

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 convertors
- Solid state relay
- General purpose power amplifiers

### Maximum ratings and characteristic

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

Item	Symbol	Rating	Unit
Collector-Base voltage	V <sub>CB0</sub>	500	V
Collector-Emitter voltage	V <sub>CEO</sub>	400	V
Collector-Emitter voltage	V <sub>CEO(SUS)</sub>	-	V
Emitter-Base voltage	V <sub>EBO</sub>	10	V
Collector current	I <sub>C</sub>	15	A
Base current	I <sub>B</sub>	5	A
Collector power dissipation	P <sub>C</sub>	80	W
Operating junction temperature	T <sub>j</sub>	+150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

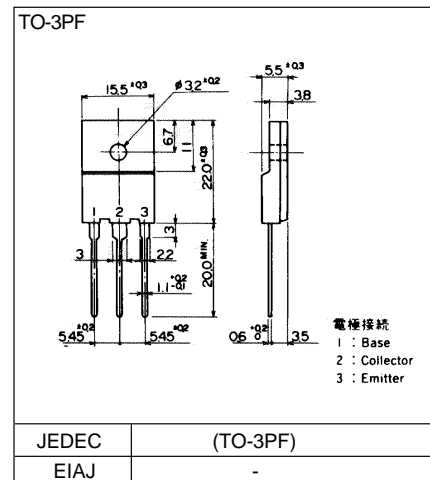
- Electrical characteristics (Tc =25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector-Base voltage	V <sub>CB0</sub>	I <sub>CB0</sub> = 1mA	500			V
Collector-Emitter voltage	V <sub>CEO</sub>					V
Collector-Emitter voltage	V <sub>CEO(SUS)</sub>	I <sub>C</sub> = 200mA	400			V
Emitter-Base voltage	V <sub>EBO</sub>	I <sub>EBO</sub> = 1mA	10			V
Collector-Base leakage current	I <sub>CB0</sub>	V <sub>CB0</sub> = 450V			0.1	mA
Emitter-Base leakage current	I <sub>EBO</sub>	V <sub>EBO</sub> = 10V			0.1	mA
D.C. current gain	h <sub>FE</sub>	I <sub>C</sub> = 2A, V <sub>CE</sub> = 5V	25		65	
Collector-Emitter saturation voltage	V <sub>CE(Sat)</sub>	I <sub>C</sub> = 6A, I <sub>B</sub> = 1.2A			0.8	V
Base-Emitter saturation voltage	V <sub>BE(Sat)</sub>				1.2	V
*1	t <sub>on</sub>	I <sub>C</sub> = 7.5A, I <sub>B1</sub> = 0.75A			1.0	μs
Switching time	t <sub>stg</sub>	I <sub>B2</sub> = -1.5A, R <sub>L</sub> = 20Ω			2.5	μs
	t <sub>f</sub>	P <sub>w</sub> = 20Ws, Duty = <2%			0.5	μs

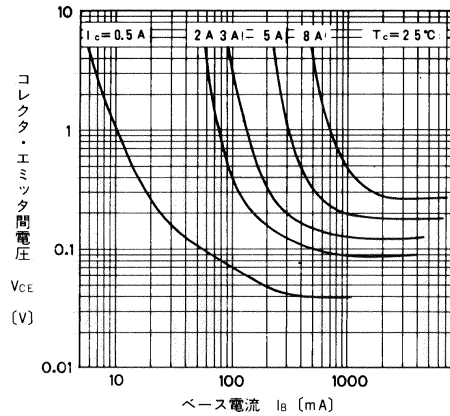
### Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R <sub>th(j-c)</sub>	Junction to case			1.56	°C/W

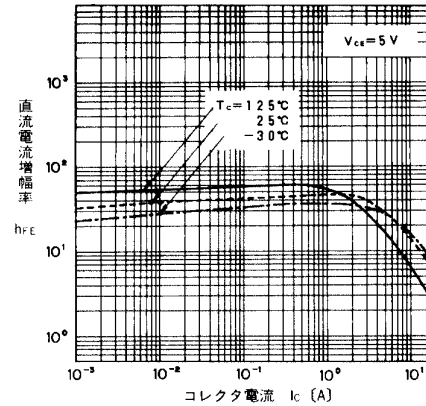
### Outline Drawings



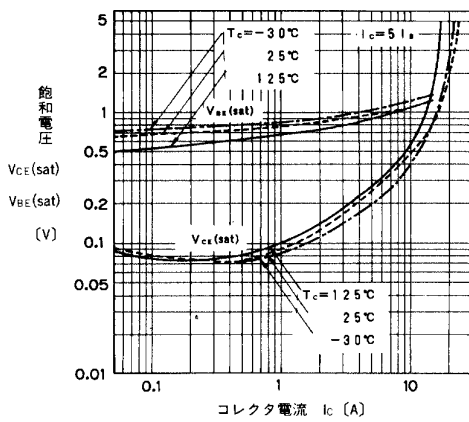
Characteristics



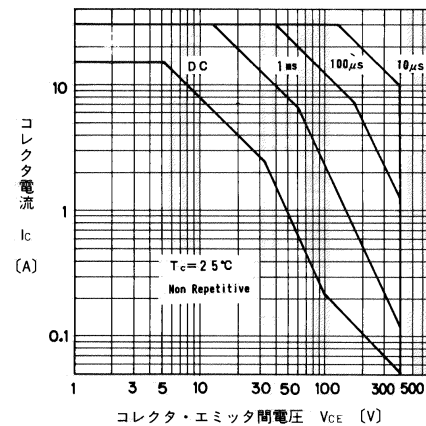
Collector Output Characteristics



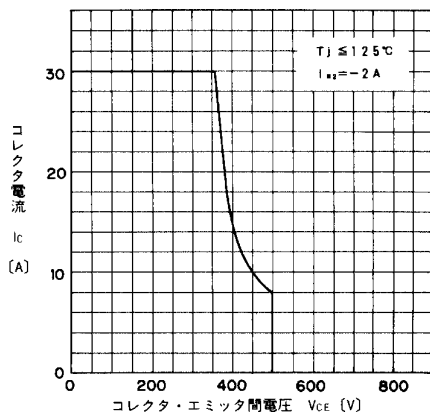
DC Current Gain



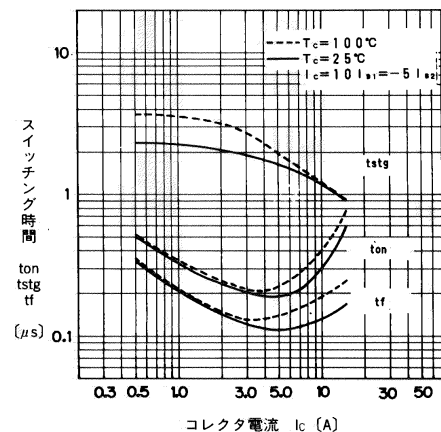
Base and Collector Saturation Voltage



Safe Operating Area



Reverse Biased Safe Operating Area



Switching Time

