

TRIPLE DIFFUSED PLANER TYPE
HIGH VOLTAGE, HIGH SPEED SWITCHING

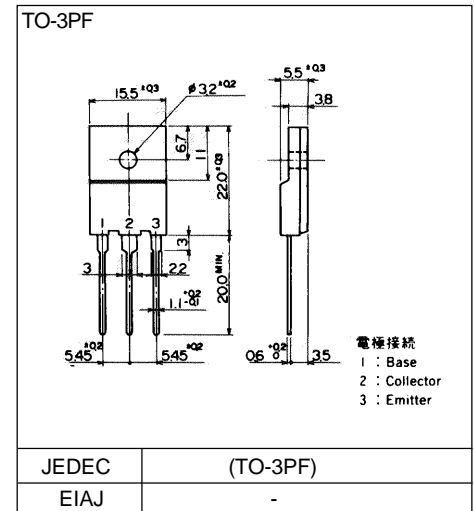
Features

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

Applications

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

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 _{CEO}	400	V
Collector-Emitter voltage	V _{CEO(SUS)}	-	V
Emitter-Base voltage	V _{EBO}	10	V
Collector current	I _C	10	A
Base current	I _B	3	A
Collector power dissipation	P _C	80	W
Operating junction temperature	T _j	+150	°C
Storage temperature	T _{stg}	-55 to +150	°C

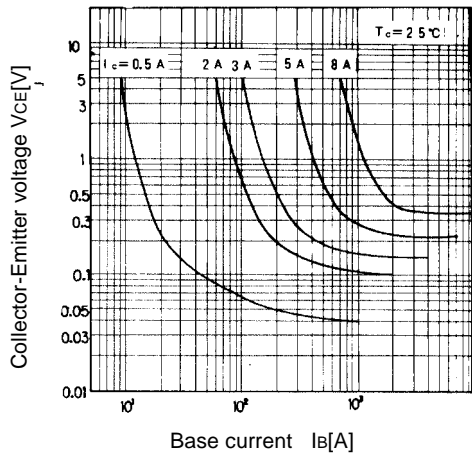
Electrical characteristics (T_c = 25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector-Base voltage	V _{CB0}	I _{CBO} = 1mA	500			V
Collector-Emitter voltage	V _{CEO}					V
Collector-Emitter voltage	V _{CEO(SUS)}	I _C = 200mA	400			V
Emitter-Base voltage	V _{EBO}	I _{EBO} = 1mA	10			V
Collector-Base leakage current	I _{CBO}	V _{CB0} = 450V			0.1	mA
Emitter-Base leakage current	I _{EBO}	V _{EBO} = 10V			0.1	mA
D.C. current gain	h _{FE}	I _C = 1A, V _{CE} = 5V	25		65	
Collector-Emitter saturation voltage	V _{CE(Sat)}	I _C = 4A, I _B = 0.8A			0.8	V
Base-Emitter saturation voltage	V _{BE(Sat)}				1.2	V
*1 Switching time	t _{on}	I _C = 5A, I _{B1} = 0.5A			1.0	μs
	t _{stg}	I _{B2} = -1A, R _L = 30 ohm			2.5	μs
	t _f	P _w = 20μs Duty = <2%			0.5	μs

