

**Silicon NPN Power Transistors**

**2N6546 2N6547**

**DESCRIPTION**

- With TO-3 package
- High voltage ,high speed

**APPLICATIONS**

Suited for 115 and 220 volt line operated switch-mode applications such as :

- Switching regulators
- PWM inverters and motor controls
- Solenoid and relay drivers
- Deflection circuits

**PINNING (See Fig.2)**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

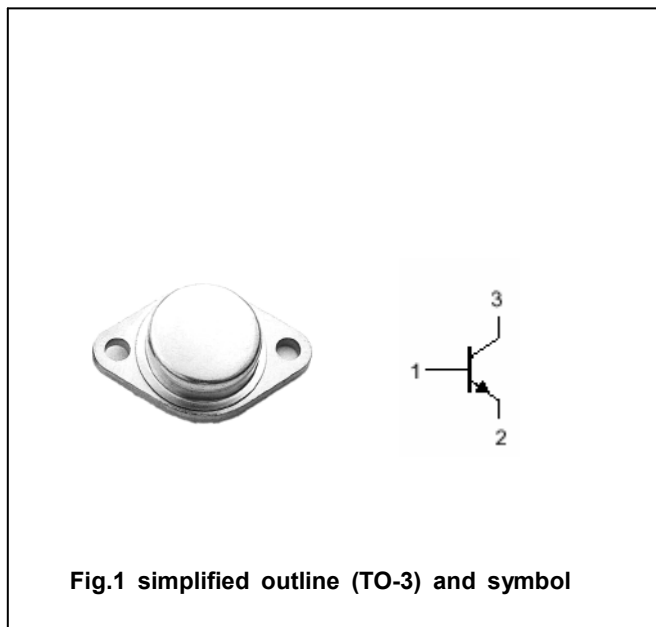


Fig.1 simplified outline (TO-3) and symbol

**Absolute maximum ratings(Ta=□)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	2N6546	650	V
		2N6547	850	
V <sub>CEO</sub>	Collector-emitter voltage	2N6546	300	V
		2N6547	400	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	9	V
I <sub>C</sub>	Collector current		15	A
I <sub>CM</sub>	Collector current-peak		30	A
I <sub>B</sub>	Base current		10	A
I <sub>E</sub>	Emitter current		25	A
I <sub>EM</sub>	Emitter current-peak		50	A
P <sub>T</sub>	Total power dissipation	T <sub>c</sub> =25□	175	W
T <sub>j</sub>	Junction temperature		200	□
T <sub>stg</sub>	Storage temperature		-65~200	□

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## CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	2N6546	I <sub>C</sub> =100mA ; I <sub>B</sub> =0	300			V
		2N6547		400			
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =10A; I <sub>B</sub> =2A			1.5	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =15A; I <sub>B</sub> =3A			5.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage		I <sub>C</sub> =10A ; I <sub>B</sub> =2A			1.6	V
I <sub>CEV</sub>	Collector cut-off current	2N6546	V <sub>CE</sub> =650V; V <sub>BE(off)</sub> =1.5V T <sub>C</sub> =100°C			1.0 4.0	mA
		2N6547	V <sub>CE</sub> =850V ; V <sub>BE(off)</sub> =1.5V T <sub>C</sub> =100°C			1.0 4.0	
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =9V; I <sub>C</sub> =0			1.0	mA
h <sub>FE-1</sub>	DC current gain		I <sub>C</sub> =5A ; V <sub>CE</sub> =2V	12		60	
h <sub>FE-2</sub>	DC current gain		I <sub>C</sub> =10A ; V <sub>CE</sub> =2V	6		30	
f <sub>T</sub>	Transition frequency		I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V; f=1MHz	6		35	MHz

## Switching times

t <sub>d</sub>	Delay time	I <sub>C</sub> =10A; I <sub>B1</sub> =-I <sub>B2</sub> =2.0A V <sub>CC</sub> =250V; t <sub>p</sub> =0.1ms; Duty Cycle≤2.0%			0.05	μs
t <sub>r</sub>	Rise time				1.0	μs
t <sub>stg</sub>	Storage time				4.0	μs
t <sub>f</sub>	Fall time				0.8	μs

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance from junction to case	1.0	°C/W

