

**2SB1188****PNP SILICON TRANSISTOR****MEDIUM POWER LOW  
VOLTAGE TRANSISTOR**

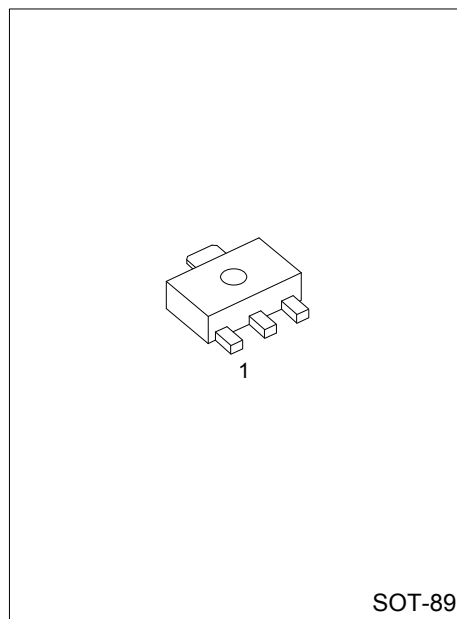
## ■ DESCRIPTION

The UTC **2SB1188** is a medium power low voltage transistor, designed for audio power amplifier, DC-DC converter and voltage regulator.

## ■ FEATURES

\*High current output up to 3A

\*Low saturation voltage



Lead-free: 2SB1188L

Halogen-free: 2SB1188G

## ■ ORDERING INFORMATION

| Ordering Number |                   |                  | Package | Pin Assignment |   |   | Packing   |
|-----------------|-------------------|------------------|---------|----------------|---|---|-----------|
| Normal          | Lead Free Plating | Halogen Free     |         | 1              | 2 | 3 |           |
| 2SB1188-x-AB3-R | 2SB1188L-x-AB3-R  | 2SB1188G-x-AB3-R | SOT-89  | B              | C | E | Tape Reel |

|                                                                                                                                                             |                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2SB1188L-x-AB3-R</p> <ul style="list-style-type: none"><li>(1) Packing Type</li><li>(2) Package Type</li><li>(3) Rank</li><li>(4) Lead Plating</li></ul> | <ul style="list-style-type: none"><li>(1) R: Tape Reel</li><li>(2) AB3: SOT-89</li><li>(3) x: refer to Classification of <math>h_{FE2}</math></li><li>(4) G: Halogen Free, L: Lead Free Plating, Blank: Pb/Sn</li></ul> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| PARAMETER                  | SYMBOL    | RATINGS  | UNIT |
|----------------------------|-----------|----------|------|
| Collector -Base Voltage    | $V_{CBO}$ | -40      | V    |
| Collector -Emitter Voltage | $V_{CEO}$ | -30      | V    |
| Emitter -Base Voltage      | $V_{EBO}$ | -5       | V    |
| Peak Collector Current     | $I_{CM}$  | -7       | A    |
| DC Collector Current       | $I_C$     | -3       | A    |
| Base Current               | $I_B$     | -0.6     | A    |
| Power Dissipation          | $P_D$     | 0.5      | W    |
| Junction Temperature       | $T_J$     | +150     | °C   |
| Storage Temperature        | $T_{STG}$ | -40~+150 | °C   |

