

**MMBT4123**

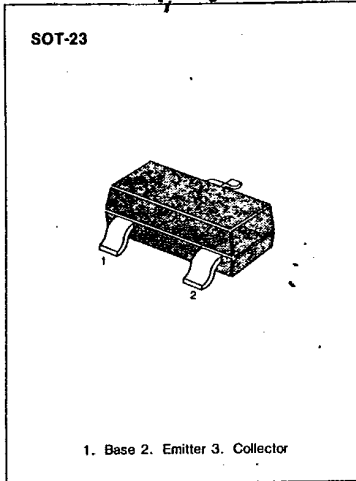
**NPN EPITAXIAL SILICON TRANSISTOR**

T-29-19

**GENERAL PURPOSE TRANSISTOR**

**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub> = 25°C)**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	40	V
Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	200	mA
Collector Dissipation	P <sub>C</sub>	350	mW
Storage Temperature	T <sub>stg</sub>	150	°C
Thermal Resistance Junction to Ambient	R <sub>th(j-a)</sub>	357	°C/W

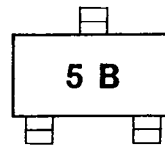


**ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = 25°C)**

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> = 0	40		V
* Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> = 1mA, I <sub>E</sub> = 0	30		V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> = 0	5		V
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> = 20V, I <sub>E</sub> = 0		50	nA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>BE</sub> = 3V, I <sub>C</sub> = 0		50	nA
* DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 1V, I <sub>C</sub> = 2mA	50	150	
		V <sub>CE</sub> = 1V, I <sub>C</sub> = 50mA	25		
* Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 50mA, I <sub>B</sub> = 5mA		0.3	V
* Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 50mA, I <sub>B</sub> = 5mA		0.95	V
Current Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 20V, I <sub>C</sub> = 10mA, f = 100MHz	250		MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 5V, I <sub>E</sub> = 0, f = 100MHz		4	pF
Collector Input Capacitance	C <sub>ib</sub>	V <sub>BE</sub> = 0.5V, I <sub>C</sub> = 0, f = 100KHz		8	pF
Collector-Base Capacitance	C <sub>cb</sub>	V <sub>CB</sub> = 5V, I <sub>E</sub> = 0, f = 100KHz		4	pF
Noise Figure	NF	V <sub>CE</sub> = 5V, I <sub>C</sub> = 100μA, R <sub>s</sub> = 1kΩ Noise Bandwidth = 10Hz to 15.7KHz		6	dB

\* Pulse Test: PW ≤ 300μs, Duty Cycle ≤ 2%

Marking



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