

TRIPLE DIFFUSED PLANER TYPE  
HIGH POWER DARLINGTON  
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

### Maximum ratings and characteristics

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

| Item                           | Symbol    | Ratings     | Unit             |
|--------------------------------|-----------|-------------|------------------|
| Collector-Base voltage         | $V_{CBO}$ | 300         | V                |
| Collector-Emitter voltage      | $V_{CEO}$ | 250         | V                |
| Emitter-Base voltage           | $V_{EBO}$ | 30          | V                |
| Collector current              | $I_C$     | 4           | A                |
| Base current                   | $I_B$     | 0.3         | A                |
| Collector power dissipation    | $P_C$     | 60          | W                |
| Operating junction temperature | $T_j$     | +150        | $^\circ\text{C}$ |
| Storage temperature            | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

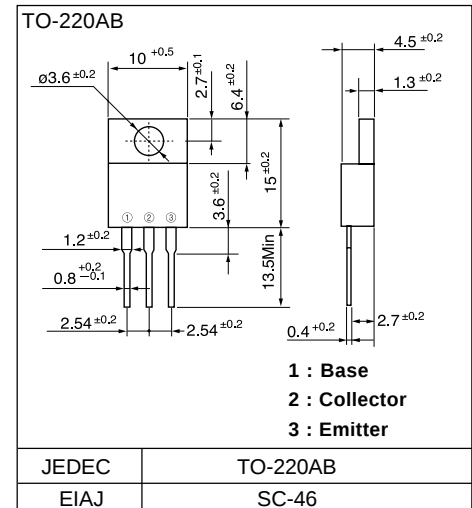
- Electrical characteristics ( $T_c=25^\circ\text{C}$  unless otherwise specified)

| Item                                 | Symbol        | Test Conditions                       | Min. | Typ. | Max. | Units |
|--------------------------------------|---------------|---------------------------------------|------|------|------|-------|
| Collector-Base voltage               | $V_{CBO}$     | $I_{CBO} = 0.1\text{mA}$              | 300  |      |      | V     |
| Collector-Emitter voltage            | $V_{CEO}$     | $I_{CEO} = 10\text{mA}$               | 250  |      |      | V     |
| Emitter-Base voltage                 | $V_{EBO}$     | $I_{EBO} = 10\text{mA}$               | 30   |      |      | V     |
| Collector-Base leakage current       | $I_{CBO}$     | $V_{CBO} = 300\text{V}$               |      |      | 0.1  | mA    |
| Emitter-Base leakage current         | $I_{EBO}$     | $V_{EBO} = 30\text{V}$                |      |      | 0.1  | mA    |
| D.C. current gain                    | $h_{FE}$      | $I_C = 2\text{A}, V_{CE} = 2\text{V}$ | 1000 |      |      |       |
| Collector-Emitter saturation voltage | $V_{CE(Sat)}$ | $I_C = 1\text{A}, I_B = 10\text{mA}$  |      |      | 1.5  | V     |
| Base-Emitter saturation voltage      | $V_{BE(Sat)}$ |                                       |      |      | 2.0  | V     |

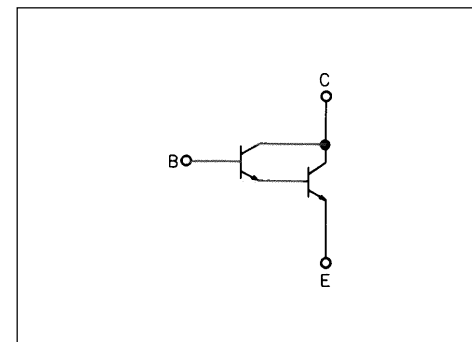
### Thermal characteristics

| Item               | Symbol        | Test Conditions  | Min. | Typ. | Max. | Units              |
|--------------------|---------------|------------------|------|------|------|--------------------|
| Thermal resistance | $R_{th(j-c)}$ | Junction to case |      |      | 2.0  | $^\circ\text{C/W}$ |

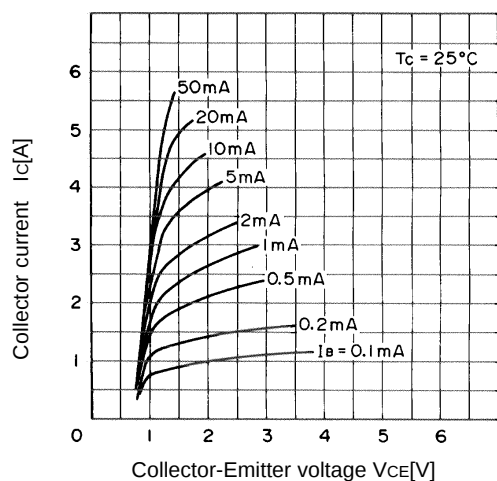
### Outline Drawings



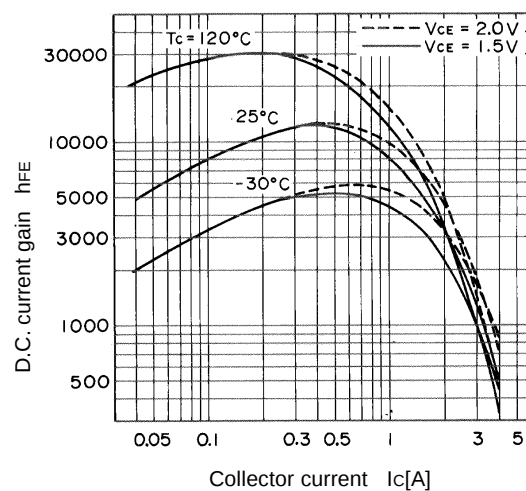
### Equivalent Circuit Schematic



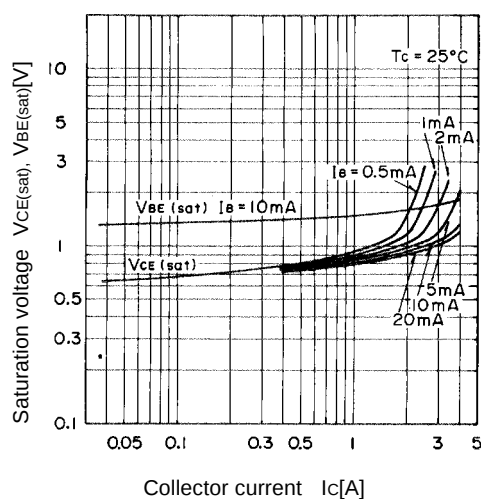
## Characteristics



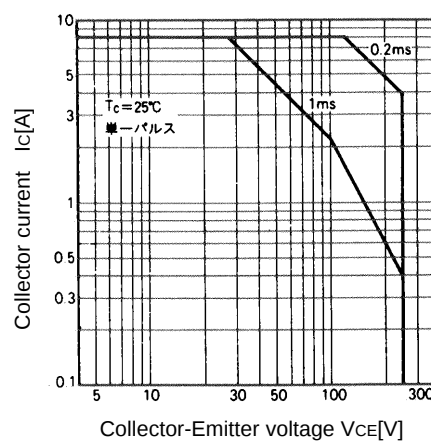
Collector Output Characteristics



DC Current Gain



Base and Collector Saturation Voltage



Safe Operating Area