



Silicon NPN Power Transistors

2N3771 2N3772

DESCRIPTION

- With TO-3 package
- High power and high current capability

APPLICATIONS

- For linear amplifiers, series pass regulators and inductive switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

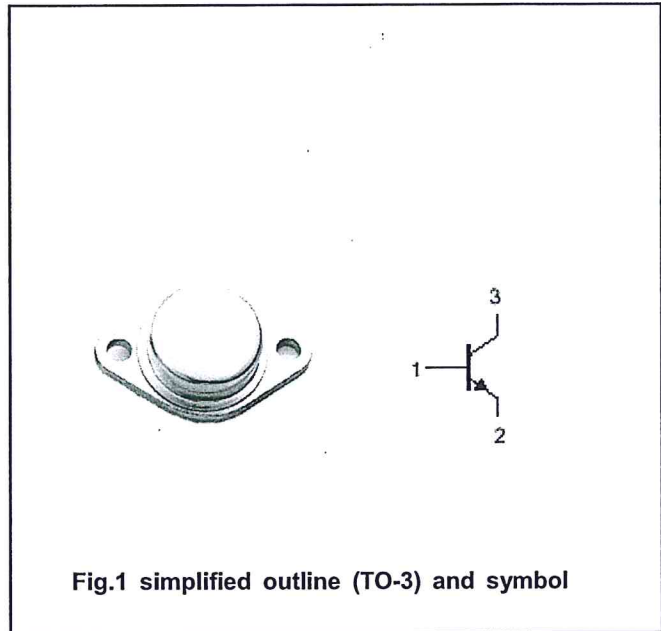


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings(Ta=□)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	2N3771	50	V
		2N3772	100	
V <sub>CEO</sub>	Collector-emitter voltage	2N3771	40	V
		2N3772	60	
V <sub>EBO</sub>	Emitter-base voltage	2N3771	5	V
		2N3772	7	
I <sub>C</sub>	Collector current	2N3771	30	A
		2N3772	20	
I <sub>CM</sub>	Collector current-peak		30	A
I <sub>B</sub>	Base current	2N3771	7.5	A
		2N3772	5.0	
I <sub>BM</sub>	Base current-peak		15	A
P <sub>D</sub>	Total Power Dissipation	T <sub>C</sub> =25□	150	W
T <sub>j</sub>	Junction temperature		200	□
T <sub>stg</sub>	Storage temperature		-65~200	□

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>thj-c</sub>	Thermal resistance junction to case	1.17	□/W

## Silicon NPN Power Transistors

## 2N3771 2N3772

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-emitter sustaining voltage	2N3771	I <sub>C</sub> =0.2A ; I <sub>B</sub> =0	40		V
		2N3772		60		
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	2N3771	I <sub>C</sub> =15A ; I <sub>B</sub> =1.5A		2.0	V
		2N3772	I <sub>C</sub> =10A ; I <sub>B</sub> =1.0A		1.4	
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	2N3771	I <sub>C</sub> =30A ; I <sub>B</sub> =6A		4.0	V
		2N3772	I <sub>C</sub> =20A ; I <sub>B</sub> =4A			
V <sub>BE</sub>	Base-emitter on voltage	2N3771	I <sub>C</sub> =15A ; V <sub>CE</sub> =4V		2.7	V
		2N3772	I <sub>C</sub> =10A ; V <sub>CE</sub> =4V		2.2	
I <sub>CEO</sub>	Collector cut-off current	2N3771	V <sub>CE</sub> =30V ; I <sub>B</sub> =0		10	mA
		2N3772	V <sub>CE</sub> =50V ; I <sub>B</sub> =0			
I <sub>CEV</sub>	Collector cut-off current	2N3771	V <sub>CE</sub> =50V ; V <sub>BE(off)</sub> =1.5V V <sub>CE</sub> =30V T <sub>C</sub> =150°C		2.0 10.0	mA
		2N3772	V <sub>CE</sub> =100V ; V <sub>BE(off)</sub> =1.5V V <sub>CE</sub> =45V T <sub>C</sub> =150°C		5.0 10.0	
I <sub>CBO</sub>	Emitter cut-off current	2N3771	V <sub>CB</sub> =50V ; I <sub>E</sub> =0		2.0	mA
		2N3772	V <sub>CB</sub> =100V ; I <sub>E</sub> =0		5.0	
I <sub>EBO</sub>	Emitter cut-off current	2N3771	V <sub>EB</sub> =5V ; I <sub>C</sub> =0		5.0	mA
		2N3772	V <sub>EB</sub> =7V ; I <sub>C</sub> =0			
h <sub>FE-1</sub>	DC current gain	2N3771	I <sub>C</sub> =15A ; V <sub>CE</sub> =4V	15	60	
		2N3772	I <sub>C</sub> =10A ; V <sub>CE</sub> =4V			
h <sub>FE-2</sub>	DC current gain	2N3771	I <sub>C</sub> =30A ; V <sub>CE</sub> =4V	5		
		2N3772	I <sub>C</sub> =20A ; V <sub>CE</sub> =4V			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =1.0A ; V <sub>CE</sub> =4V ; f=50kHz	0.2			MHz
I <sub>s/b</sub>	Second breakdown energy with base forward biased	2N3771	V <sub>CE</sub> =40Vdc, t=1.0s, Nonrepetitive	3.75		A
		2N3772	V <sub>CE</sub> =60Vdc, t=1.0s, Nonrepetitive	2.5		



