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FJC1963

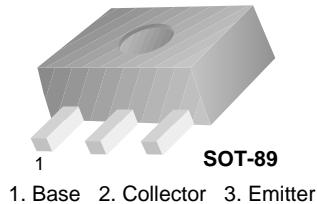
NPN Epitaxial Silicon Transistor

June 2009

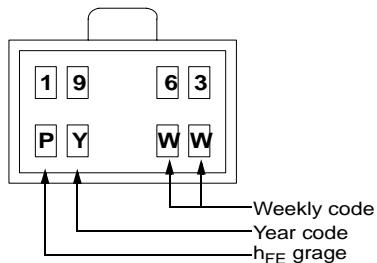
FJC1963 — NPN Epitaxial Silicon Transistor

Features

- Audio Power Amplifier Applications
- Complement to FJC1308
- High Collector Current
- Low Collector-Emitter Saturation Voltage



Marking



Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------|---------------------------|---------------|------------------|
| V_{CBO} | Collector-Base Voltage | 50 | V |
| V_{CEO} | Collector-Emitter Voltage | 30 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current (DC) | 3 | A |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | - 55 to + 150 | $^\circ\text{C}$ |

Thermal Characteristics

| Symbol | Parameter | Value | Units |
|-----------|--|-------|---------------------------|
| P_D | Power Dissipation ($T_A=25^\circ\text{C}$) | 0.5 | W |
| R_{0JA} | Thermal Resistance, Junction to Ambient | 250 | $^\circ\text{C}/\text{W}$ |

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

| Symbol | Parameter | Test conditions | Min. | Max. | Units |
|----------------------|--------------------------------------|---|------|------|---------------|
| BV_{CBO} | Collector-Base Breakdown Voltage | $I_C = 50\mu\text{A}, I_E = 0$ | 50 | | V |
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C = 1\text{mA}, I_B = 0$ | 30 | | V |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E = 50\mu\text{A}, I_C = 0$ | 6 | | V |
| I_{CEO} | Collector Cut-off Current | $V_{CE} = 40\text{V}, V_B = 0$ | | 0.5 | μA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB} = 5\text{V}, I_C = 0$ | | 0.5 | μA |
| h_{FE} | DC Current Gain | $V_{CE} = 2\text{V}, I_C = 0.5\text{A}$ | 120 | 560 | |
| $V_{CE(\text{sat})}$ | Collector-Emitter Saturation Voltage | $I_C = 1.5\text{A}, I_B = 0.15\text{A}$ | | 0.45 | V |
| $V_{BE(\text{sat})}$ | Base-Emitter Saturation Voltage | $I_C = 1.5\text{A}, I_B = 0.15\text{A}$ | | 1.2 | V |

h_{FE} Classification

| Classification | Q | R | S |
|----------------|-----------|-----------|-----------|
| h_{FE} | 120 ~ 270 | 180 ~ 390 | 280 ~ 560 |

Package Marking and Ordering Information

| Device Marking | Device | Package | Reel Size | Tape Width | Quantity |
|----------------|---------|---------|-----------|------------|----------|
| 1963 | FJC1963 | SOT-89 | 13" | -- | 4,000 |

