V_{CB} = 100 \text{ V}, I_E = 0, T_A = 150^\circ\text{C}$	I_{CB0}	— —	— —	100 10	nA μA
Emitter cutoff current $V_{EB} = 4 \text{ V}$	I_{EB0}	—	—	100	nA
DC current gain ¹⁾ $I_C = 1 \text{ mA}, V_{CE} = 1 \text{ V}$ $I_C = 10 \text{ mA}, V_{CE} = 1 \text{ V}$ $I_C = 100 \text{ mA}, V_{CE} = 1 \text{ V}$ $I_C = 200 \text{ mA}, V_{CE} = 1 \text{ V}$	h_{FE}	25 50 63 40	— — — —	— — — —	—
Collector-emitter saturation voltage ¹⁾ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	$V_{CE\text{sat}}$	—	—	1.0	V
Base-emitter saturation voltage ¹⁾ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	$V_{BE\text{sat}}$	—	—	1.6	

AC characteristics

Transition frequency $I_C = 20 \text{ mA}, V_{CE} = 5 \text{ V}, f = 20 \text{ MHz}$	f	—	120	—	MHz
Output capacitance $V_{CB} = 10 \text{ V}, f = 1 \text{ MHz}$	C_{obo}	—	12	—	pF