

Plastic-Encapsulate Transistors

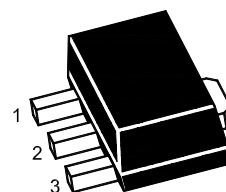
TRANSISTOR (NPN)

FEATURES

- Small Flat Package
- High Speed Switching Time
- Low Collector-emitter saturation voltage
- Complementary to 2SA1213

APPLICATIONS

- Power Amplifier and Switching



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|-----------------|---|----------|----------------------|
| V_{CBO} | Collector-Base Voltage | 50 | V |
| V_{CEO} | Collector-Emitter Voltage | 50 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current | 2 | A |
| P_C | Collector Power Dissipation | 500 | mW |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 250 | $^{\circ}\text{C/W}$ |
| T_j | Junction Temperature | 150 | $^{\circ}\text{C}$ |
| T_{stg} | Storage Temperature | -55~+150 | $^{\circ}\text{C}$ |

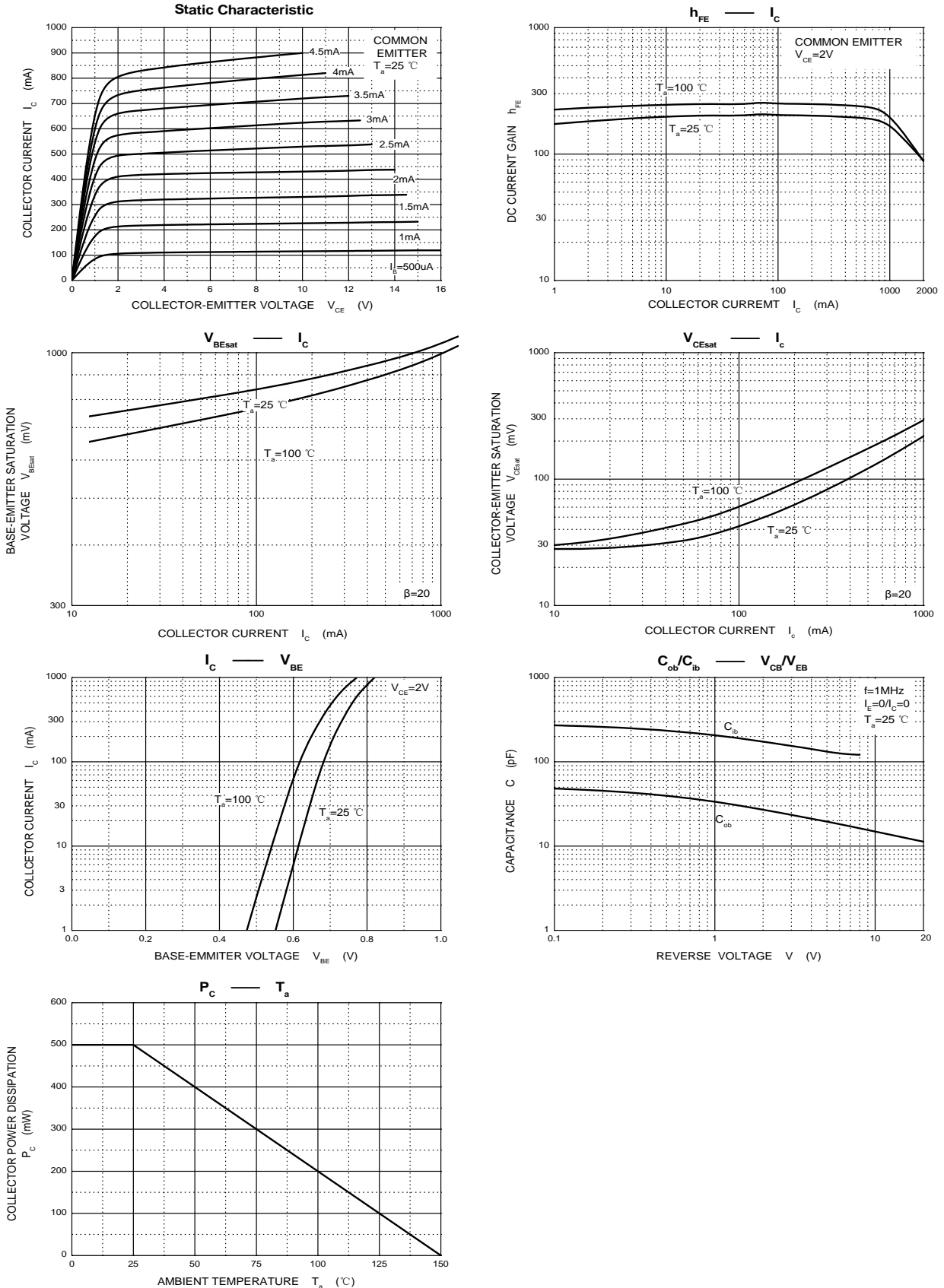
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=100\mu\text{A}, I_E=0$ | 50 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=1\text{mA}, I_B=0$ | 50 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}, I_C=0$ | 5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=50\text{V}, I_E=0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5\text{V}, I_C=0$ | | | 0.1 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE}=2\text{V}, I_C=0.5\text{A}$ | 70 | | 240 | |
| | $h_{FE(2)}$ | $V_{CE}=2\text{V}, I_C=2\text{A}$ | 20 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=1\text{A}, I_B=50\text{mA}$ | | | 0.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=1\text{A}, I_B=50\text{mA}$ | | | 1.2 | V |
| Transition frequency | f_T | $V_{CE}=2\text{V}, I_C=0.5\text{A}$ | | 120 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ | | 30 | | pF |

CLASSIFICATION OF $h_{FE(1)}$

| RANK | O | Y |
|---------|----------|-----------|
| RANGE | 70 - 140 | 120 - 240 |
| MARKING | MO | MY |

Typical Characteristics



SOT-89 PACKAGE OUTLINE

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