



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



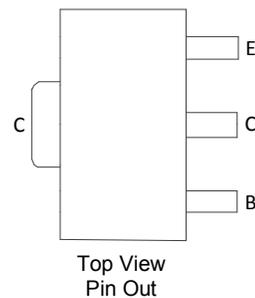
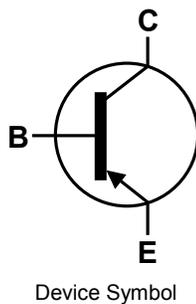
企业QQ二维码

Features

- $BV_{CEO} = -30V$
- $I_C = -1A$ Continuous Current
- Low Saturation Voltage $V_{CE(sat)} < -0.35V @ -1A$

Mechanical Data

- Case: SOT89
- Case Material: Molded Plastic. "Green" Molding Compound. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 ③
- Weight: 0.05 grams (Approximate)



Absolute Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

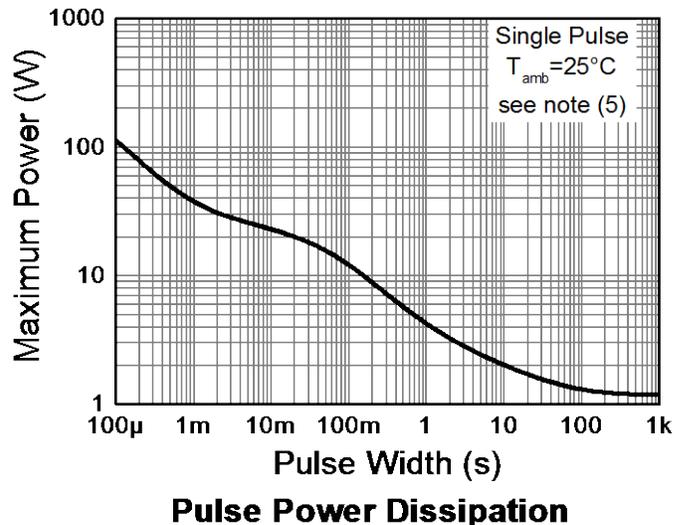
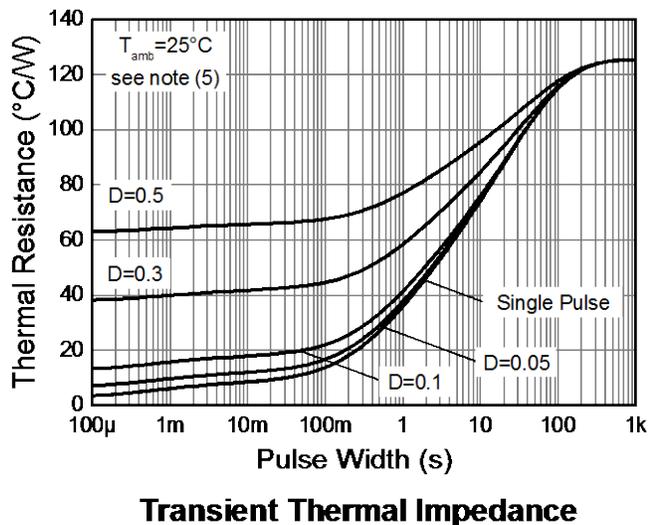
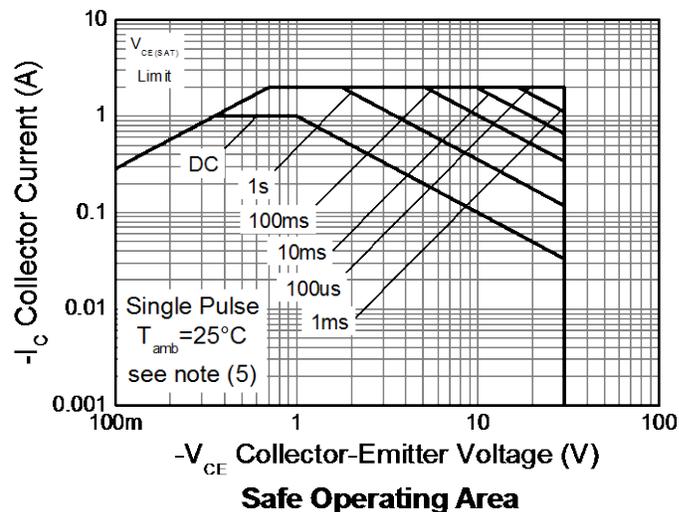
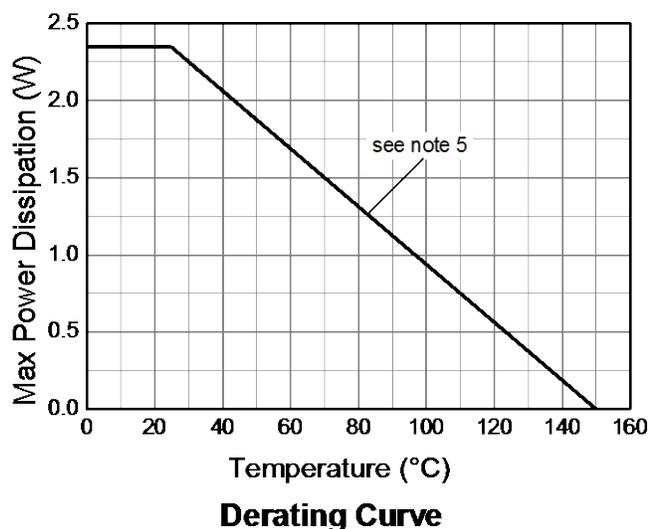
| Characteristic | Symbol | Value | Unit |
|------------------------------|-----------|-------|------|
| Collector-Base Voltage | V_{CBO} | -50 | V |
| Collector-Emitter Voltage | V_{CEO} | -30 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Continuous Collector Current | I_C | -1 | A |
| Peak Pulse Current | I_{CM} | -2 | A |
| Base Current | I_B | -200 | mA |

