

# 2SD1072

FUJI POWER TRANSISTOR

TRIPLE DIFFUSED PLANER TYPE  
HIGH POWER DARLINGTON  
HIGH VOLTAGE , SWITCHING

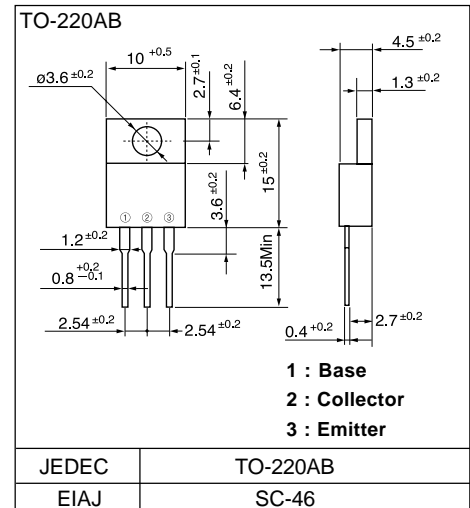
## Features

- High D.C. current gain
- High reliability

## Applications

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

## Outline Drawings

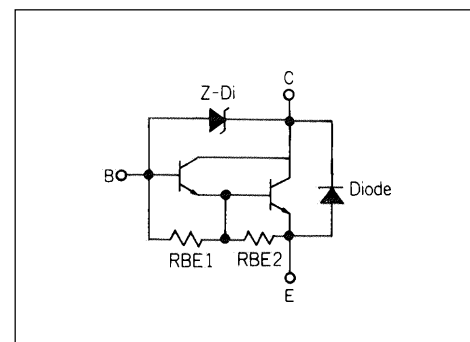


## Maximum ratings and characteristics

### 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>	450	V
Collector-Emitter voltage	V <sub>CEO(SUS)</sub>	350	V
Emitter-Base voltage	V <sub>EBO</sub>	20	V
Collector current	I <sub>C</sub>	5	A
Base current	I <sub>B</sub>	0.3	A
Collector power dissipation	P <sub>C</sub>	60	W
Operating junction temperature	T <sub>j</sub>	+150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

## Equivalent Circuit Schematic



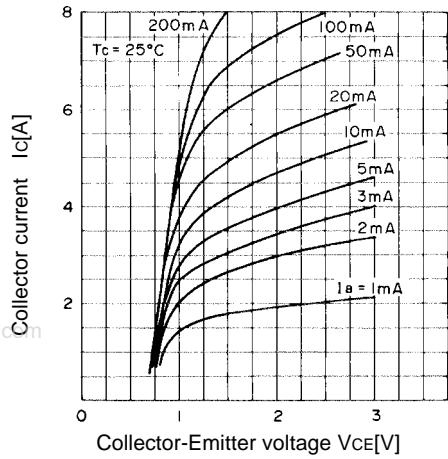
### Electrical characteristics (Tc =25°C unless otherwise specified)

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>		-			V
Collector-Emitter voltage	V <sub>CEO(SUS)</sub>	I <sub>C</sub> = 1A	350			V
Emitter-Base voltage	V <sub>EBO</sub>	I <sub>EBO</sub> = 50mA	20			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> = 20V			50	mA
D.C. current gain	h <sub>FE</sub>	I <sub>C</sub> = 3A, V <sub>CE</sub> = 1.5V	500			
Collector-Emitter saturation voltage	V <sub>CE(Sat)</sub>	I <sub>C</sub> = 3A, I <sub>B</sub> = 30mA			1.5	V
Base-Emitter saturation voltage	V <sub>BE(Sat)</sub>				2.0	V
*1 Switching time	t <sub>on</sub>	I <sub>C</sub> = 3A, I <sub>B1</sub> = 30mA			1.5	μs
	t <sub>stg</sub>	I <sub>B2</sub> = -30mA, R <sub>L</sub> = 20 ohm			12.0	μs
	t <sub>f</sub>	P <sub>W</sub> = 20μs, Duty = <2%			6.0	μs

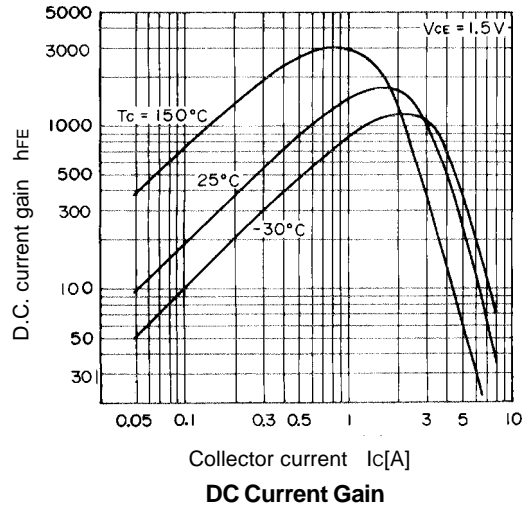
### Thermal characteristics

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

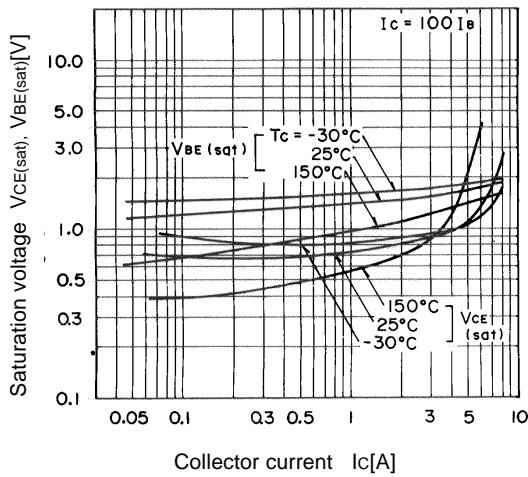
Characteristics



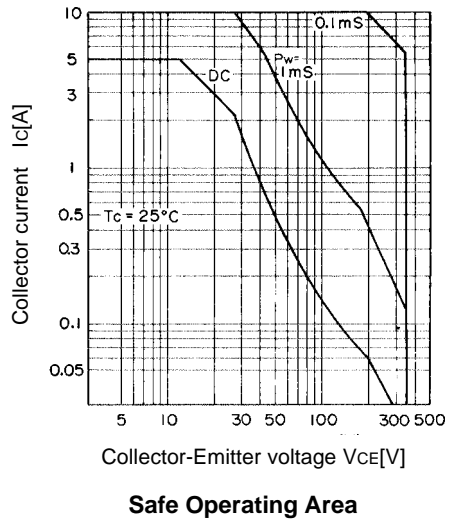
Collector Output Characteristics



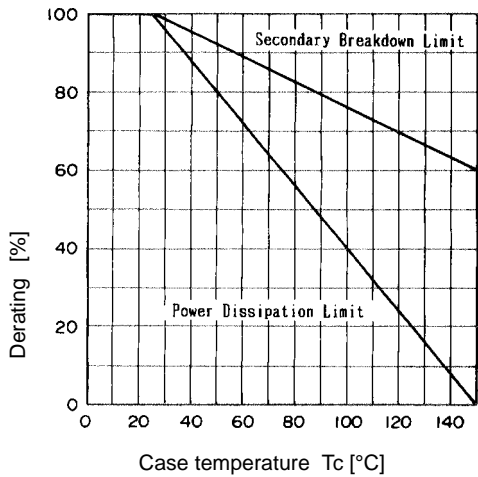
DC Current Gain



Base and Collector Saturation Voltage



Safe Operating Area



ASO Derating

\*1 Switching Time Test Circuit

