

Silicon NPN Power Transistors

2SC2768

DESCRIPTION

- With TO-220C package
- High speed switching
- High reliability

APPLICATIONS

- Switching regulators
- Ultrasonic generators
- High frequency inverters
- General purpose power amplifiers

PINNING

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

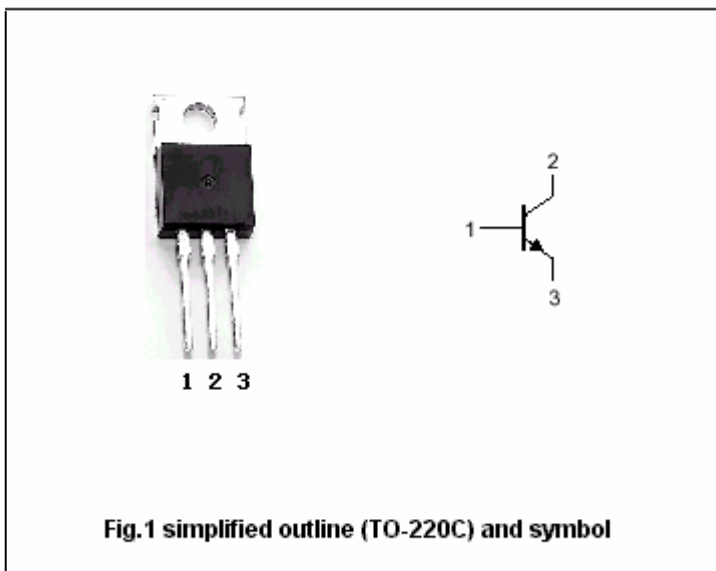


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings(Ta=25 )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	250	V
$V_{CEO}$	Collector-emitter voltage	Open base	200	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		6	A
$I_B$	Base current		1.5	A
$P_C$	Collector power dissipation	$T_C=25$	40	W
$T_j$	Junction temperature		150	
$T_{stg}$	Storage temperature		-55~150	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-C}$	Thermal resistance junction case	3.0	/W

## Silicon NPN Power Transistors

## 2SC2768

## CHARACTERISTICS

T<sub>j</sub>=25 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	200			V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =100 μ A ; I <sub>E</sub> =0	250			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =100 μ A ; I <sub>C</sub> =0	7			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =0.8A			0.5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =0.8A			1.2	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =250V ; I <sub>E</sub> =0			100	μ A
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V; I <sub>C</sub> =0			100	μ A
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	20			
Switching times						
t <sub>on</sub>	Turn-on time	I <sub>C</sub> =4A; I <sub>B1</sub> =-I <sub>B2</sub> =-0.4A R <sub>L</sub> =20			1.0	μ s
t <sub>stg</sub>	Storage time				2.0	μ s
t <sub>f</sub>	Fall time				1.0	μ s

Silicon NPN Power Transistors

2SC2768

PACKAGE OUTLINE

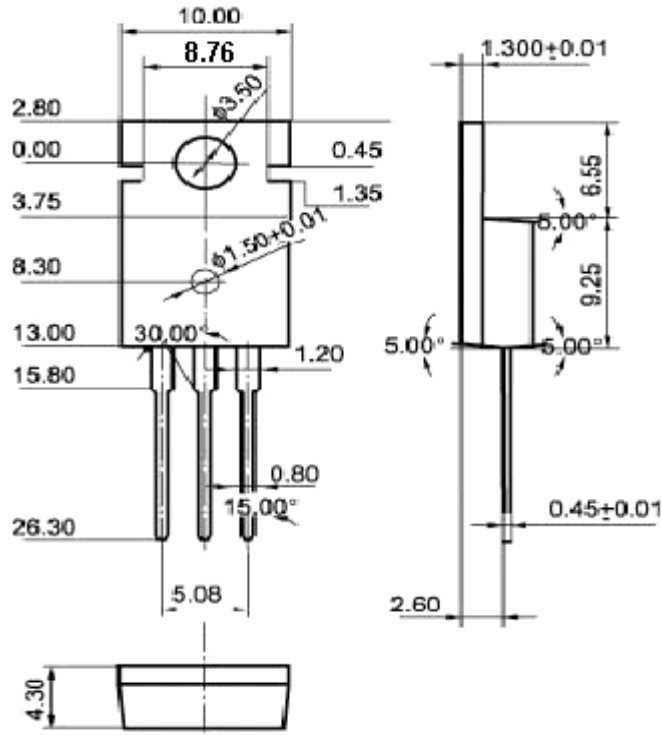


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.10$  mm)

