



YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

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企业微信二维码



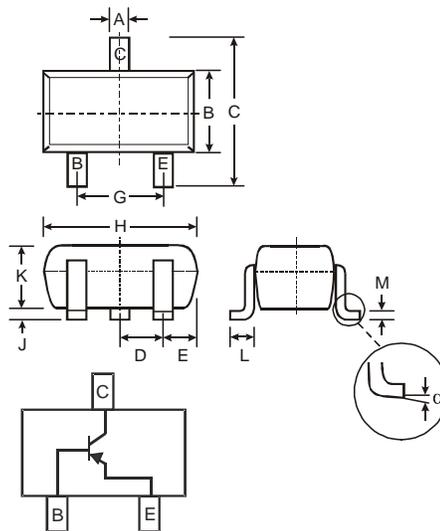
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Features

- Epitaxial Planar Die Construction
- Complementary NPN Type Available (NK-MMSTA42)
- Ideal for Low Power Amplification and Switching

Mechanical Data

- Case: SOT-323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.006 grams (approximate)



| SOT-323 | | |
|----------------------|--------------|------|
| Dim | Min | Max |
| A | 0.25 | 0.40 |
| B | 1.15 | 1.35 |
| C | 2.00 | 2.20 |
| D | 0.65 Nominal | |
| E | 0.30 | 0.40 |
| G | 1.20 | 1.40 |
| H | 1.80 | 2.20 |
| J | 0.0 | 0.10 |
| K | 0.90 | 1.00 |
| L | 0.25 | 0.40 |
| M | 0.10 | 0.18 |
| α | 0° | 8° |
| All Dimensions in mm | | |

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------------|---------------------------|
| Collector-Base Voltage | V_{CB0} | -300 | V |
| Collector-Emitter Voltage | V_{CE0} | -300 | V |
| Emitter-Base Voltage | V_{EBO} | -5.0 | V |
| Collector Current (Note 1) | I_C | -100 | mA |
| Power Dissipation (Note 1) | P_d | 200 | mW |
| Thermal Resistance, Junction to Ambient (Note 1) | $R_{\theta JA}$ | 625 | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range | T_j, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|--------------------------------------|---------------|----------------|------|------|---|
| OFF CHARACTERISTICS (Note 5) | | | | | |
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | -300 | — | V | $I_C = -100\mu\text{A}, I_E = 0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | -300 | — | V | $I_C = -1.0\text{mA}, I_B = 0$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | -5.0 | — | V | $I_E = -100\mu\text{A}, I_C = 0$ |
| Collector Cutoff Current | I_{CBO} | — | -250 | nA | $V_{CB} = -200\text{V}, I_E = 0$ |
| Collector Cutoff Current | I_{EBO} | — | -100 | nA | $V_{CE} = -3.0\text{V}, I_C = 0$ |
| ON CHARACTERISTICS (Note 5) | | | | | |
| DC Current Gain | h_{FE} | 25 40 25 | — | — | $I_C = -1.0\text{mA}, V_{CE} = -10\text{V}$ $I_C = -10\text{mA}, V_{CE} = -10\text{V}$ $I_C = -30\text{mA}, V_{CE} = -10\text{V}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | — | -0.5 | V | $I_C = -20\text{mA}, I_B = -2.0\text{mA}$ |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | — | -0.9 | V | $I_C = -20\text{mA}, I_B = -2.0\text{mA}$ |
| SMALL SIGNAL CHARACTERISTICS | | | | | |
| Output Capacitance | C_{cb} | — | 6.0 | pF | $V_{CB} = -20\text{V}, f = 1.0\text{MHz}, I_E = 0$ |
| Current Gain-Bandwidth Product | f_T | 50 | — | MHz | $V_{CE} = -20\text{V}, I_C = -10\text{mA}, f = 100\text{MHz}$ |

