

TRIPLE DIFFUSED PLANER TYPE
HIGH VOLTAGE, HIGH SPEED SWITCHING

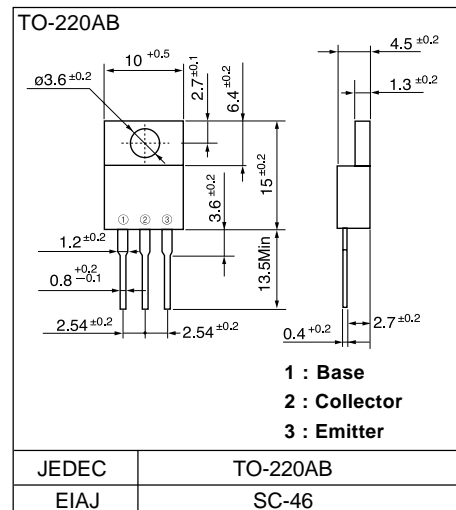
Features

- High voltage, High speed switching
- Low saturation voltage
- High reliability

Applications

- Switching regulators
- DC-DC convertor
- 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}	500	V
Collector-Emitter voltage	V _{CE0}	400	V
Emitter-Base voltage	V _{EB0}	10	V
Collector current	I _C	10	A
Base current	I _B	3	A
Collector power dissipation	P _C	40	W
Operating junction temperature	T _j	+150	°C
Storage temperature	T _{stg}	-55 to +150	°C

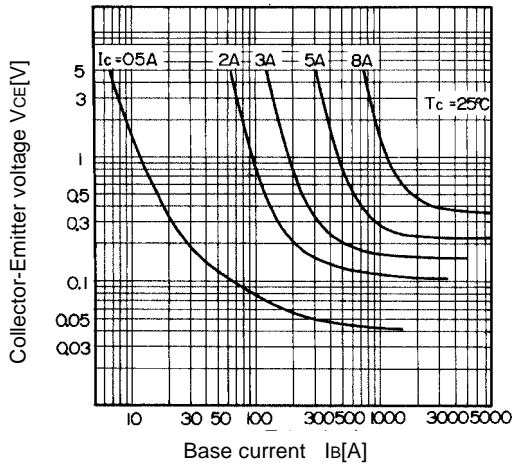
Electrical characteristics (T_c = 25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector-Base voltage	V _{CB0}	I _{CBO} = 1mA	500			V
Collector-Emitter voltage	V _{CE0}	I _{CEO} = 0.2A	400			V
Collector-Emitter voltage	V _{EB0}	I _{EBO} = 1mA	10			V
Emitter-Base voltage	I _{CBO}	V _{CB0} = 450V			0.1	mA
Collector-Base leakage current	I _{EBO}	V _{EB0} = 10V			0.1	mA
Emitter-Base leakage current	h _{FE}	I _C = 1A, V _{CE} = 5V	25		55	
D.C. current gain	V _{CE(Sat)}	I _C = 4A, I _B = 800mA			0.8	V
Collector-Emitter saturation voltage	V _{BE(Sat)}				1.2	V
Base-Emitter saturation voltage	t _{on}	I _C = 5A, I _{B1} = 500mA			1.0	μs
*1	t _{stg}	I _{B2} = -1000mA, R _L = 30 ohm			2.5	μs
Switching time	t _f	P _w = 20μs Duty = <2%			0.5	μs

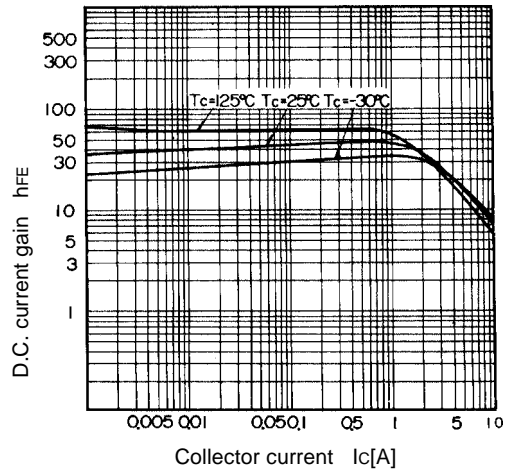
Thermal characteristics

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

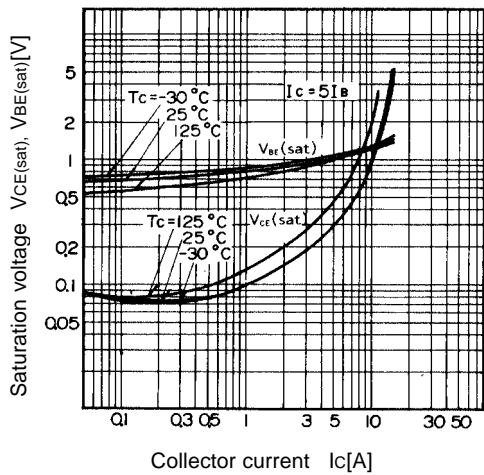
Characteristics



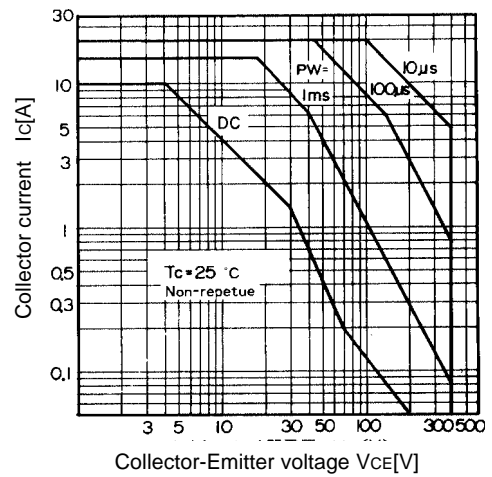
Collector Output Characteristics



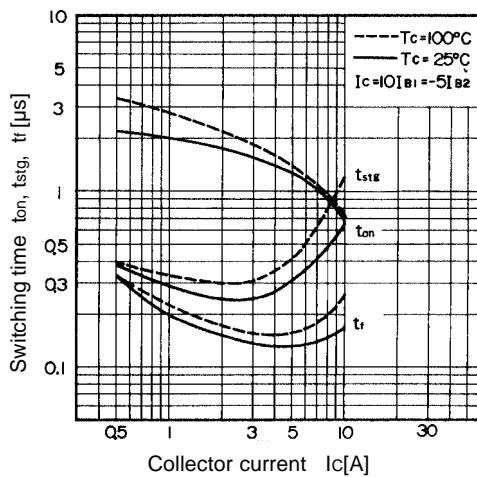
DC Current Gain



Base and Collector Saturation Voltage



Safe Operating Area



Switching Time

*1 Switching Time Test Circuit

