

**Inchange Semiconductor**

**Product Specification**

**Silicon NPN Power Transistors**

**2SC2440**

**DESCRIPTION**

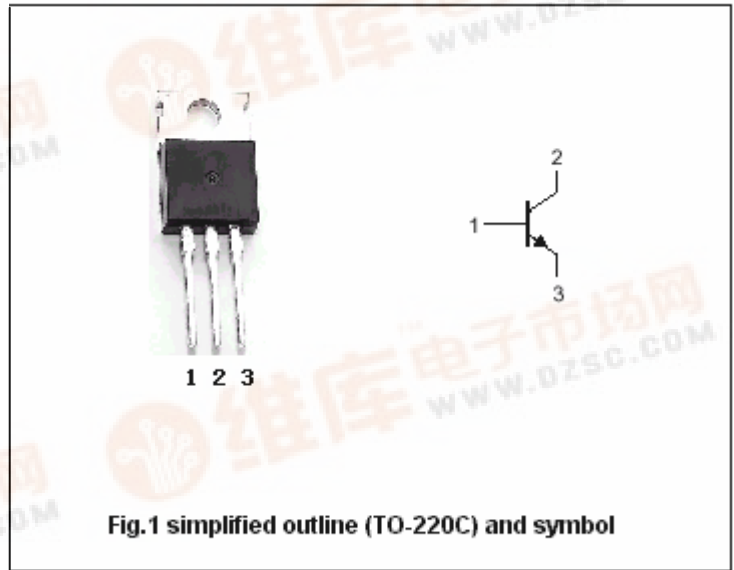
- With TO-220C package
- High voltage ,high speed switching
- High reliability

**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(Ta=25 )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	450	V
$V_{CEO}$	Collector-emitter voltage	Open base	400	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		5	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		-45~150	

**THERMAL CHARACTERISTICS**

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

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## 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	400			V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =100 μ A ; I <sub>E</sub> =0	450			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> =0.4A			0.8	V
V <sub>BEsat</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> =400V ; 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> =2 A ; V <sub>CE</sub> =5V	15			
Switching times						
t <sub>on</sub>	Turn-on time	I <sub>C</sub> =3A; I <sub>B1</sub> =0.3A I <sub>B2</sub> =-0.3A; R <sub>L</sub> =20			1.5	μ s
t <sub>s</sub>	Storage time				4.0	μ s
t <sub>f</sub>	Fall time				1.3	μ s

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PACKAGE OUTLINE

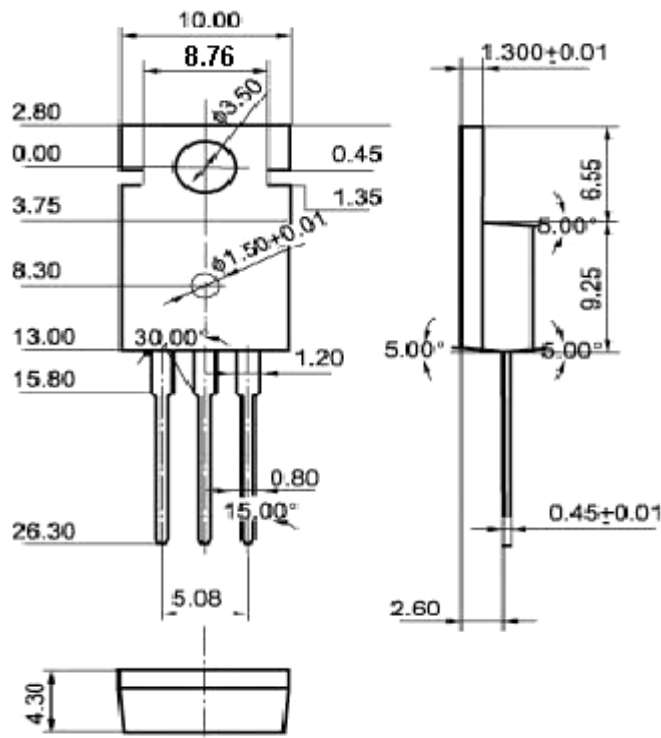


Fig.2 Outline dimensions (unindicated tolerance: ±0.10 mm)