Silicon NPN Power Transistors

2SC2768

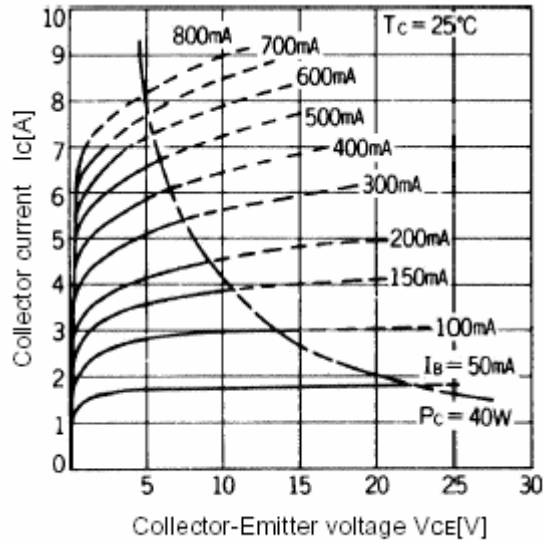


Fig.3 Static Characteristic

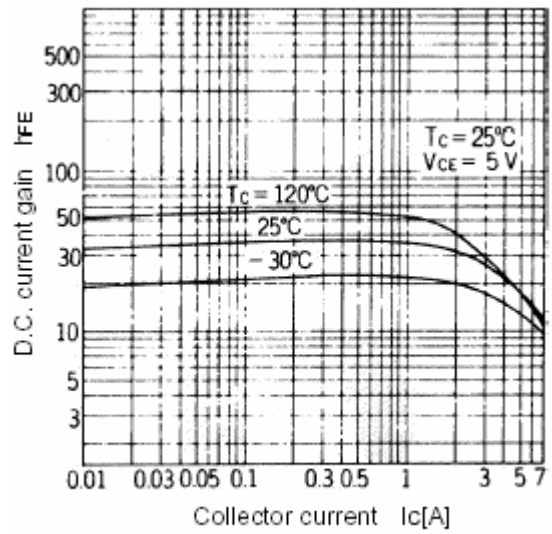


Fig.4 DC current Gain

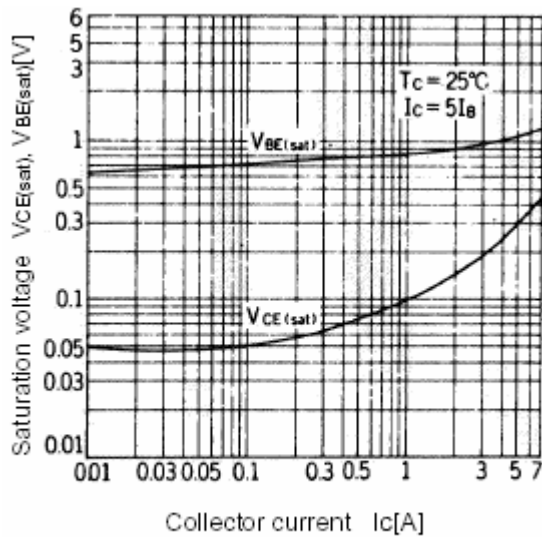


Fig.5 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

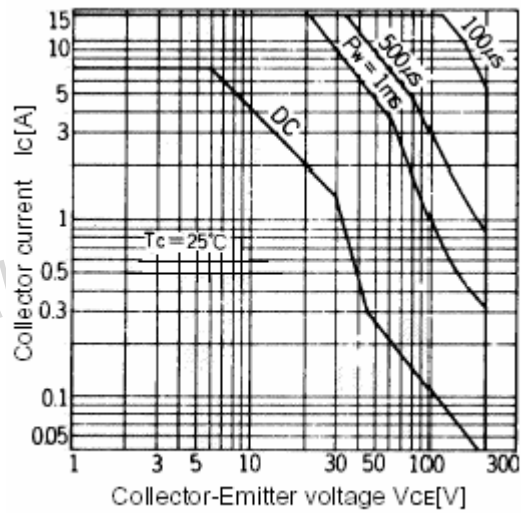


Fig.6 Safe Operating Area