Silicon NPN Power Transistors

2N3771 2N3772

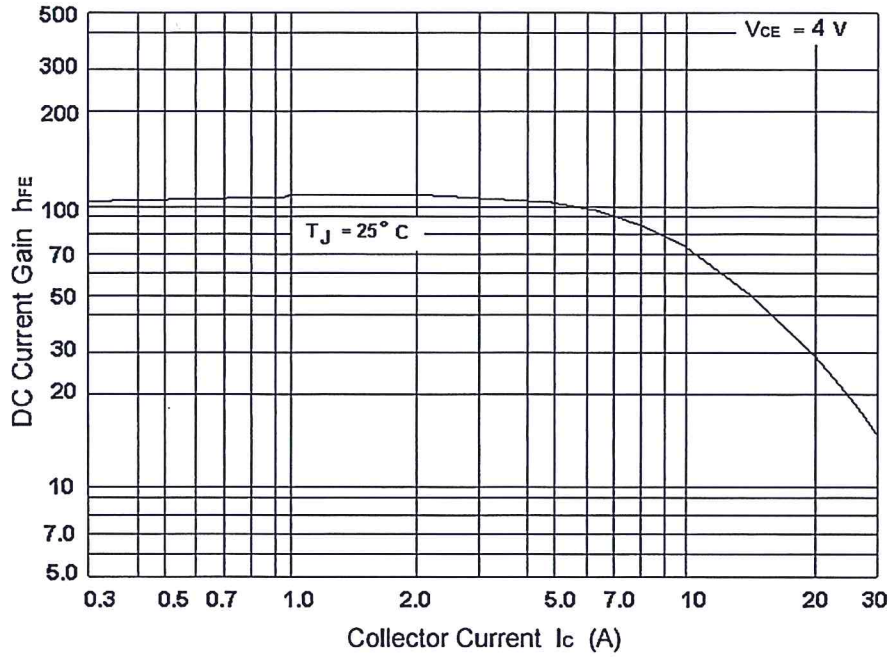


Fig.3 DC current Gain

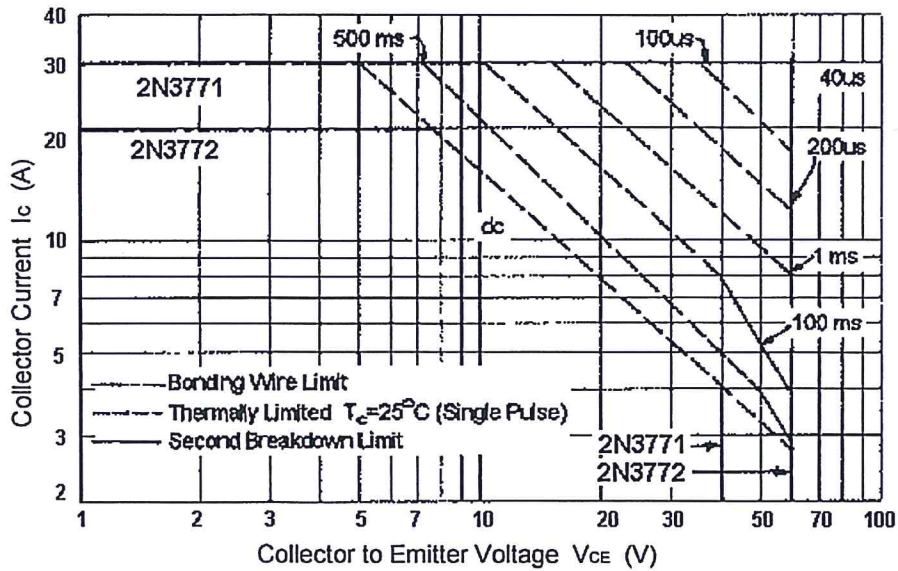


Fig.4 Safe Operating Area