

Silicon NPN Power Transistors

2N5428 2N5430

DESCRIPTION

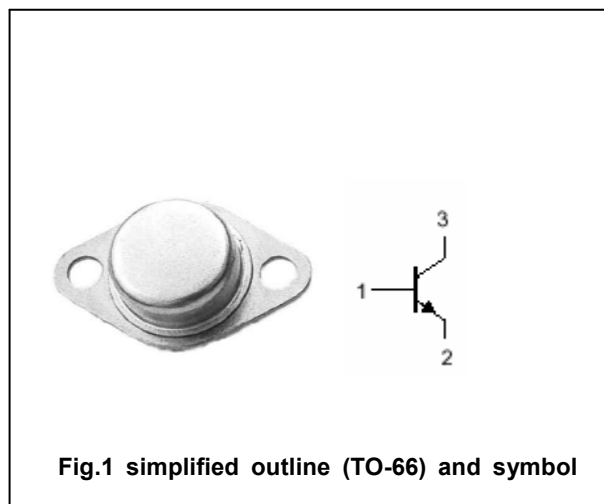
- With TO-66 package
- Low collector saturation voltage  
:  $V_{CE(sat)}=1.2V(Max)@I_C=7A$
- Excellent safe operating areas

APPLICATIONS

- Designed for switching and wide-band amplifier applications

PINNING (See Fig.2)

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector



Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	2N5428	80	V
		2N5430	100	
V <sub>CEO</sub>	Collector-emitter voltage	2N5428	80	V
		2N5430	100	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	6	V
I <sub>C</sub>	Collector current		7	A
I <sub>B</sub>	Base current		1	A
P <sub>D</sub>	Total power dissipation	T <sub>C</sub> =25°C	40	W
T <sub>j</sub>	Junction temperature		200	°C
T <sub>stg</sub>	Storage temperature		-65~200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	4.37	°C/W

## Silicon NPN Power Transistors

## 2N5428 2N5430

## CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE(SUS)</sub>	Collector-emitter sustaining voltage	2N5428	I <sub>C</sub> =50mA ; I <sub>B</sub> =0	80			V
		2N5430		100			
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =2A ; I <sub>B</sub> =0.2A			0.7	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =7A ; I <sub>B</sub> =0.7A			1.2	V
V <sub>BEsat-1</sub>	Base-emitter saturation voltage		I <sub>C</sub> =2A ; I <sub>B</sub> =0.2A			1.2	V
V <sub>BEsat-2</sub>	Base-emitter saturation voltage		I <sub>C</sub> =7A ; I <sub>B</sub> =0.7A			2.0	V
I <sub>CEX</sub>	Collector cut-off current	2N5428	V <sub>CE</sub> =75V ; V <sub>BE(off)</sub> =1.5V T <sub>C</sub> =150 °C			0.1 1.0	mA
		2N5430	V <sub>CE</sub> =90V ; V <sub>BE(off)</sub> =1.5V T <sub>C</sub> =150 °C			0.1 1.0	
I <sub>CBO</sub>	Collector cut-off current		V <sub>CB</sub> =Rated V <sub>CBO</sub> ; I <sub>E</sub> =0			0.1	mA
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =6V ; I <sub>C</sub> =0			0.1	mA
h <sub>FE-1</sub>	DC current gain		I <sub>C</sub> =0.5A ; V <sub>CE</sub> =2V	60			
h <sub>FE-2</sub>	DC current gain		I <sub>C</sub> =2A ; V <sub>CE</sub> =2V	60		240	
h <sub>FE-3</sub>	DC current gain		I <sub>C</sub> =5A ; V <sub>CE</sub> =2V	40			
f <sub>T</sub>	Transition frequency		I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V ; f=10MHz	20			MHz