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PACKAGE OUTLINE

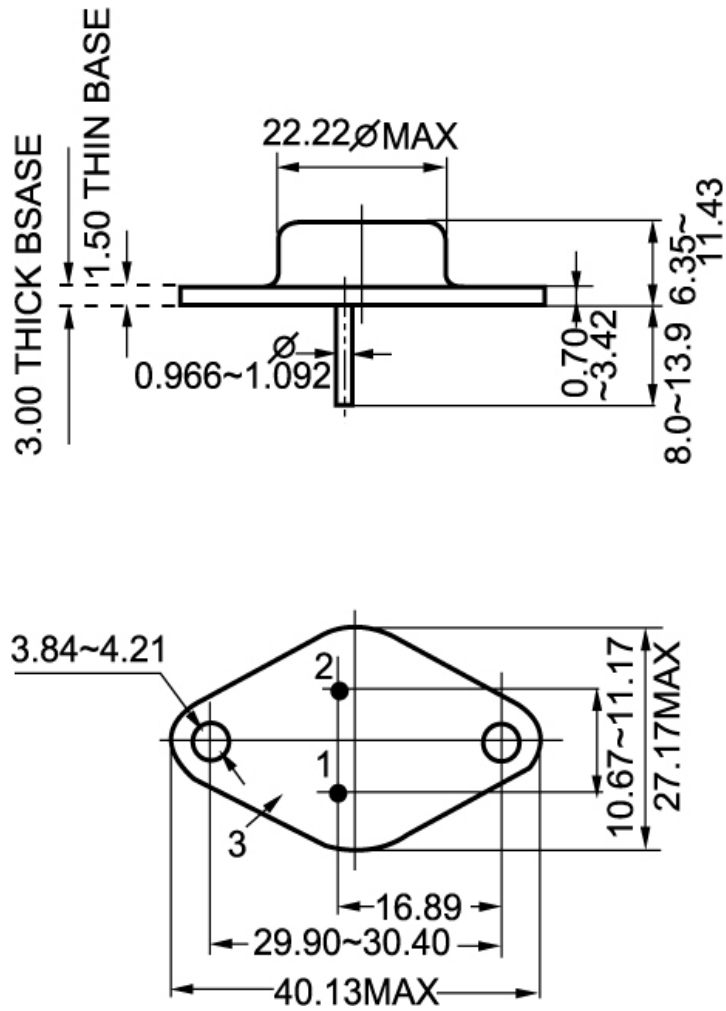


Fig.2 Outline dimensions

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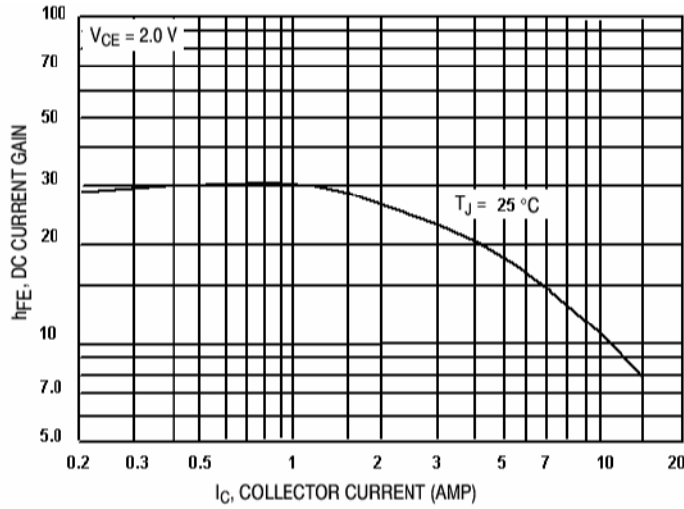


Fig.3 DC current Gain

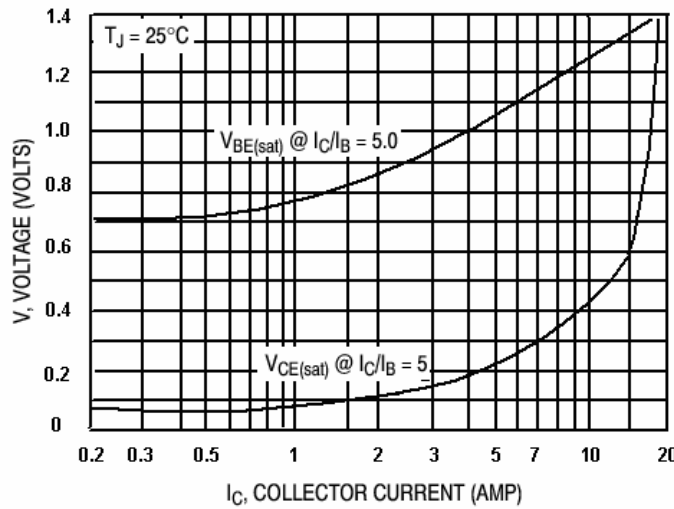


Fig.4 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

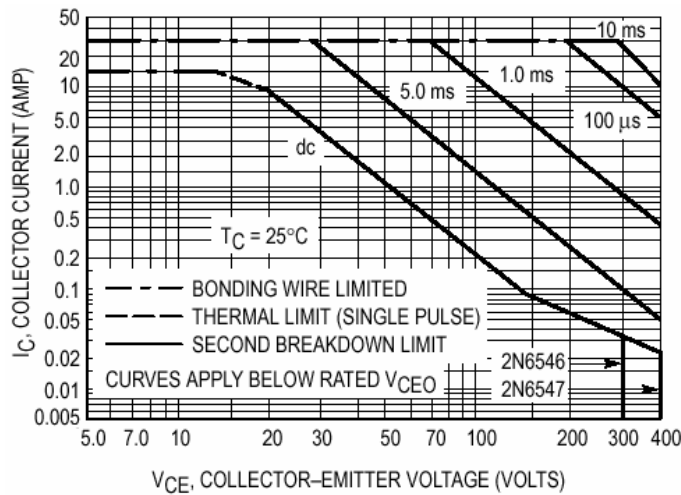


Fig.5 Safe Operating Area