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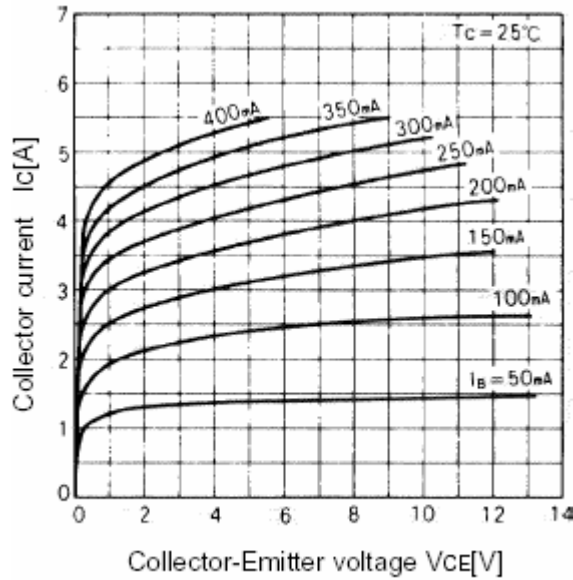


Fig.3 Static Characteristic

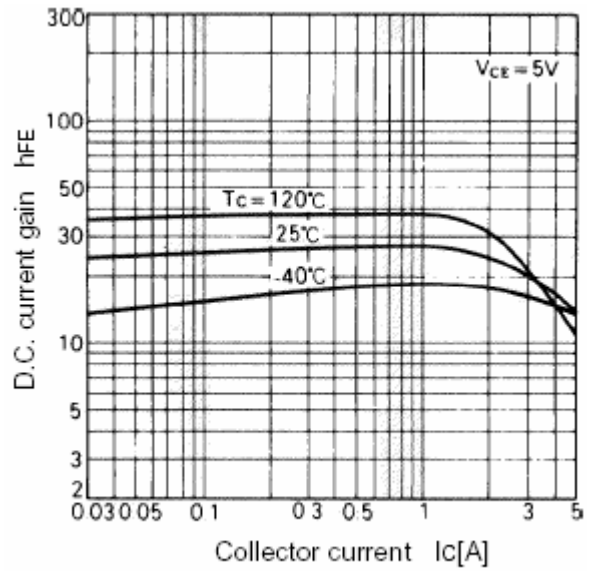


Fig.4 DC current Gain

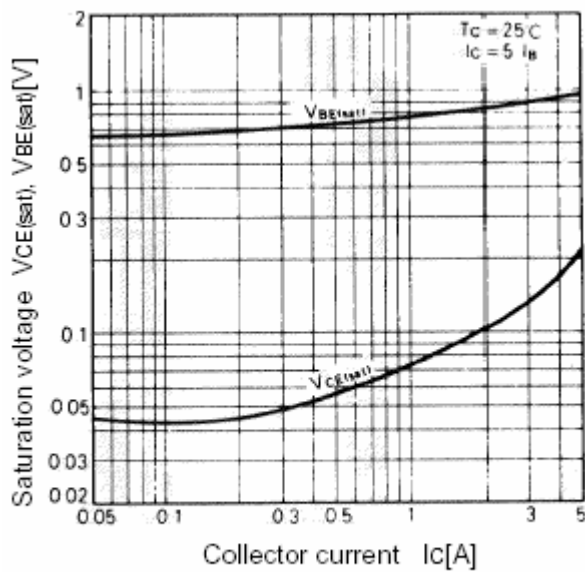


Fig.5 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

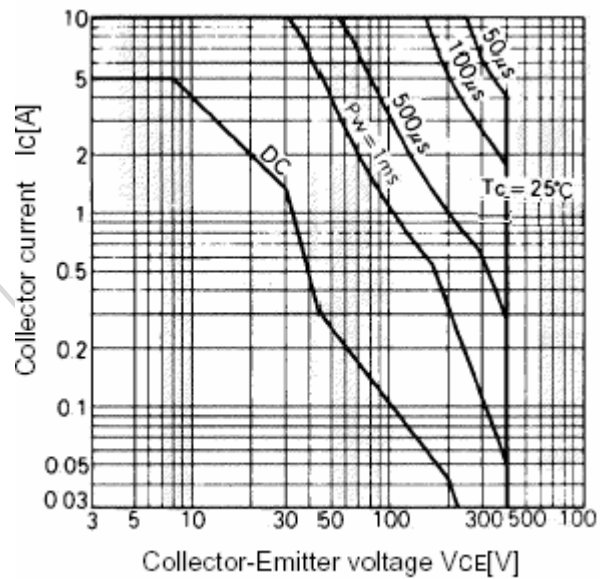


Fig.6 Safe Operating Area