Typical Performance Characteristics

Figure 1. Static Characteristic

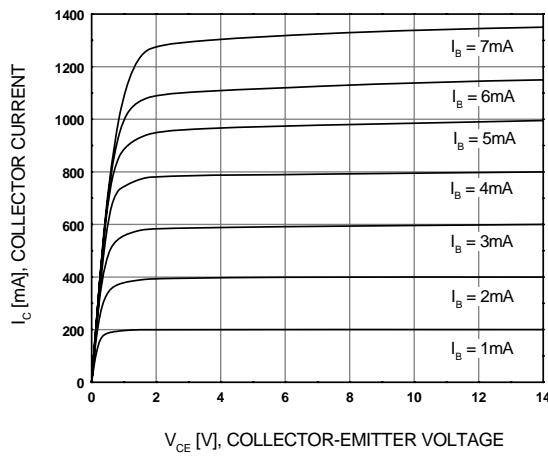


Figure 2. DC Current Gain

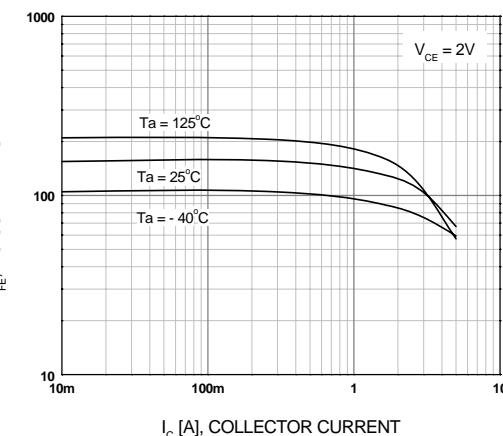


Figure 3. Collector-Emitter Saturation Voltage

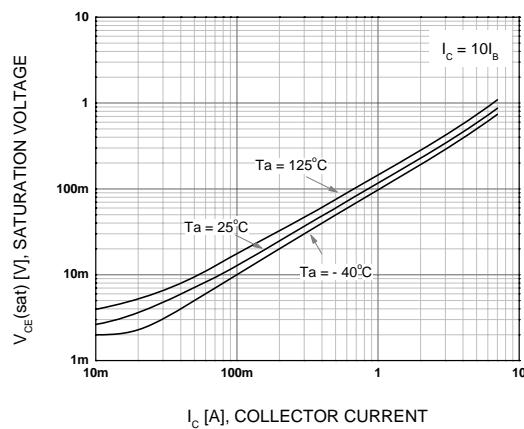


Figure 4. Base-Emitter Saturation Voltage

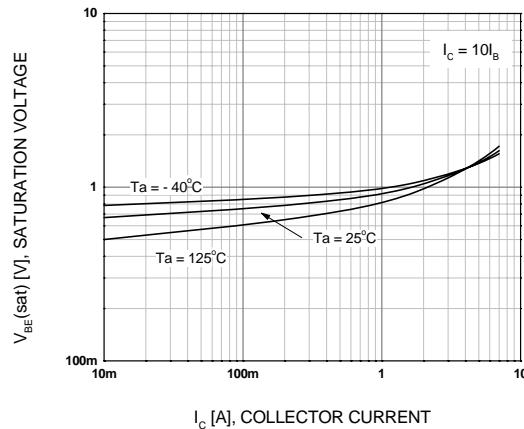


Figure 5. Base-Emitter On Voltage

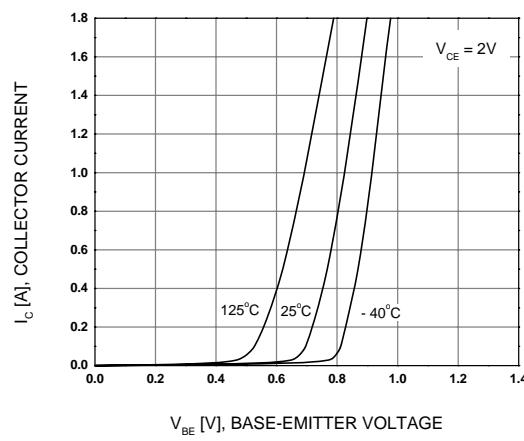
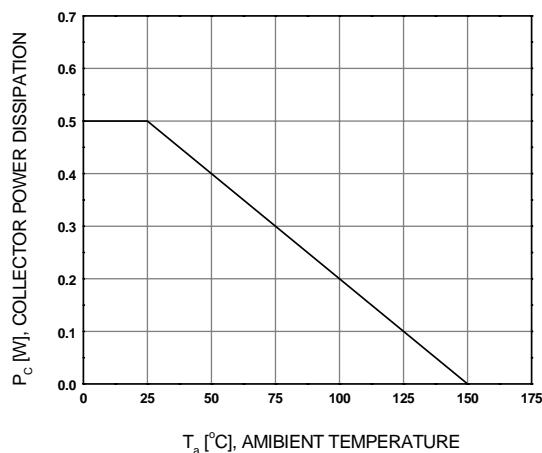
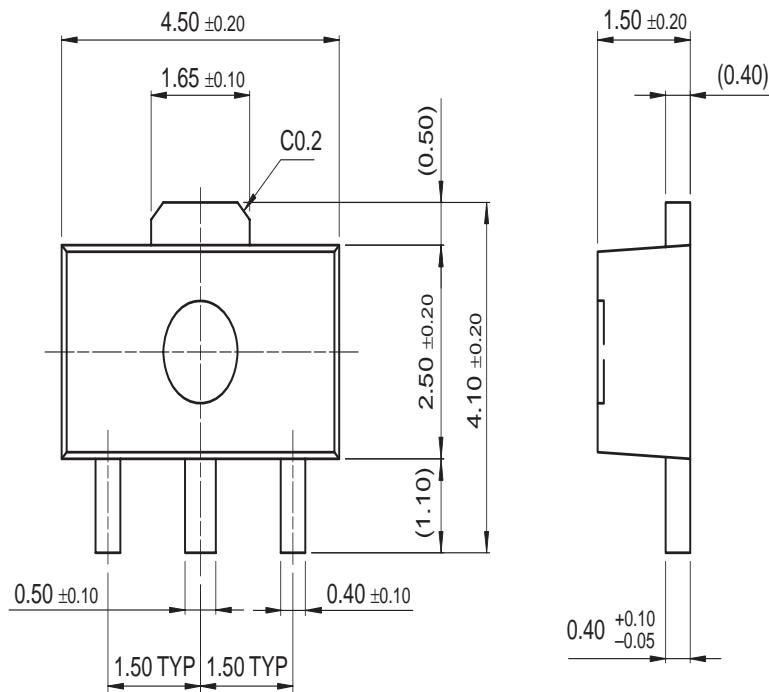


Figure 6. Power Derating



Physical Dimensions**SOT-89**

Dimensions in Millimeters



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|--------------------------|-----------------------|---|
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