

TRIPLE DIFFUSED PLANER TYPE  
 HIGH POWER DARLINGTON  
 GENERAL PURPOSE 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 (Tc=25°C unless otherwise specified)

Item	Symbol	Ratings	Unit
Collector-Base voltage	V <sub>CB0</sub>	60	V
Collector-Emitter voltage	V <sub>CE0</sub>	60	V
Collector-Emitter voltage	V <sub>CE0(SUS)</sub>	50	V
Emitter-Base voltage	V <sub>EB0</sub>	5	V
Collector current	I <sub>C</sub>	7	A
Base current	I <sub>B</sub>	0.2	A
Collector power dissipation	P <sub>C</sub>	40	W
Operating junction temperature	T <sub>j</sub>	+150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

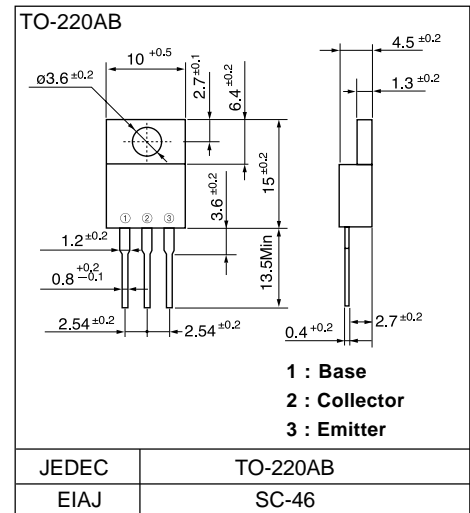
#### Electrical characteristics (Tc =25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector-Base voltage	V <sub>CB0</sub>	I <sub>CB0</sub> = 0.1mA	60			V
Collector-Emitter voltage	V <sub>CE0</sub>	I <sub>CE0</sub> = 0.1mA	60			V
Collector-Emitter voltage	V <sub>CE0(SUS)</sub>	I <sub>C</sub> = 0.1A	50			V
Emitter-Base voltage	V <sub>EB0</sub>	I <sub>EB0</sub> = 3mA	5			V
Collector-Base leakage current	I <sub>CB0</sub>	V <sub>CB0</sub> = 60V			0.1	mA
Emitter-Base leakage current	I <sub>EB0</sub>	V <sub>EB0</sub> = 5V			3.0	mA
D.C. current gain	h <sub>FE</sub>	I <sub>C</sub> = 3A, V <sub>CE</sub> = 3V	4000			
Collector-Emitter saturation voltage	V <sub>CE(Sat)</sub>	I <sub>C</sub> = 3A, I <sub>B</sub> = 6mA			1.5	V
Base-Emitter saturation voltage	V <sub>BE(Sat)</sub>				2.5	V

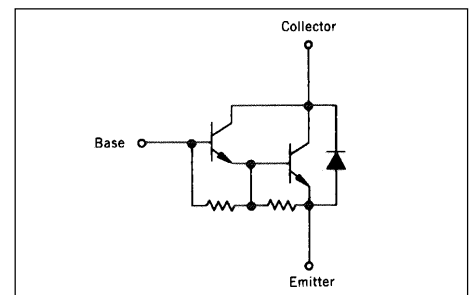
#### Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R <sub>th(j-c)</sub>	Junction to case			3.0	°C/W

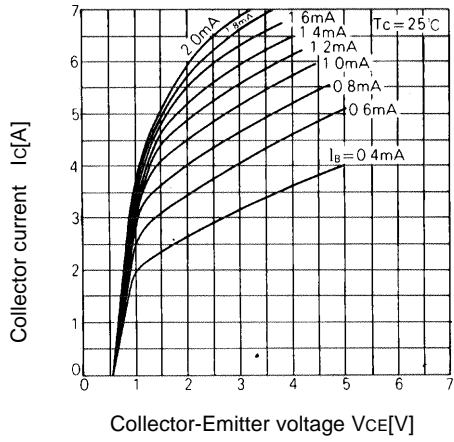
### Outline Drawings



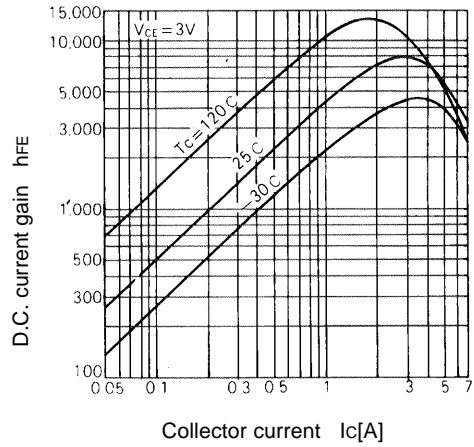
### Equivalent Circuit Schematic



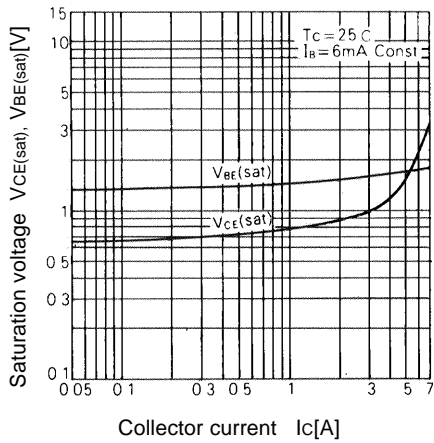
Characteristics



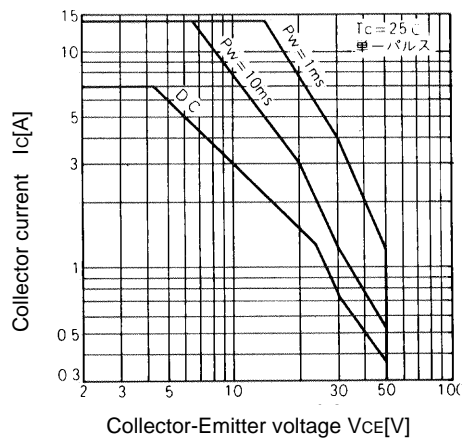
Collector Output Characteristics



DC Current Gain



Base and Collector Saturation Voltage



Safe Operating Area