

**Silicon NPN Power Transistors**

**2SC2542**

**DESCRIPTION**

With TO-220C package

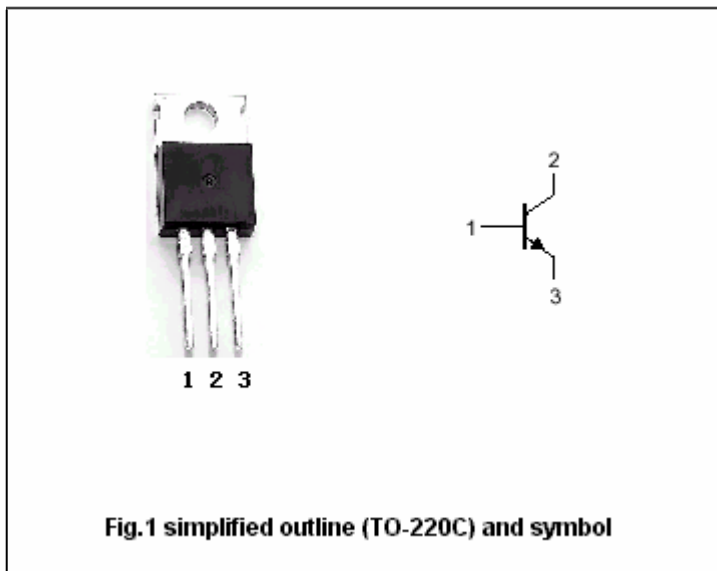
- High voltage ,high speed switching
- High reliability

**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<sub>c</sub>=25□)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	450	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	400	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		5	A
I <sub>B</sub>	Base current		1.5	A
P <sub>C</sub>	Collector power dissipation	T <sub>c</sub> =25□	40	W
T <sub>j</sub>	Junction temperature		150	□
T <sub>stg</sub>	Storage temperature		-45~150	□

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-C</sub>	Thermal resistance junction case	3.0	□/W

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## CHARACTERISTICS

T<sub>j</sub>=25 °C 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	400			V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =1mA ; I <sub>E</sub> =0	450			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =0.1mA ; I <sub>C</sub> =0	7			V
V <sub>CE(sat)</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =0.4A			1.2	V
V <sub>BE(sat)</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =0.4A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =450V ; I <sub>E</sub> =0			1.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V; I <sub>C</sub> =0			0.1	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =2 A ; V <sub>CE</sub> =5V	10			

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =4A; I <sub>B1</sub> =0.8A I <sub>B2</sub> =-0.8A; R <sub>L</sub> =20Ω			1.0	μs
t <sub>s</sub>	Storage time				2.0	μs
t <sub>f</sub>	Fall time				1.0	μs

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PACKAGE OUTLINE



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

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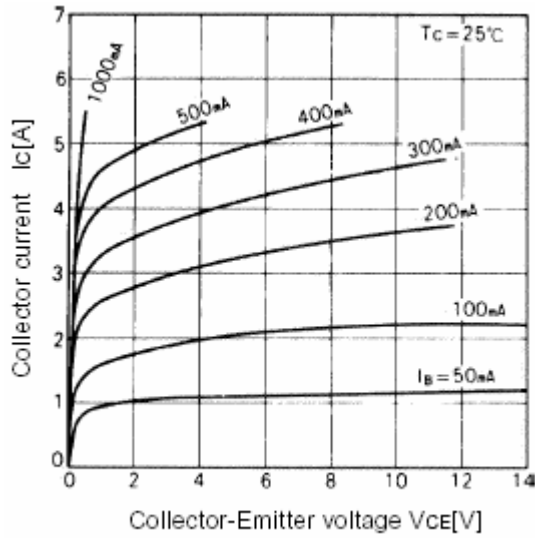


Fig.3 Static Characteristic

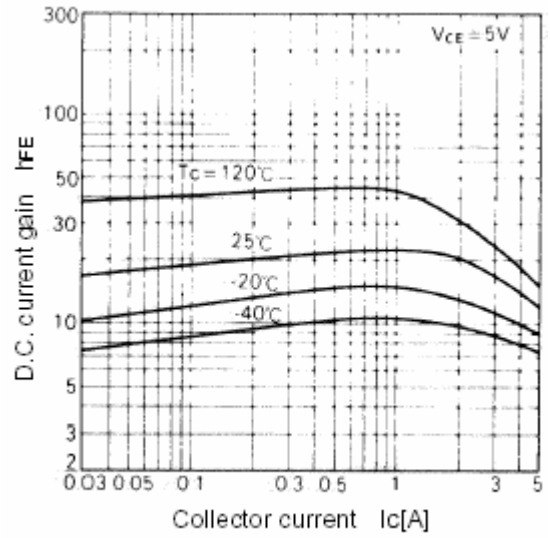


Fig.4 DC current Gain

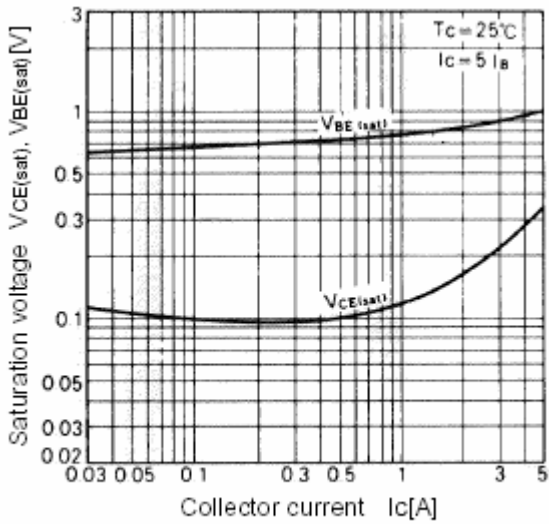


Fig.5 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

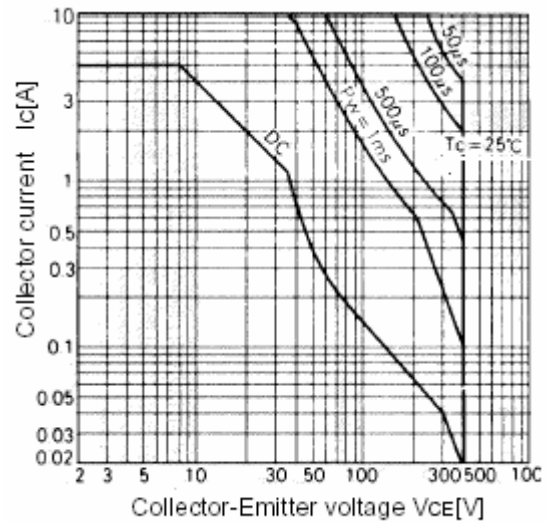


Fig.6 Safe Operating Area