

Silicon NPN Power Transistors

2SC2768

DESCRIPTION

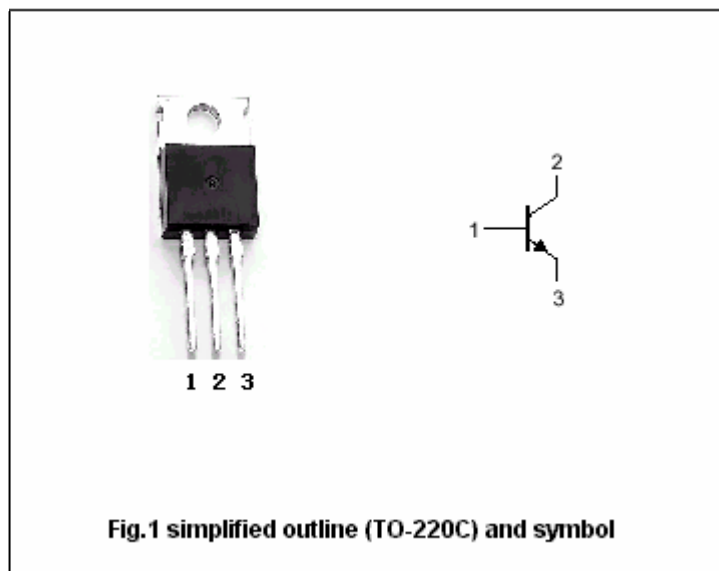
- With TO-220C package
- High speed switching
- High reliability

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

Absolute maximum ratings($T_a=25^\circ\text{C}$)

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	$T_C=25^\circ\text{C}$	40	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

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

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CHARACTERISTICS

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=10mA$; $I_B=0$	200			V
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=100\mu A$; $I_E=0$	250			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=100\mu A$; $I_C=0$	7			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=2A$; $I_B=0.8A$			0.5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=2A$; $I_B=0.8A$			1.2	V
I_{CBO}	Collector cut-off current	$V_{CB}=250V$; $I_E=0$			100	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=7V$; $I_C=0$			100	μA
h_{FE}	DC current gain	$I_C=1A$; $V_{CE}=5V$	20			

Switching times

t_{on}	Turn-on time	$I_C=4A$; $I_{B1}=-I_{B2}=-0.4A$ $R_L=20\Omega$			1.0	μs
t_{stg}	Storage time				2.0	μs
t_f	Fall time				1.0	μs

Technical drawing of a mechanical part showing three views: front, side, and bottom views. The dimensions are as follows:

- Front View:**
 - Overall width: 10.00
 - Top flange width: 8.76
 - Top flange thickness: 2.80
 - Top flange hole diameter: $\phi 3.50$
 - Top flange offset: 0.45
 - Shoulder width: 1.35
 - Shoulder height: 3.75
 - Shoulder hole diameter: $\phi 1.50 \pm 0.01$
 - Shoulder offset: 1.20
 - Shoulder height from base: 8.30
 - Base height: 13.00
 - Base width: 30.00
 - Base hole diameter: 1.20
 - Base hole offset: 0.80
 - Base hole angle: 15.00°
 - Base hole depth: 5.08
 - Base hole diameter at bottom: 0.80
 - Base hole angle at bottom: 15.00°
 - Base hole depth from base: 26.30
- Side View:**
 - Overall height: 1.300 ± 0.01
 - Top flange thickness: 6.55
 - Shoulder height: 5.00
 - Shoulder width: 9.25
 - Shoulder angle: 5.00°
 - Base height: 5.00
 - Base width: 0.45
 - Base angle: 5.00°
 - Base depth: 2.60
- Bottom View:**
 - Overall width: 4.30

Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)

