



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

0755-83047638

ysbdt@szyoushang.cn

www.szyoushang.cn



企业微信二维码



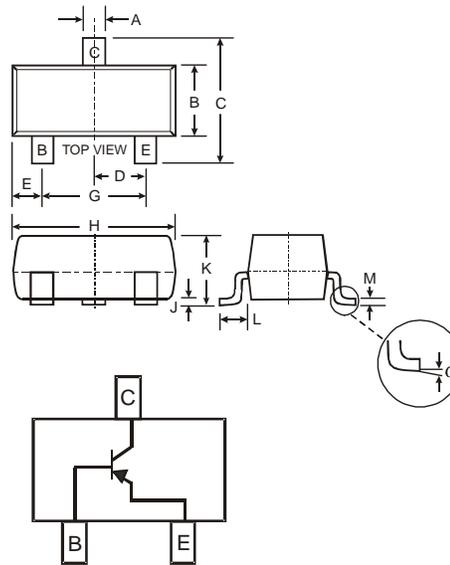
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Features

- Epitaxial Planar Die Construction
- Complementary NPN Type Available (NK-DN350T05)
- Ideal for Medium Power Amplification and Switching

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: See Diagram
- Terminals: Finish — Matte Tin Finish annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: K3U - See Page 2
- Ordering & Date Code Information: See Page 2
- Weight: 0.008 grams (approximate)



| SOT-23 | | |
|----------------------|-------|-------|
| Dim | Min | Max |
| A | 0.37 | 0.51 |
| B | 1.20 | 1.40 |
| C | 2.30 | 2.50 |
| D | 0.89 | 1.03 |
| E | 0.45 | 0.60 |
| G | 1.78 | 2.05 |
| H | 2.80 | 3.00 |
| J | 0.013 | 0.10 |
| K | 0.903 | 1.10 |
| L | 0.45 | 0.61 |
| M | 0.085 | 0.180 |
| α | 0° | 8° |
| All Dimensions in mm | | |

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

| Characteristic | Symbol | DP350T05 | Unit |
|--|-----------------|-------------|---------------------------|
| Collector-Base Voltage | V_{CB0} | -350 | V |
| Collector-Emitter Voltage | V_{CE0} | -350 | V |
| Emitter-Base Voltage | V_{EB0} | -5.0 | V |
| Continuous Collector Current (Note 1) | I_c | -500 | mA |
| Power Dissipation (Note 1) | P_D | 300 | mW |
| Thermal Resistance, Junction to Ambient (Note 1) | $R_{\theta JA}$ | 417 | $^\circ\text{C}/\text{W}$ |
| 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 | $V_{(BR)CBO}$ | -350 | — | V | $I_C = -100\mu\text{A}, I_E = 0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | -350 | — | V | $I_C = -1.0\text{mA}, I_B = 0$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | -5.0 | — | V | $I_E = -10\mu\text{A}, I_C = 0$ |
| Collector Cutoff Current | I_{CBO} | — | -50 | nA | $V_{CB} = -200\text{V}, I_E = 0$ |
| Collector Cutoff Current | I_{EBO} | — | -50 | nA | $V_{CE} = -3.0\text{V}, I_C = 0$ |
| ON CHARACTERISTICS (Note 5) | | | | | |
| DC Current Gain | h_{FE} | 20 | — | — | $I_C = -1.0\text{mA}, V_{CE} = -10\text{V}$ |
| | | 30 | — | | |
| | | 30 | 200 | | |
| | | 20 | 200 | | |
| | | 15 | — | | |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | — | -0.30 | V | $I_C = -10\text{mA}, I_B = -1.0\text{mA}$ |
| | | — | -0.35 | | |
| | | — | -0.50 | | |
| | | — | -1.0 | | |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | — | -0.75 | V | $I_C = -10\text{mA}, I_B = -1.0\text{mA}$ |
| | | — | -0.85 | | |
| | | — | -0.90 | | |
| Base-Emitter On Voltage | $V_{BE(ON)}$ | — | -2.0 | V | $I_C = -100\text{mA}, V_{CE} = -10\text{V}$ |
| SMALL SIGNAL CHARACTERISTICS | | | | | |
| Output Capacitance | C_{obo} | — | 7.0 | pF | $V_{CB} = -20\text{V}, f = 1.0\text{MHz}, I_E = 0$ |
| Transition Frequency | f_T | 50 | — | MHz | $V_{CE} = -10\text{V}, I_C = -20\text{mA}$ |

Notes: 5. Short duration pulse test used to minimize self-heating effect.

