

## Silicon NPN Power Transistors

2SD1313

## DESCRIPTION

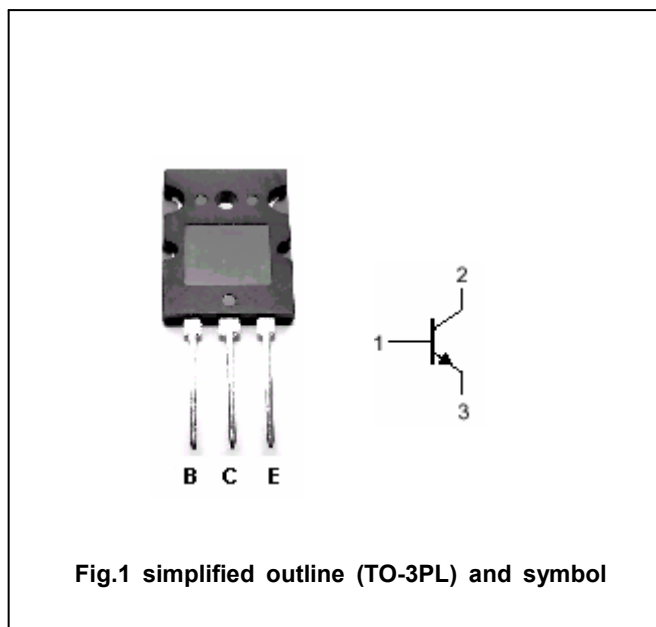
- With TO-3PL package
- High power dissipation
- High collector current
- High speed switching
- Low saturation voltage

## APPLICATIONS

- High power amplifier applications
- High power switching applications

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter



## Absolute maximum ratings (Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	800	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	350	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		25	A
I <sub>CM</sub>	Collector current-peak		35	A
I <sub>B</sub>	Base current		10	A
I <sub>BM</sub>	Base current-peak		15	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25°C	200	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-55~150	°C

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## CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =10mA ; I <sub>B</sub> =0	350			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =15A ; I <sub>B</sub> =3A			1.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =15A ; I <sub>B</sub> =3A			1.7	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =800V ; I <sub>E</sub> =0			1	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V ; I <sub>C</sub> =0			1	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	15			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =25A ; V <sub>CE</sub> =5V	6			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =1A ; V <sub>CE</sub> =10V		6		MHz
C <sub>OB</sub>	Collector output capacitance	f=1MHz ; V <sub>CB</sub> =50V, f=1MHz		170		pF

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =15A ; I <sub>B1</sub> =-I <sub>B2</sub> =3A V <sub>CC</sub> ≈200V, R <sub>L</sub> =13.3Ω		0.8		μs
t <sub>stg</sub>	Storage time			3.0		μs
t <sub>f</sub>	Fall time			0.5		μs