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

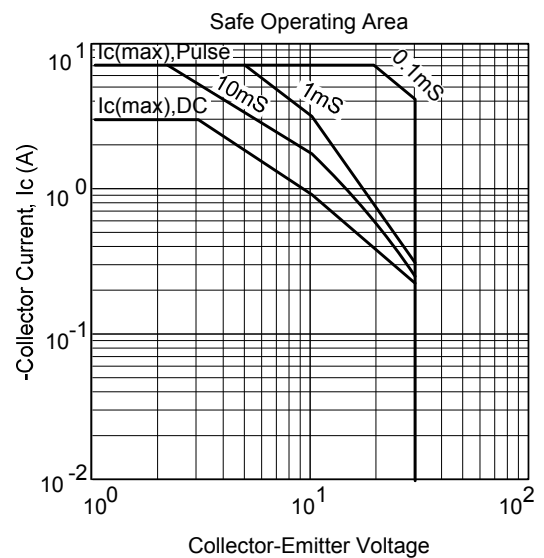
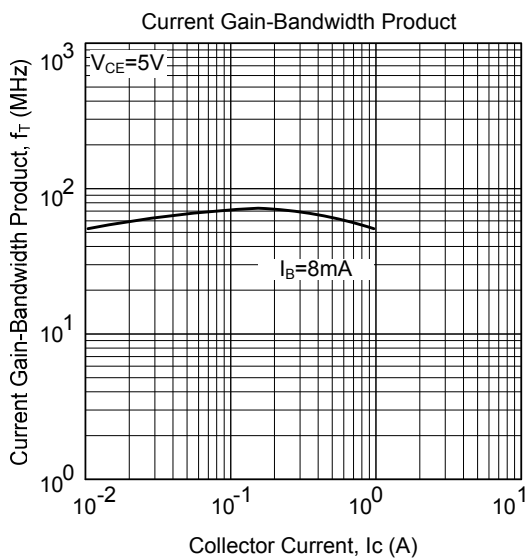
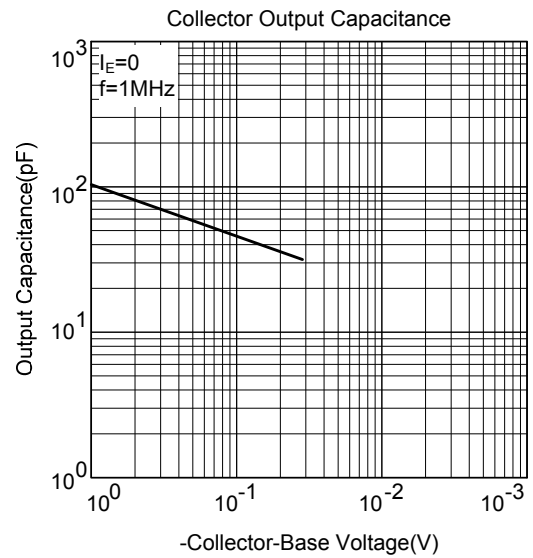
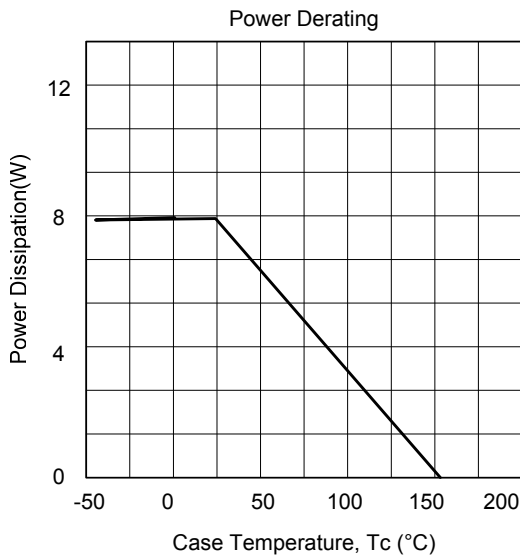
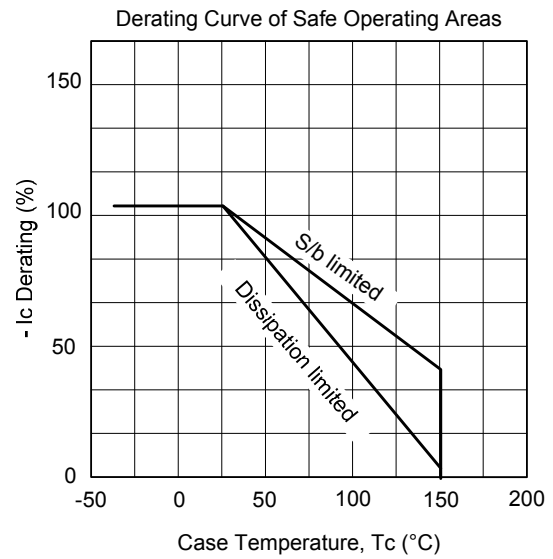
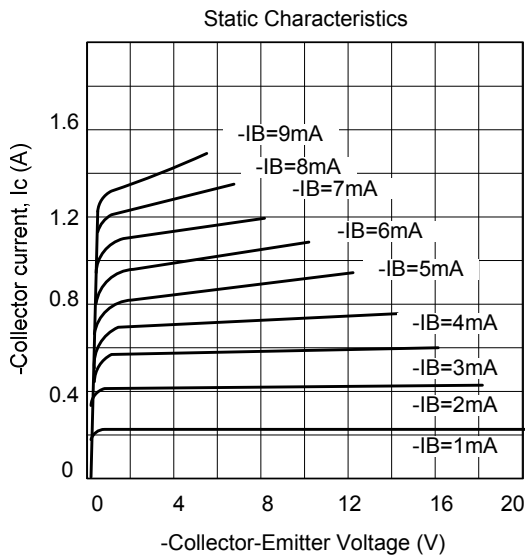
| PARAMETER                            | SYMBOL        | TEST CONDITIONS                    | MIN | TYP  | MAX  | UNIT    |
|--------------------------------------|---------------|------------------------------------|-----|------|------|---------|
| Collector Base Breakdown Voltage     | $BV_{CBO}$    | $I_C = -50\mu A$                   | -40 |      |      | V       |
| Collector Emitter Breakdown Voltage  | $BV_{CEO}$    | $I_C = -1mA$                       | -30 |      |      | V       |
| Emitter Base Breakdown Voltage       | $BV_{EBO}$    | $I_E = -50\mu A$                   | -5  |      |      | V       |
| Collector Cut-Off Current            | $I_{CBO}$     | $V_{CB} = -30V, I_E = 0$           |     |      | -1   | $\mu A$ |
| Emitter Cut-Off Current              | $I_{EBO}$     | $V_{EB} = -4V, I_C = 0$            |     |      | -1   | $\mu A$ |
| DC Current Gain(Note)                | $h_{FE1}$     | $V_{CE} = -2V, I_C = -20mA$        | 30  | 200  |      |         |
|                                      | $h_{FE2}$     | $V_{CE} = -2V, I_C = -1A$          | 100 | 150  | 400  |         |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C = -2A, I_B = -0.2A$           |     | -0.3 | -0.5 | V       |
| Base-Emitter Saturation Voltage      | $V_{BE(SAT)}$ | $I_C = -2A, I_B = -0.2A$           |     | -1.0 | -2.0 | V       |
| Current Gain Bandwidth Product       | $f_T$         | $V_{CE} = -5V, I_C = -0.1A$        |     | 80   |      | MHz     |
| Output Capacitance                   | $C_{ob}$      | $V_{CB} = -10V, I_E = 0, f = 1MHz$ |     | 45   |      | pF      |