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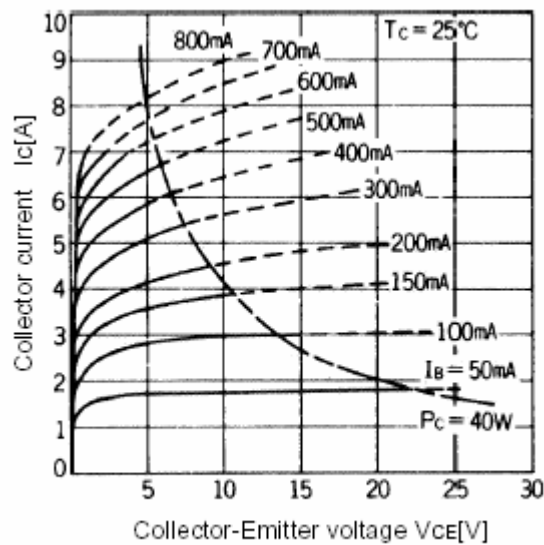


Fig.3 Static Characteristic

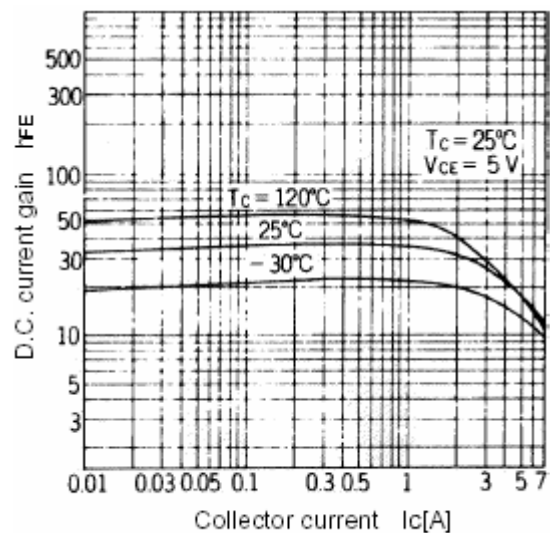


Fig.4 DC current Gain

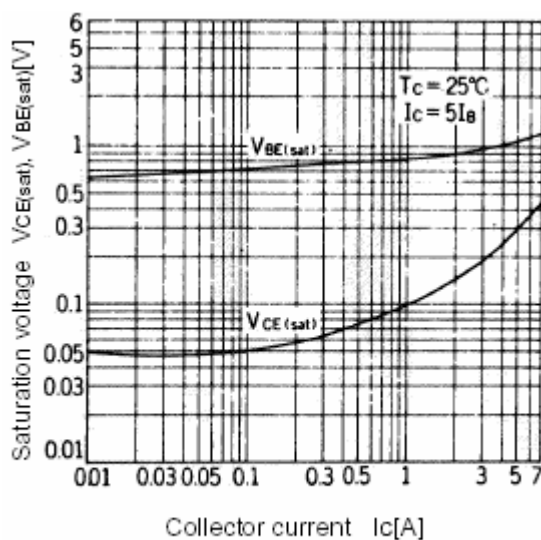
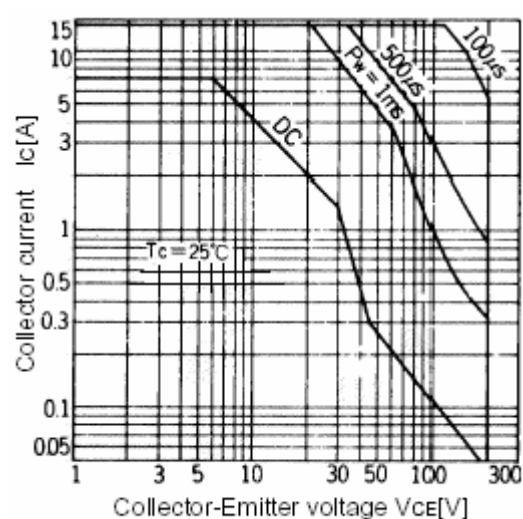
Fig.5 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

Fig.6 Safe Operating Area