Thermal Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|---|----------------|-------------|------------------|
| Power Dissipation (Note 6) | P_D | 2.3 | W |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

Notes: 5. For a device surface mounted on 25mm x 25mm x 0.6mm FR4 PCB with high coverage of single sided 2oz copper, in still air conditions; device measured when operating in steady state condition.

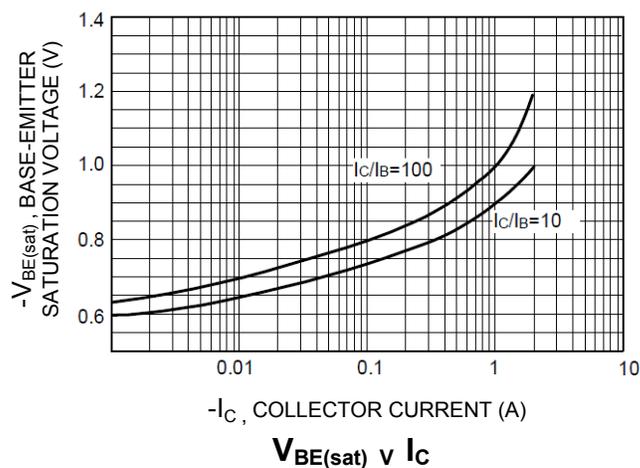
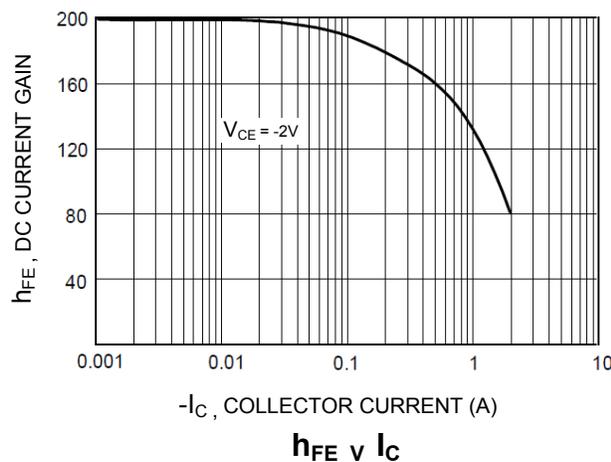
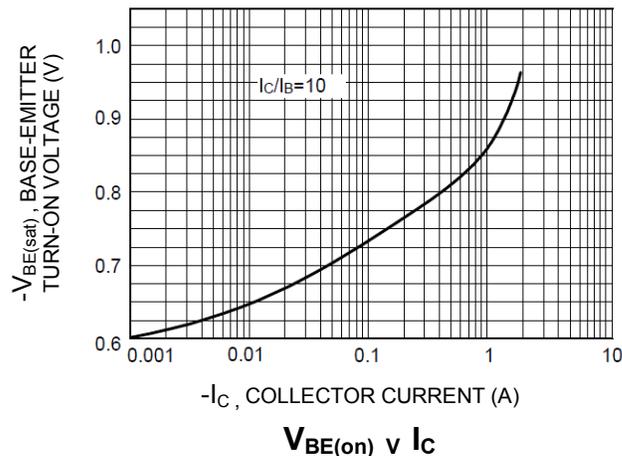
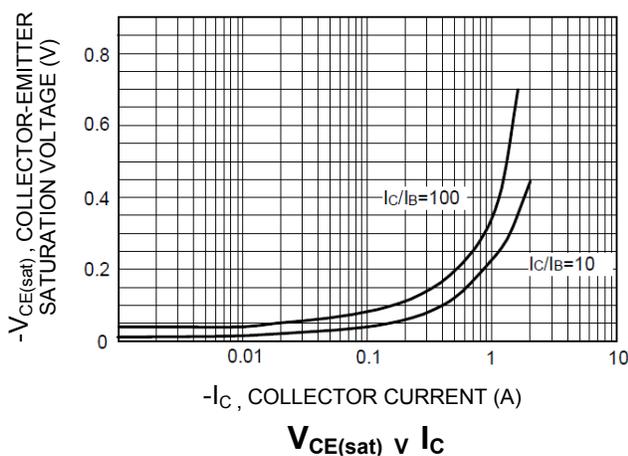
Thermal Characteristics and Derating Information



Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

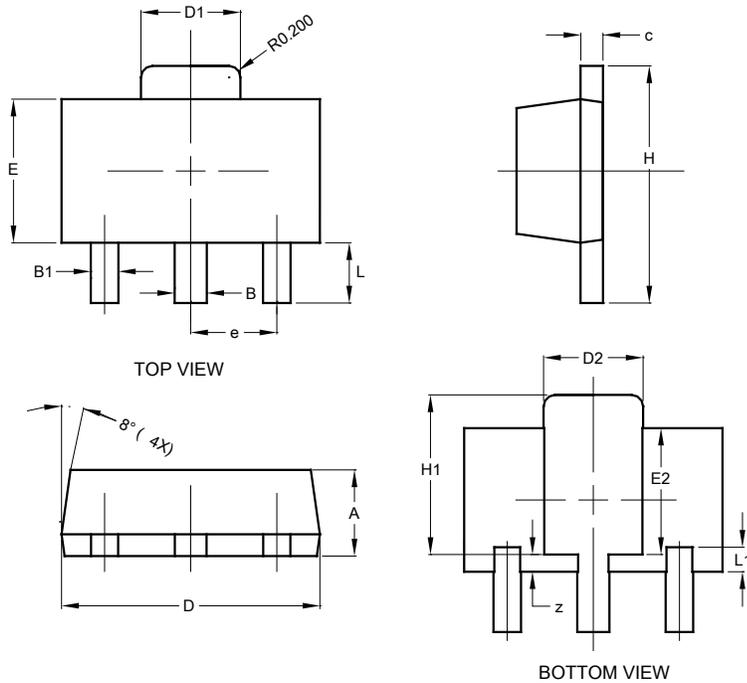
| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|---------------|------------------------|-----|--------------------|------|---|
| Collector-Base Breakdown Voltage | BV_{CBO} | -50 | — | — | V | $I_C = -100\mu\text{A}$ |
| Collector- Emitter Breakdown Voltage (Note 6) | BV_{CEO} | -30 | — | — | V | $I_C = -10\text{mA}$ |
| Emitter-Base Breakdown Voltage | BV_{EBO} | -5 | — | — | V | $I_E = -100\mu\text{A}$ |
| Collector Cut-Off Current | I_{CBO} | — | — | -100 | nA | $V_{CB} = -30\text{V}$ |
| Emitter Cut-Off Current | I_{EBO} | — | — | -100 | nA | $V_{EB} = -4\text{V}$ |
| Collector Emitter Cut-Off Current | I_{CES} | — | — | -100 | nA | $V_{CES} = -30\text{V}$ |
| Collector-Emitter Saturation Voltage (Note 6) | $V_{CE(sat)}$ | — | — | -0.35 -0.65 | V | $I_C = -1\text{A}, I_B = -100\text{mA}$ $I_C = -2\text{A}, I_B = -200\text{mA}$ |
| Base-Emitter Saturation Voltage (Note 6) | $V_{BE(sat)}$ | — | — | -1.2 | V | $I_C = -1\text{A}, I_B = -100\text{mA}$ |
| Base-Emitter Turn-On Voltage (Note 6) | $V_{BE(on)}$ | — | — | -1.1 | V | $I_C = -1\text{A}, V_{CE} = -2\text{V}$ |
| DC Current Gain (Note 6) | h_{FE} | 100 100 80 40 | — | — 300 — — | — | $I_C = -1\text{mA}, V_{CE} = -2\text{V}$ $I_C = -0.5\text{A}, V_{CE} = -2\text{V}$ $I_C = -1\text{A}, V_{CE} = -2\text{V}$ $I_C = -2\text{A}, V_{CE} = -2\text{V}$ |
