

TRIPLE DIFFUSED PLANER TYPE
HIGH POWER DARLINGTON
HIGH VOLTAGE , SWITCHING

■ **Features**

- High D.C. current gain
- High reliability

■ **Applications**

- Switching regulators
- DC-DC converter
- Solid state relay
- 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 _{CB0}	450	V
Collector-Emitter voltage	V _{CEO}	450	V
Collector-Emitter voltage	V _{CEO(SUS)}	350	V
Emitter-Base voltage	V _{EBO}	20	V
Collector current	I _C	5	A
Base current	I _B	0.3	A
Collector power dissipation	P _C	60	W
Operating junction temperature	T _j	+150	°C
Storage temperature	T _{stg}	-55 to +150	°C

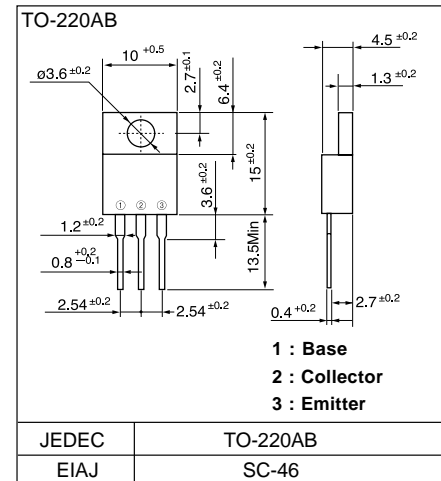
- Electrical characteristics (Tc =25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector-Base voltage	V _{CB0}	I _{CBO} = 0.1mA	450			V
Collector-Emitter voltage	V _{CEO}		-			V
Collector-Emitter voltage	V _{CEO(SUS)}	I _C = 1A	350			V
Emitter-Base voltage	V _{EBO}	I _{EBO} = 50mA	20			V
Collector-Base leakage current	I _{CBO}	V _{CB0} = 450V			0.1	mA
Emitter-Base leakage current	I _{EBO}	V _{EBO} = 20V			50	mA
D.C. current gain	h _{FE}	I _C = 3A, V _{CE} = 1.5V	500			
Collector-Emitter saturation voltage	V _{CE(Sat)}	I _C = 3A, I _B = 30mA			1.5	V
Base-Emitter saturation voltage	V _{BE(Sat)}				2.0	V
*1	t _{on}	I _C = 3A, I _{B1} = 30mA			1.5	μs
Switching time	t _{stg}	I _{B2} = -30mA, R _L = 20 ohm			12.0	μs
	t _f	P _w = 20μs, Duty = <2%			6.0	μs

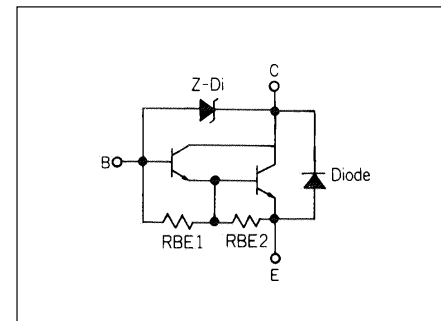
● **Thermal characteristics**

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(j-c)}	Junction to case			2.0	°C/W

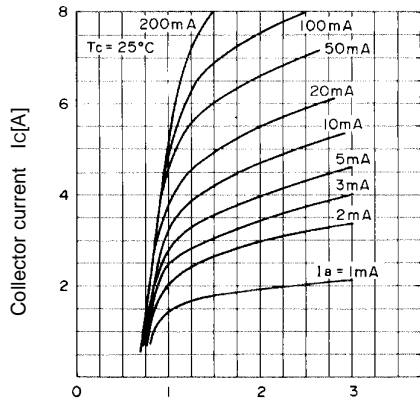
■ **Outline Drawings**



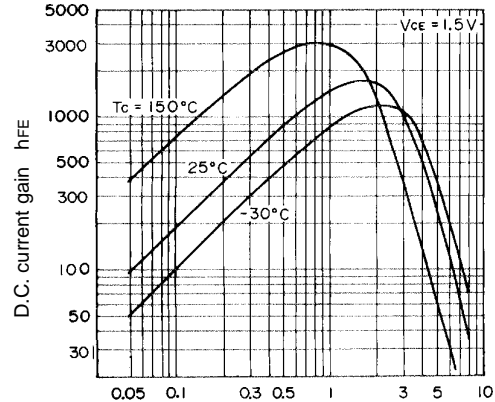
■ **Equivalent Circuit Schematic**



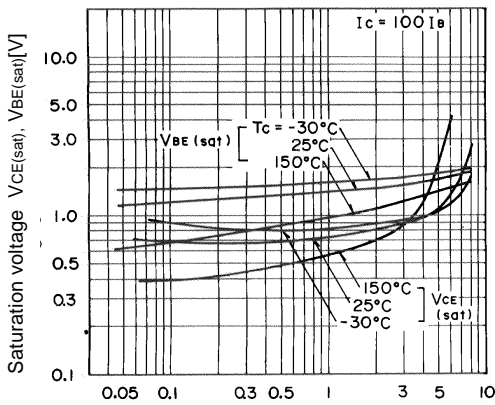
Characteristics



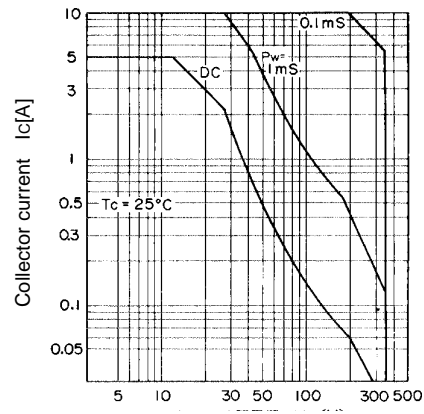
Collector Output Characteristics



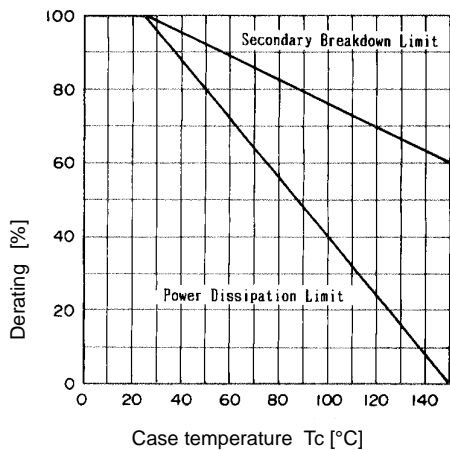
DC Current Gain



Base and Collector Saturation Voltage



Safe Operating Area



ASO Derating

*1 Switching Time Test Circuit