Silicon NPN Power Transistors

2N5428 2N5430

PACKAGE OUTLINE



Fig.2 Outline dimensions

Silicon NPN Power Transistors

2N5428 2N5430

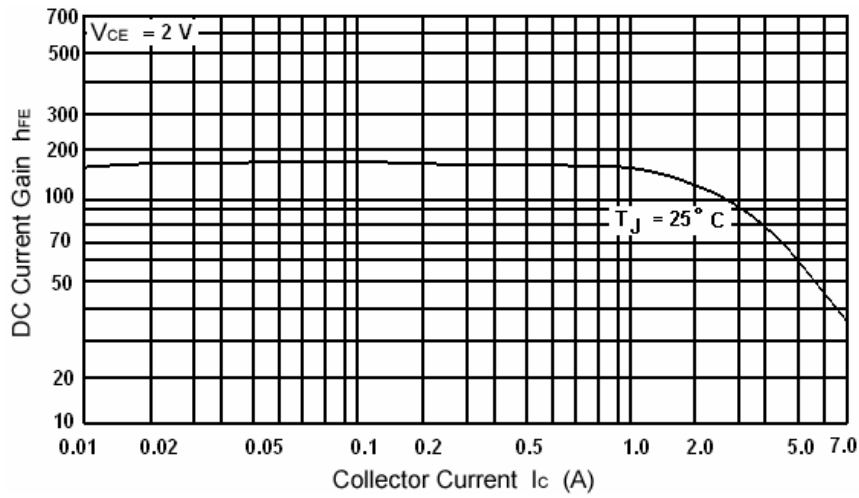


Fig.3 DC current Gain

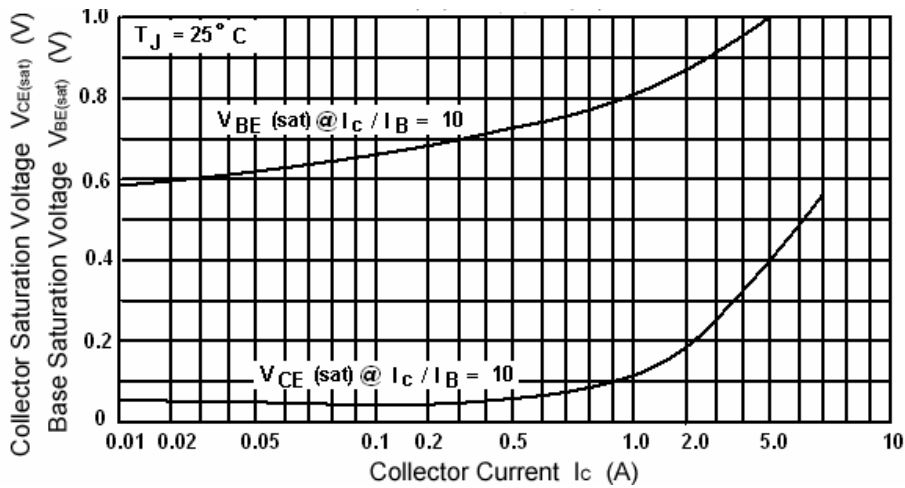


Fig.4 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

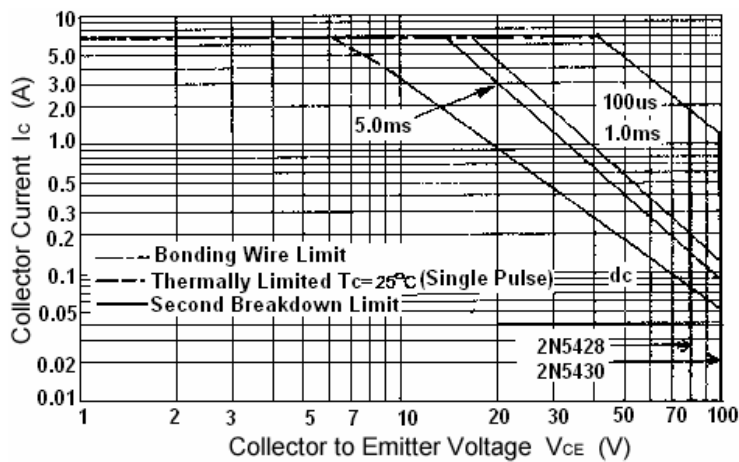


Fig.5 Safe Operating Area