

**TRIPLE DIFFUSED PLANER TYPE**  
**ULTRA HIGH  $\beta$  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	$V_{CB0}$	(450)	V
Collector-Emitter voltage	$V_{CE0}$	(450)	V
Collector-Emitter voltage	$V_{CE0(SUS)}$	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	$^\circ\text{C}$

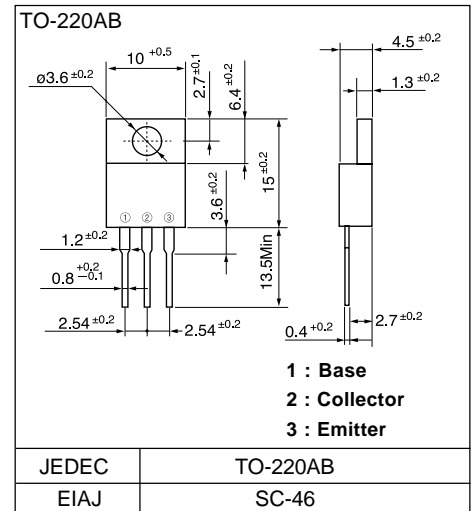
- Electrical characteristics ( $T_c = 25^\circ\text{C}$  unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector-Base voltage	$V_{CB0}$	$I_{CBO} = 0.1\text{mA}$	(450)			V
Collector-Emitter voltage	$V_{CE0}$	$I_{CEO} = 1\text{mA}$	(450)			V
Collector-Emitter voltage	$V_{CE0(SUS)}$	$I_C = 8\text{A}$	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	$I_{CBO}$	$V_{CB0} = 300\text{V}$			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

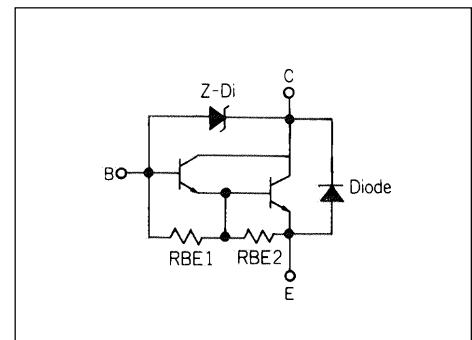
- Thermal characteristics

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

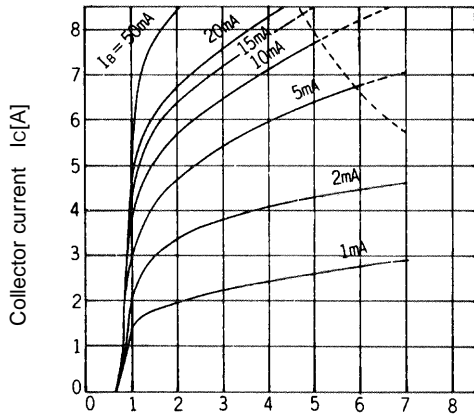
■ **Outline Drawings**



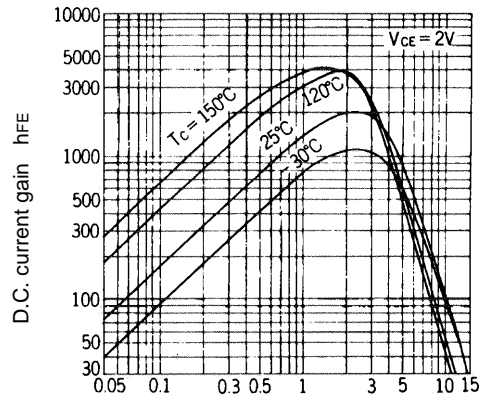
■ **Equivalent Circuit Schematic**



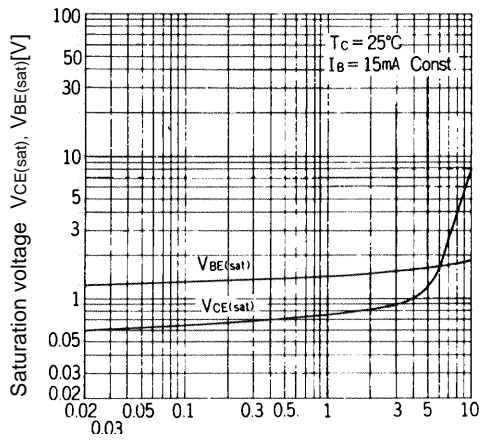
Characteristics



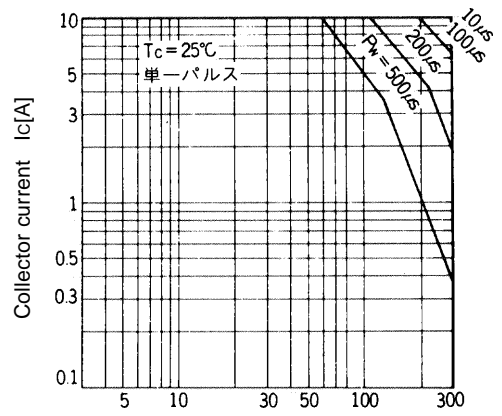
Collector-Emitter voltage  $V_{CE}[V]$   
**Collector Output Characteristics**



Collector current  $I_C[A]$   
**DC Current Gain**



Collector current  $I_C[A]$   
**Base and Collector Saturation Voltage**



Collector-Emitter voltage  $V_{CE}[V]$   
**Safe Operating Area**