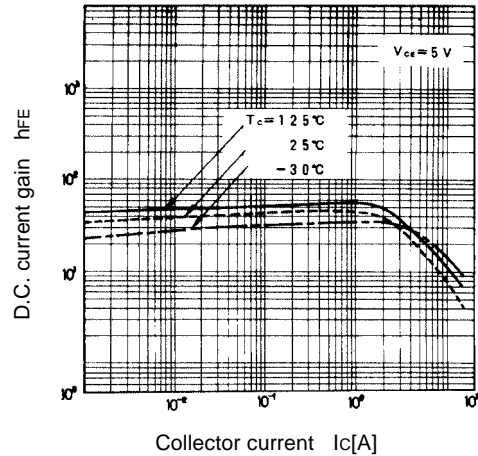
Thermal characteristics

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

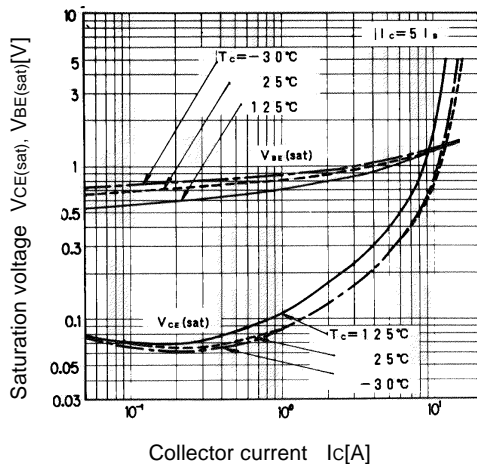
Characteristics



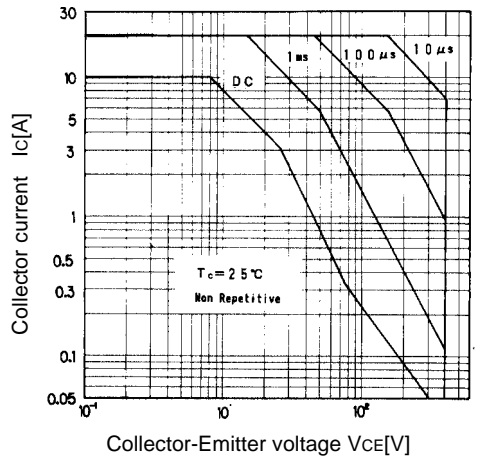
Collector Output Characteristics



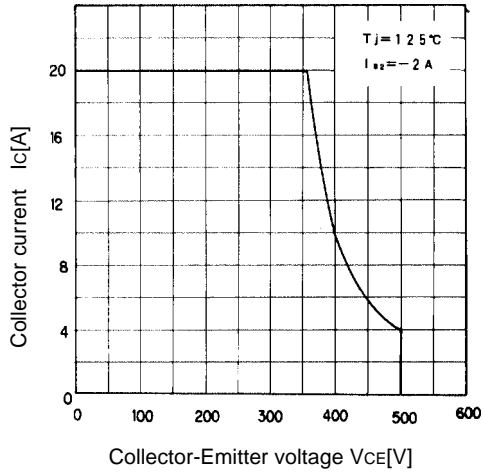
DC Current Gain



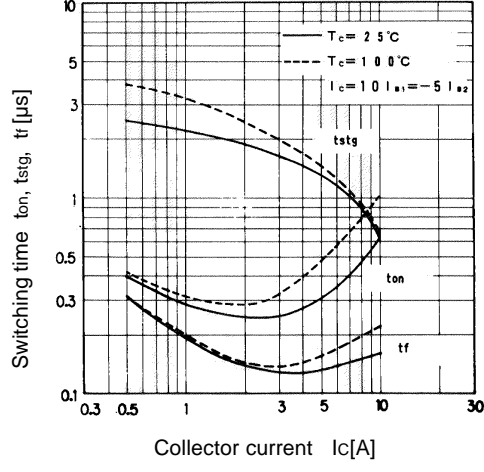
Base and Collector Saturation Voltage



Safe Operating Area

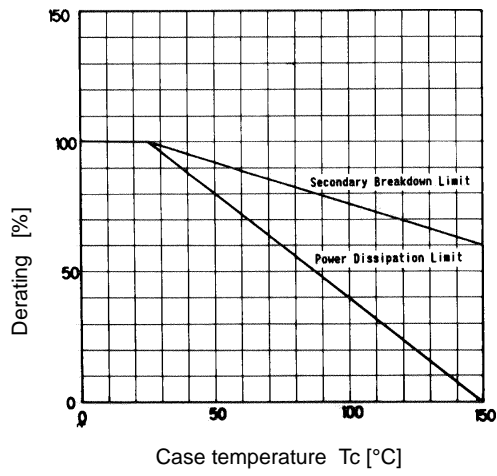


Reverse Biased Safe Operating Area

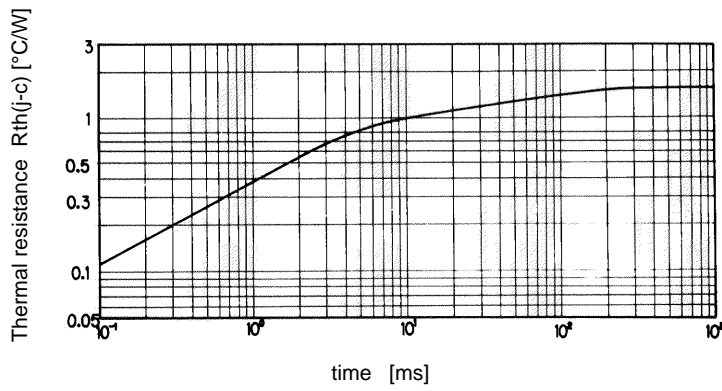


Switching Time

■ Characteristics



ASO Derating



Transient Thermal Resistance