

TRIPLE DIFFUSED PLANER TYPE HIGH SPEED SWITCHING

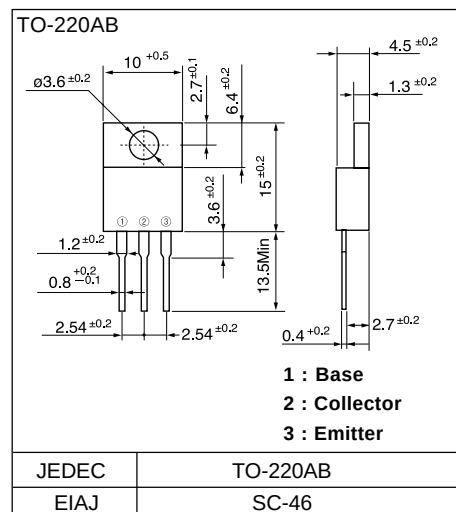
■ Features

- High speed switching
- High D.C. current gain
- Low saturation voltage
- High reliability

■ Applications

- Switching regulators
- DC-DC converter
- Solid state relay
- General purpose power amplifiers

■ Outline Drawings



■ Maximum ratings and characteristics

- Absolute maximum ratings (T_c=25°C unless otherwise specified)

Item	Symbol	Ratings	Unit
Collector-Base voltage	V _{CB0}	80	V
Collector-Emitter voltage	V _{CE0}	50	V
Emitter-Base voltage	V _{EB0}	15	V
Collector current	I _C	10	A
Base current	I _B	3	A
Collector power dissipation	P _C	50	W
Operating junction temperature	T _J	+150	°C
Storage temperature	T _{stg}	-55 to +150	°C

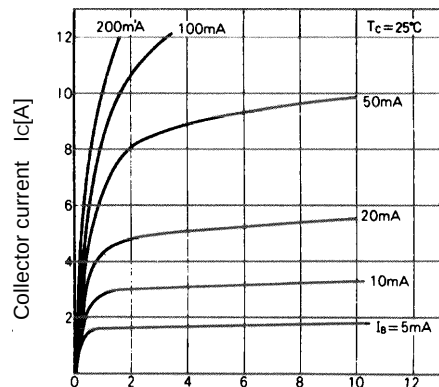
- Electrical characteristics (T_c =25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector-Base voltage	V _{CB0}	I _{CBO} = 0.1mA	80			V
Collector-Emitter voltage	V _{CE0}	I _C = 10mA	50			V
Emitter-Base voltage	V _{EB0}	I _{EB0} = 0.1mA	15			V
Collector-Base leakage current	I _{CBO}	V _{CB0} = 80V			0.01	mA
Emitter-Base leakage current	I _{EB0}	V _{EB0} = 15V			0.1	mA
D.C. current gain	h _{FE}	I _C = 1A, V _{CE} = 5V	300	500		
Collector-Emitter saturation voltage	V _{CE(Sat)}	I _C = 2A, I _B = 100mA			0.5	V
Base-Emitter saturation voltage	V _{BE(Sat)}				1.5	V
*1	t _{on}	I _C = 5A, I _{B1} = 500mA			0.5	μs
Switching time	t _{stg}	I _{B2} = -500mA, R _L = 6 ohm			3.0	μs
	t _f	P _W = 20μs, Duty = <2%			0.8	μs

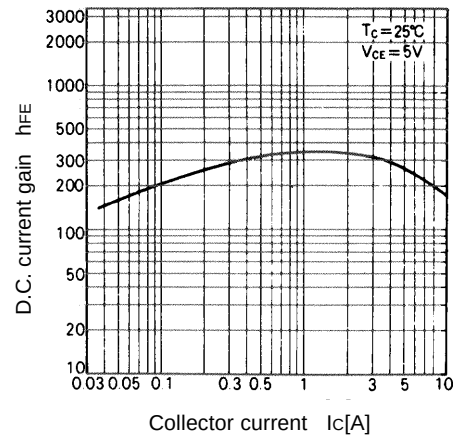
● Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(j-c)}	Junction to case			2.5	°C/W

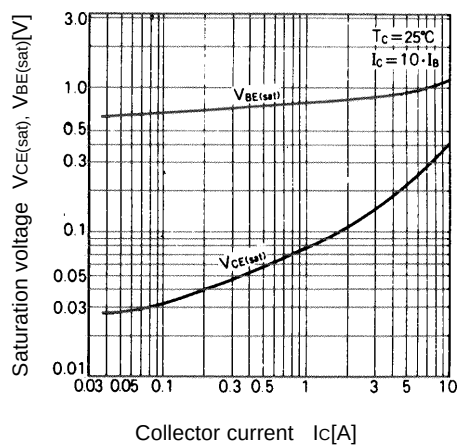
Characteristics



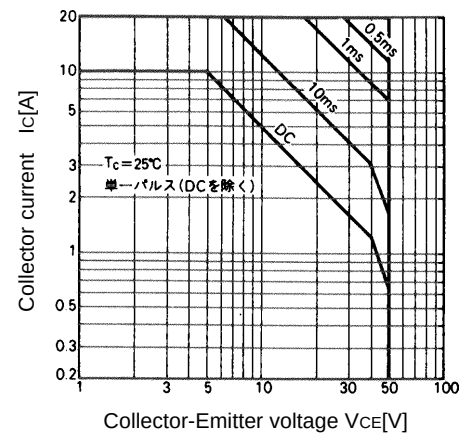
Collector-Emittor voltage V_{ce} [V]
Collector Output Characteristics



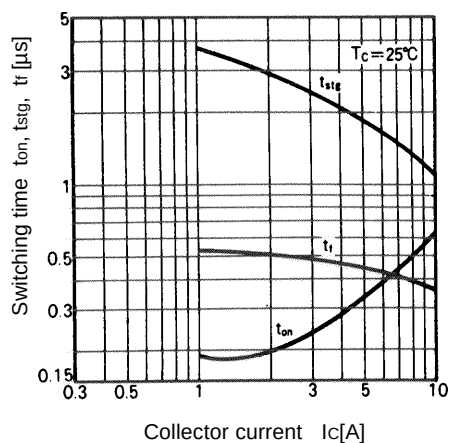
DC Current Gain



Base and Collector Saturation Voltage



Safe Operating Area



Switching Time

*1 Switching Time Test Circuit

