

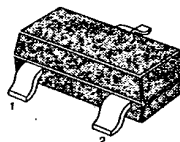
**MMBT5088****NPN EPITAXIAL SILICON TRANSISTOR**

T-29-19

**LOW NOISE TRANSISTOR****ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )**

| Characteristic            | Symbol    | Rating | Unit             |
|---------------------------|-----------|--------|------------------|
| Collector-Base Voltage    | $V_{CBO}$ | 35     | V                |
| Collector-Emitter Voltage | $V_{CEO}$ | 30     | V                |
| Emitter-Base Voltage      | $V_{EBQ}$ | 4.5    | V                |
| Collector Current         | $I_C$     | 50     | mA               |
| Collector Dissipation     | $P_C$     | 350    | mW               |
| Storage Temperature       | $T_{stg}$ | 150    | $^\circ\text{C}$ |

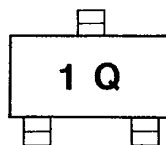
SOT-23



1. Base 2. Emitter 3. Collector

**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )**

| Characteristic                       | Symbol        | Test Condition                                                                                                    | Min | Max | Unit |
|--------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------|-----|-----|------|
| Collector-Base Breakdown Voltage     | $BV_{CBO}$    | $I_C = 100\mu\text{A}$ , $I_E = 0$                                                                                | 35  |     | V    |
| Collector-Emitter Breakdown Voltage  | $BV_{CEO}$    | $I_C = 1\text{mA}$ , $I_B = 0$                                                                                    | 30  |     | V    |
| Collector Cutoff Current             | $I_{CBO}$     | $V_{CB} = 20\text{V}$ , $I_E = 0$                                                                                 |     | 50  | nA   |
| Emitter Cutoff Current               | $I_{EBO}$     | $V_{BE} = 3\text{V}$ , $I_C = 0$                                                                                  |     | 50  | nA   |
| DC Current Gain                      | $h_{FE}$      | $V_{CE} = 5\text{V}$ , $I_C = 100\mu\text{A}$                                                                     | 300 | 900 |      |
|                                      |               | $V_{CE} = 5\text{V}$ , $I_C = 1\text{mA}$                                                                         | 350 |     |      |
|                                      |               | $V_{CE} = 5\text{V}$ , $I_C = 10\text{mA}$                                                                        | 300 |     |      |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 10\text{mA}$ , $I_B = 1.0\text{mA}$                                                                        |     | 0.5 | V    |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C = 10\text{mA}$ , $I_B = 1.0\text{mA}$                                                                        |     | 0.8 | V    |
| Current Gain-Bandwidth Product       | $f_T$         | $I_C = 500\mu\text{A}$ , $V_{CE} = 5\text{V}$<br>$f = 20\text{MHz}$                                               | 50  |     | MHz  |
| Collector Base Capacitance           | $C_{cb}$      | $V_{CB} = 5\text{V}$ , $I_E = 0$<br>$f = 100\text{kHz}$                                                           |     | 4   | pF   |
| Noise Figure                         | NF            | $I_C = 100\mu\text{A}$ , $V_{CE} = 5\text{V}$<br>$R_S = 10\text{K}\Omega$<br>$f = 10\text{Hz to } 15.7\text{KHz}$ |     | 3   | dB   |

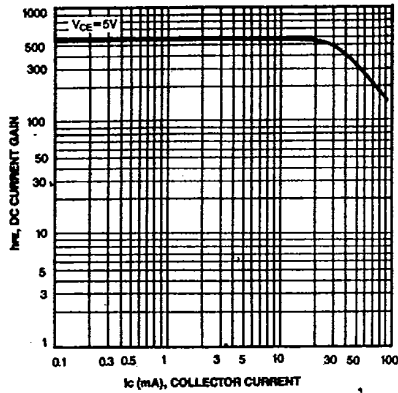
**Marking**

## MMBT5088

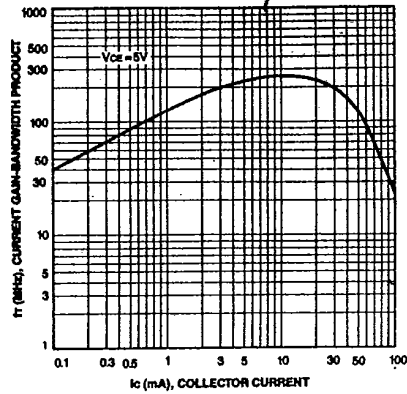
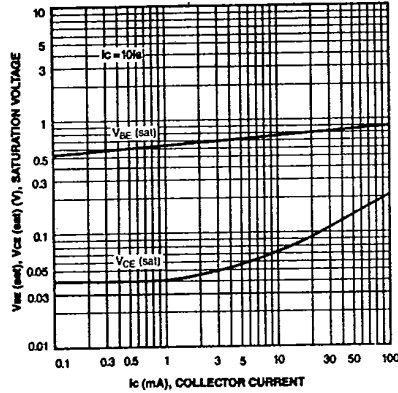
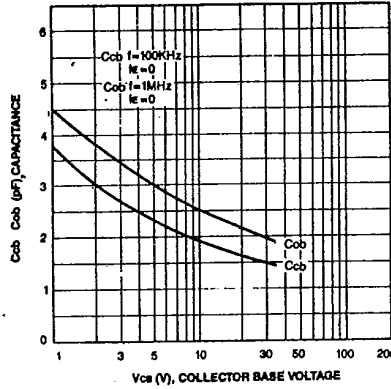
## NPN EPITAXIAL SILICON TRANSISTOR

T-29-19

DC CURRENT GAIN



CURRENT GAIN BANDWIDTH PRODUCT

BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGEOUTPUT CAPACITANCE  
COLLECTOR-BASE CAPACITANCE

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MMBT5088

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