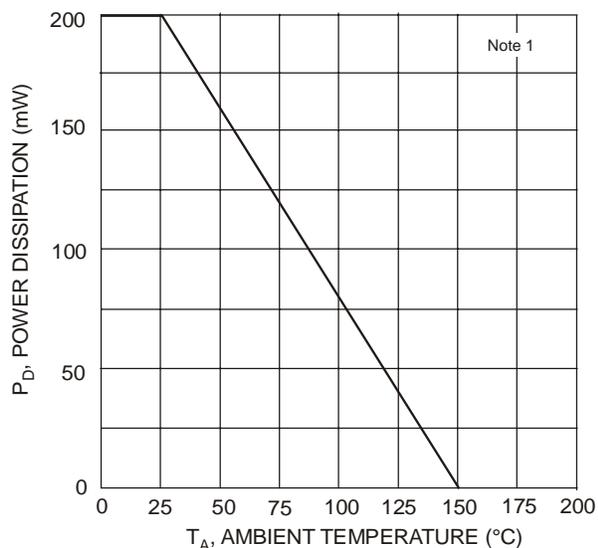


Fig. 1, Max Power Dissipation vs. Ambient Temperature

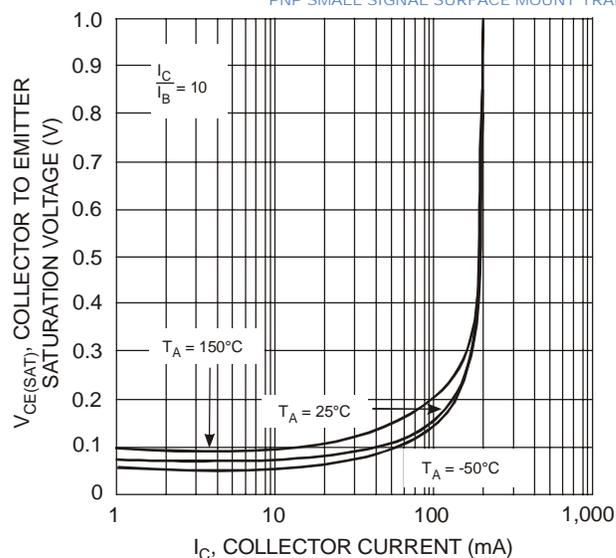


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

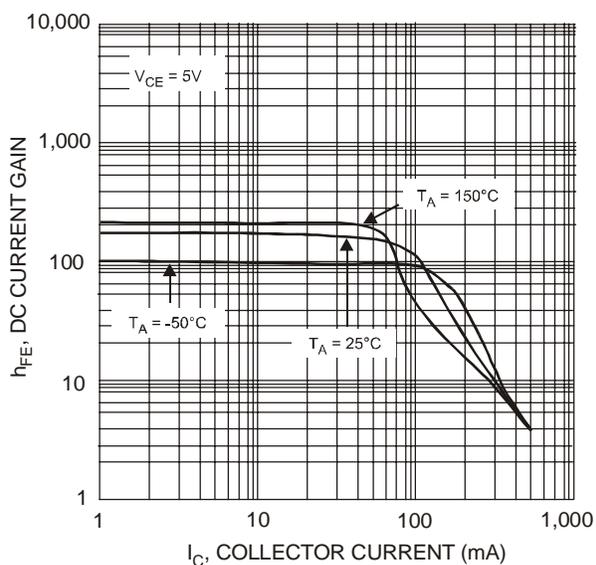


Fig. 3, DC Current Gain vs. Collector Current

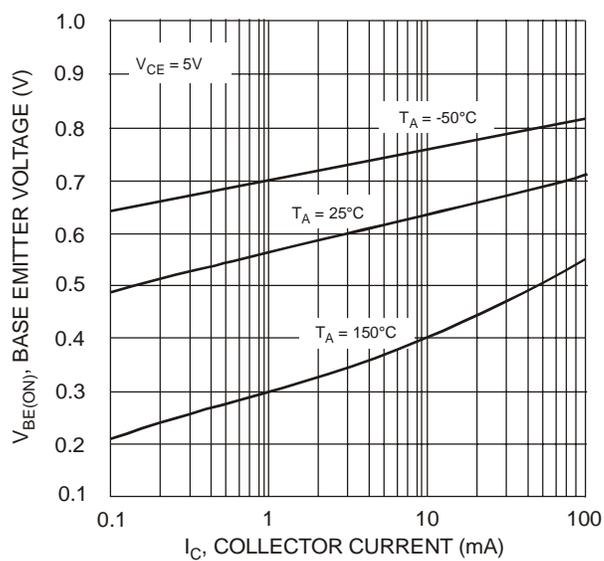


Fig. 4, Base Emitter Voltage vs. Collector Current

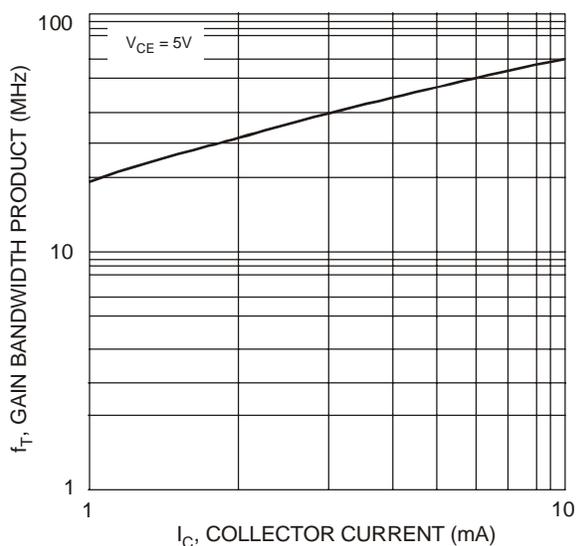


Fig. 5, Gain Bandwidth Product vs. Collector Current