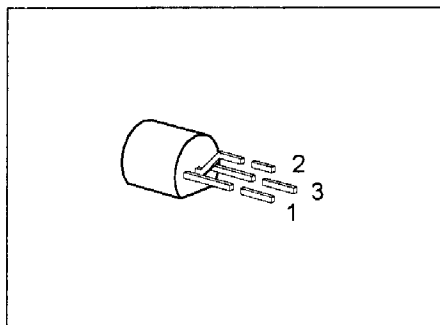


**PNP Silicon AF Switching Transistor**

**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

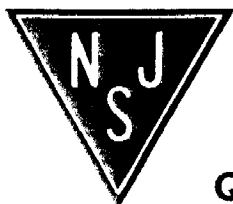
Pin Configuration			Package <sup>1)</sup>
1	2	3	
C	B	E	TO-92

**Maximum Ratings**

Parameter	Symbol	Values	Unit
Collector-emitter voltage	$V_{CE0}$	125	V
Collector-base voltage	$V_{CB0}$	125	
Emitter-base voltage	$V_{EB0}$	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	$R_{th JA}$	$\leq 200$	K/W
Junction - case <sup>2)</sup>	$R_{th JC}$	$\leq 135$	



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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

**DC characteristics for transistor T1**

Collector-emitter breakdown voltage $I_C = 10\text{ mA}$ , $I_B = 0$	$V_{(BR)CE0}$	125	–	–	V
Collector-base breakdown voltage $I_C = 100\text{ }\mu\text{A}$ , $I_B = 0$	$V_{(BR)CB0}$	125	–	–	
Emitter-base breakdown voltage $I_E = 10\text{ }\mu\text{A}$ , $I_C = 0$	$V_{(BR)EBS}$	5	–	–	
Collector-base cutoff current $V_{CB} = 100\text{ V}$ , $I_E = 0$ $V_{CB} = 100\text{ V}$ , $I_E = 0$ , $T_A = 150\text{ }^\circ\text{C}$	$I_{CB0}$	–	–	100 10	nA $\mu\text{A}$
Emitter cutoff current $V_{EB} = 4\text{ V}$	$I_{EB0}$	–	–	100	nA
DC current gain <sup>1)</sup> $I_C = 1\text{ mA}$ , $V_{CE} = 1\text{ V}$ $I_C = 10\text{ mA}$ , $V_{CE} = 1\text{ V}$ $I_C = 100\text{ mA}$ , $V_{CE} = 1\text{ V}$ $I_C = 200\text{ mA}$ , $V_{CE} = 1\text{ V}$	$h_{FE}$	25 50 63 40	– – – –	– – – –	–
Collector-emitter saturation voltage <sup>1)</sup> $I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$	$V_{CEsat}$	–	–	1.0	V
Base-emitter saturation voltage <sup>1)</sup> $I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$	$V_{BEsat}$	–	–	1.6	

**AC characteristics**

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