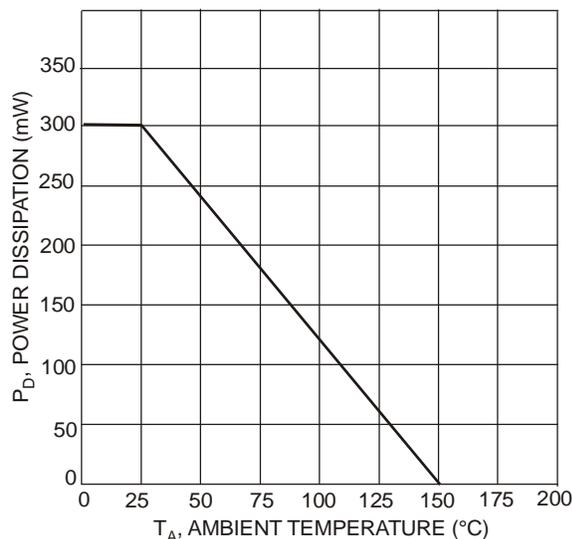


Fig. 1, Max Power Dissipation vs. Ambient Temperature

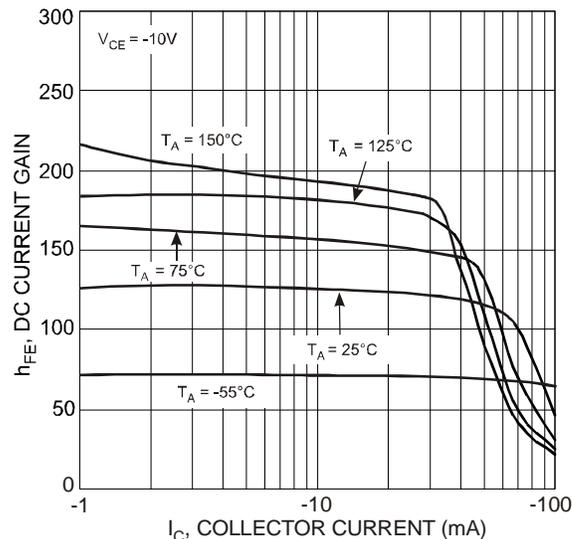


Fig. 2, DC Current Gain vs. Collector Current

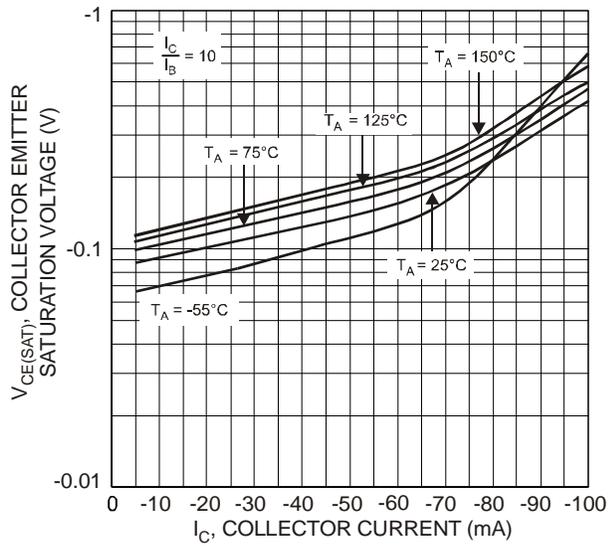


Fig. 3, Collector-Emitter Saturation Voltage vs. Collector Current

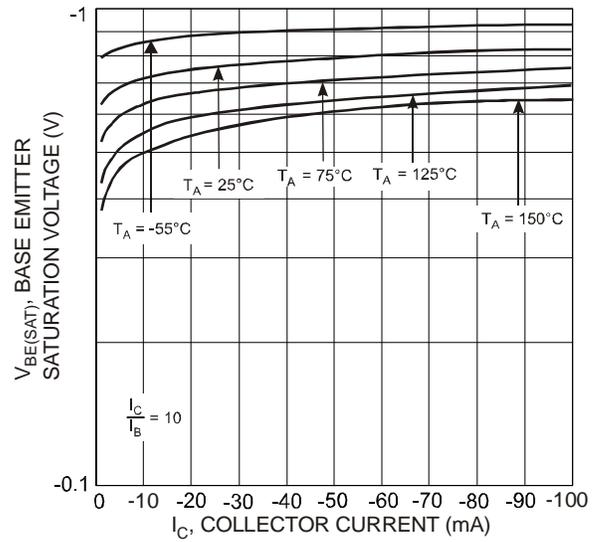


Fig. 4, Base-Emitter Saturation Voltage vs. Collector Current

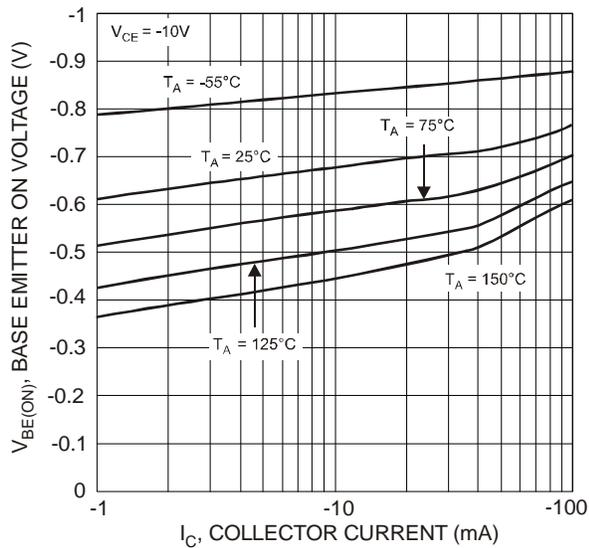


Fig. 5, Base-Emitter On Voltage vs. Collector Current

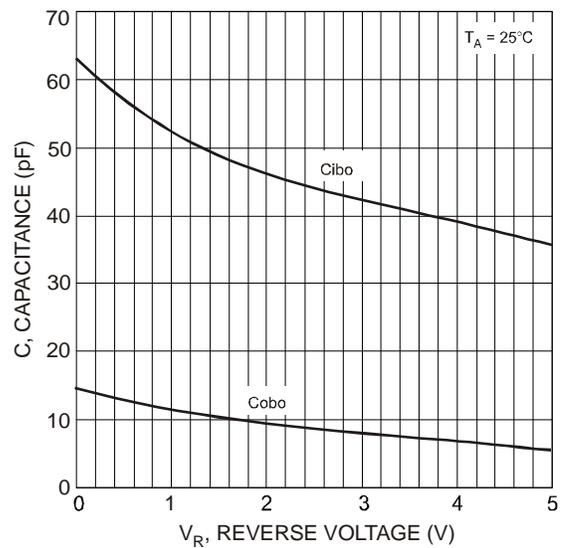


Fig. 6, Capacitance vs. Reverse Voltage