

TRIPLE DIFFUSED PLANER TYPE

ULTRA HIGH β TRANSISTOR

HIGH VOLTAGE POWER AMPLIFIER

Features

- High D.C. current gain
- Low saturation voltage
- High reliability

Applications

- Audio power amplifiers
- Relay & solenoid drivers
- Motor controls
- General purpose power amplifiers
- Including zener diode

Maximum ratings and characteristics

- Absolute maximum ratings ($T_c=25^\circ\text{C}$ unless otherwise specified)

| Item | Symbol | Ratings | Unit |
|--------------------------------|----------------|-------------|------------------|
| Collector-Base voltage | V_{CBO} | (450) | V |
| Collector-Emitter voltage | V_{CEO} | (450) | V |
| Collector-Emitter voltage | $V_{CEO(SUS)}$ | 300 | V |
| Emitter-Base voltage | V_{EBO} | 6 | V |
| Zener voltage | V_Z | 300 | V |
| Collector current | I_C | 6 | A |
| Base current | I_B | 2.5 | A |
| Collector power dissipation | P_C | 40 | W |
| Operating junction temperature | T_j | +150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -40 to +150 | $^\circ\text{C}$ |

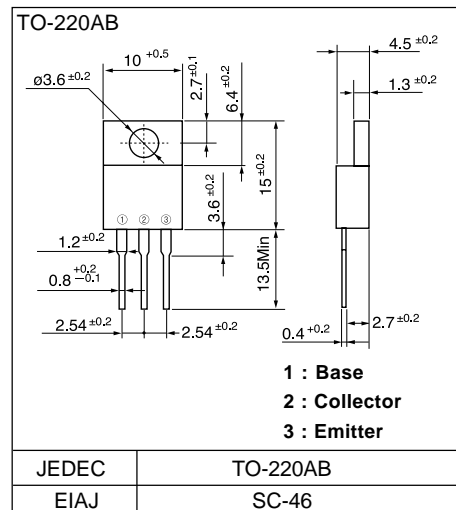
- Electrical characteristics ($T_c = 25^\circ\text{C}$ unless otherwise specified)

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|--------------------------------------|----------------|---------------------------------------|-------|------|------|-------|
| Collector-Base voltage | V_{CBO} | $I_{CBO} = 0.1\text{mA}$ | (450) | | | V |
| Collector-Emitter voltage | V_{CEO} | $I_{CEO} = 1\text{mA}$ | (450) | | | V |
| Collector-Emitter voltage | $V_{CEO(SUS)}$ | $I_C = 8\text{A}$ | 300 | | | V |
| Emitter-Base voltage | V_{EBO} | $I_{EBO} = 150\text{mA}$ | 6 | | | V |
| Zener voltage | V_Z | $I_Z = 0.1\text{mA}$ | 300 | | 450 | V |
| Collector-Base leakage current | I_{CBO} | $V_{CBO} = 300\text{V}$ | | | 0.1 | mA |
| Emitter-Base leakage current | I_{EBO} | $V_{EBO} = 6\text{V}$ | | | 150 | mA |
| D.C. current gain | h_{FE} | $I_C = 4\text{A}, V_{CE} = 2\text{V}$ | 500 | | | |
| Collector-Emitter saturation voltage | $V_{CE(Sat)}$ | $I_C = 4\text{A}, I_B = 15\text{mA}$ | | | 1.5 | V |
| Base-Emitter saturation voltage | $V_{BE(Sat)}$ | | | | 2.0 | V |

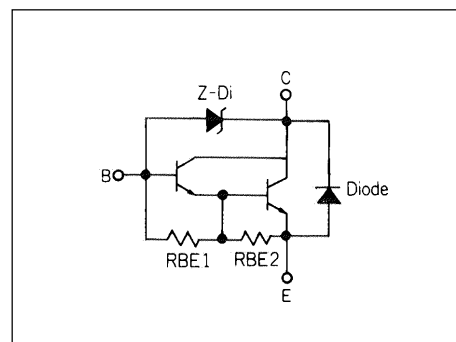
- Thermal characteristics

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|--------------------|---------------|------------------|------|------|------|--------------------|
| Thermal resistance | $R_{th(j-c)}$ | Junction to case | | | 3.0 | $^\circ\text{C/W}$ |

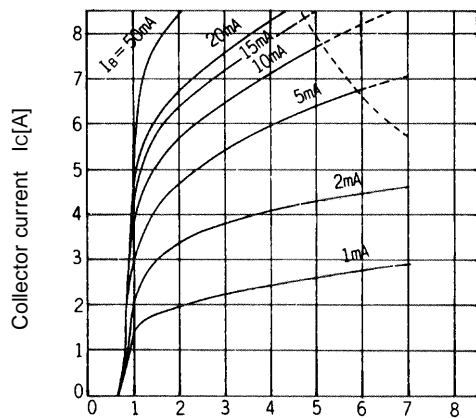
Outline Drawings



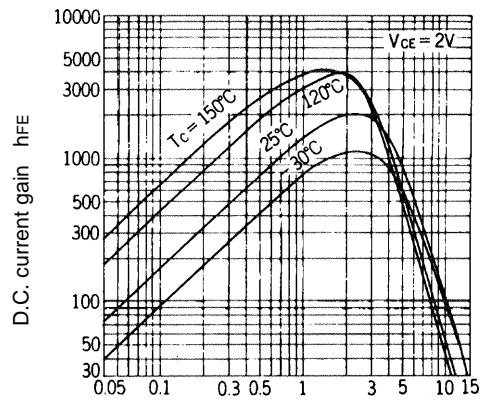
Equivalent Circuit Schematic



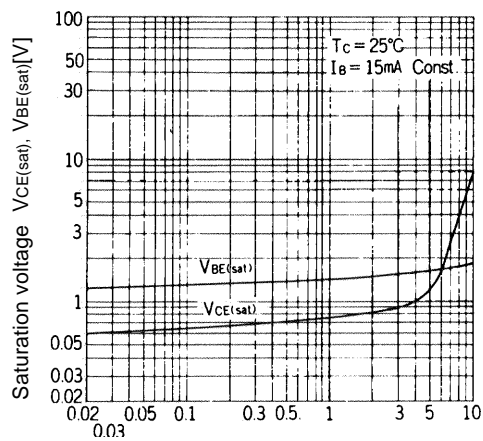
Characteristics



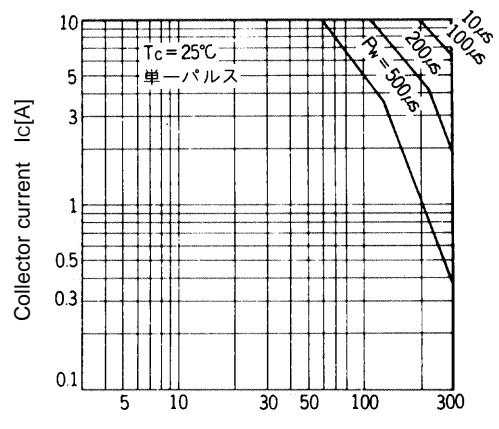
Collector-Emitter voltage $V_{CE}[V]$
Collector Output Characteristics



Collector current $I_C[A]$
DC Current Gain



Base and Collector Saturation Voltage



Safe Operating Area