

**TRIPLE DIFFUSED PLANER TYPE  
HIGH VOLTAGE, HIGH SPEED SWITCHING**

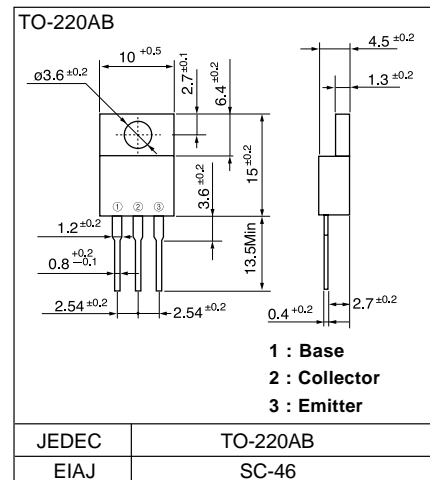
■ **Features**

- High voltage, High speed switching
- High reliability

■ **Applications**

- Switching regulators
- Ultrasonic generators
- High frequency inverters
- General purpose power amplifiers

■ **Outline Drawings**



■ **Maximum ratings and characteristics**

● **Absolute maximum ratings (Tc=25°C unless otherwise specified)**

Item	Symbol	Ratings	Unit
Collector-Base voltage	V <sub>CB0</sub>	450	V
Collector-Emitter voltage	V <sub>CEO</sub>	400	V
Collector-Emitter voltage	V <sub>CEO(SUS)</sub>	400	V
Emitter-Base voltage	V <sub>EBO</sub>	7	V
Collector current	I <sub>C</sub>	3	A
Base current	I <sub>B</sub>	1	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>	-45 to +150	°C

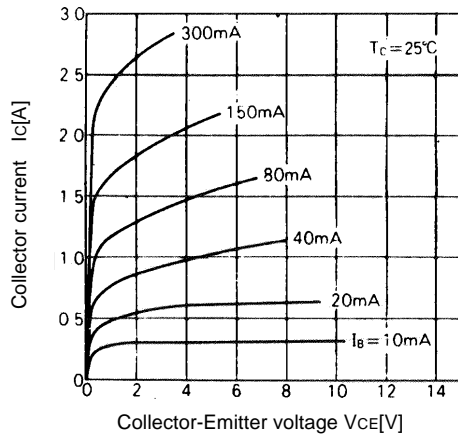
● **Electrical characteristics (Tc = 25°C unless otherwise specified)**

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector-Base voltage	V <sub>CB0</sub>	I <sub>CBO</sub> = 0.1mA	450			V
Collector-Emitter voltage	V <sub>CEO</sub>	I <sub>CEO</sub> = 10mA	400			V
Collector-Emitter voltage	V <sub>CEO(SUS)</sub>	I <sub>C</sub> = 0.5A	400	-		V
Emitter-Base voltage	V <sub>EBO</sub>	I <sub>EBO</sub> = 0.1mA	7	-		V
Collector-Base leakage current	I <sub>CBO</sub>	V <sub>CB0</sub> = 450V		-	0.1	mA
Emitter-Base leakage current	I <sub>EBO</sub>	V <sub>EBO</sub> = 7V		-	0.1	mA
D.C. current gain	h <sub>FE</sub>	I <sub>C</sub> = 0.5A, V <sub>CE</sub> = 5V	20		50	
Collector-Emitter saturation voltage	V <sub>CE(Sat)</sub>	I <sub>C</sub> = 1A, I <sub>B</sub> = 0.2A	0.1		0.3	V
Base-Emitter saturation voltage	V <sub>BE(Sat)</sub>		0.8		0.9	V
*1	t <sub>on</sub>	I <sub>C</sub> = 3A, I <sub>B1</sub> = 0.6A			1.5	μs
Switching time	t <sub>stg</sub>	I <sub>B2</sub> = -0.6A, R <sub>L</sub> = 20 ohm			2.0	μs
	t <sub>f</sub>	P <sub>w</sub> = 20μs Duty<2%			0.8	μs

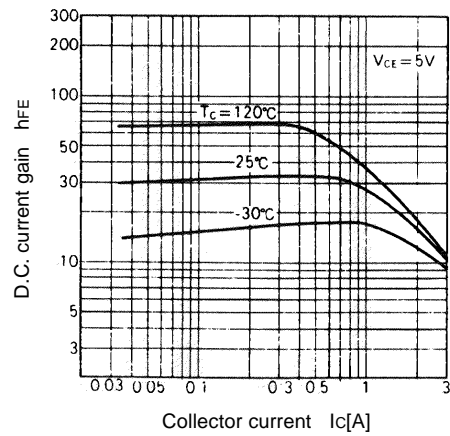
● **Thermal characteristics**

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

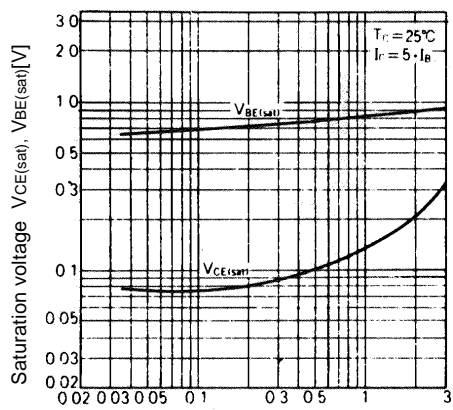
Characteristics



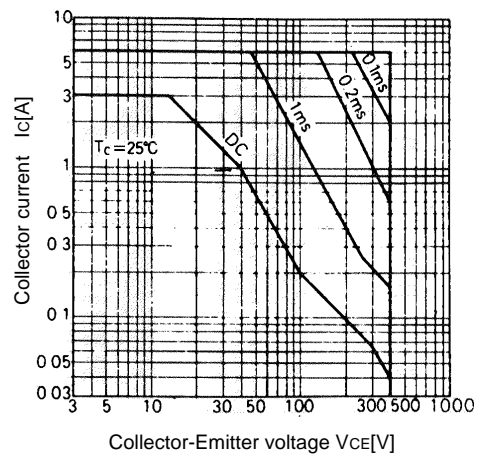
Collector Output Characteristics



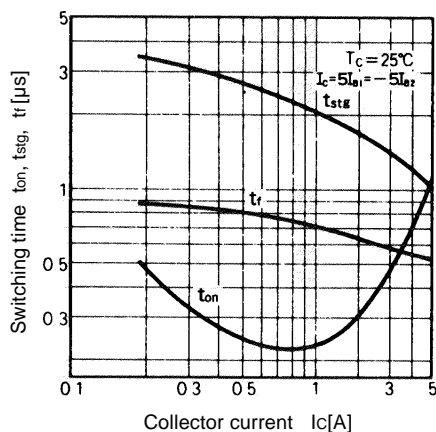
DC Current Gain



Base and Collector Saturation Voltage



Safe Operating Area



Switching Time

\*1 Switching Time Test Circuit