Note: Pulse test:  $P_W < 300\mu s$ , Duty Cycle  $< 2\%$

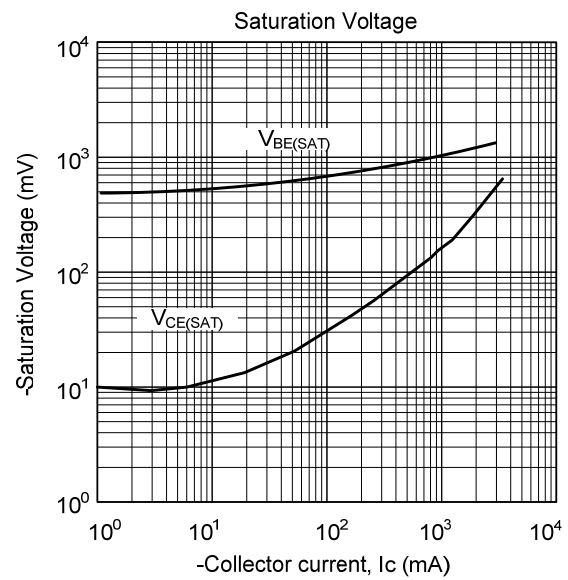
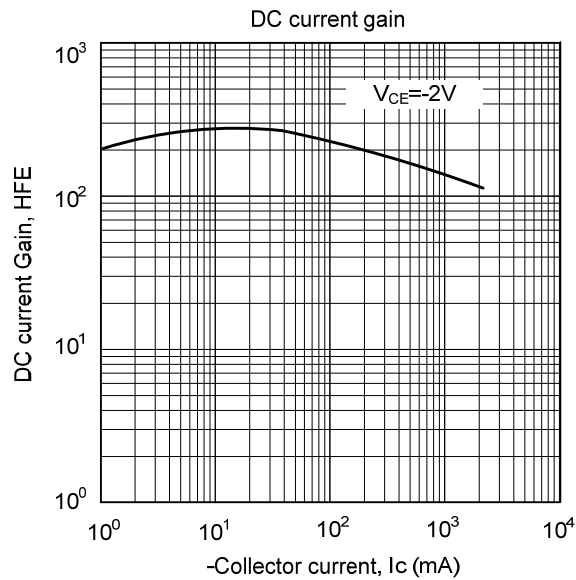
■ CLASSIFICATION OF  $h_{FE2}$

| RANK  | Q         | P         | E         |
|-------|-----------|-----------|-----------|
| RANGE | 100 ~ 200 | 160 ~ 320 | 200 ~ 400 |

## TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(cont.)



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