| Transitional frequency | f_T | 100 | — | — | MHz | $I_C = -100\text{mA}, V_{CE} = -5\text{V}$ $f = 100\text{MHz}$ |
| Output Capacitance | C_{obo} | — | — | 15 | pF | $V_{CB} = -10\text{V}, f = 1\text{MHz}$ |

 Note: 6. Measured under pulsed conditions. Pulse width $\leq 300\mu\text{s}$. Duty cycle $\leq 2\%$.

Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)


Package Outline Dimensions

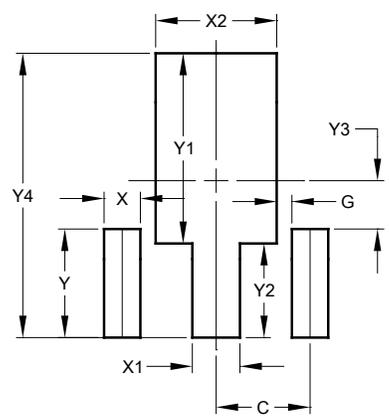
SOT89



| SOT89 | | | |
|----------------------|-------|-------|-------|
| Dim | Min | Max | Typ |
| A | 1.40 | 1.60 | 1.50 |
| B | 0.50 | 0.62 | 0.56 |
| B1 | 0.42 | 0.54 | 0.48 |
| c | 0.35 | 0.43 | 0.38 |
| D | 4.40 | 4.60 | 4.50 |
| D1 | 1.62 | 1.83 | 1.733 |
| D2 | 1.61 | 1.81 | 1.71 |
| E | 2.40 | 2.60 | 2.50 |
| E2 | 2.05 | 2.35 | 2.20 |
| e | - | - | 1.50 |
| H | 3.95 | 4.25 | 4.10 |
| H1 | 2.63 | 2.93 | 2.78 |
| L | 0.90 | 1.20 | 1.05 |
| L1 | 0.327 | 0.527 | 0.427 |
| z | 0.20 | 0.40 | 0.30 |
| All Dimensions in mm | | | |

Suggested Pad Layout

SOT89



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 1.500 |
| G | 0.244 |
| X | 0.580 |
| X1 | 0.760 |
| X2 | 1.933 |
| Y | 1.730 |
| Y1 | 3.030 |
| Y2 | 1.500 |
| Y3 | 0.770 |
| Y4 | 4.530 |