

## Silicon NPN Power Transistors

## 2SD633 2SD635

**DESCRIPTION**

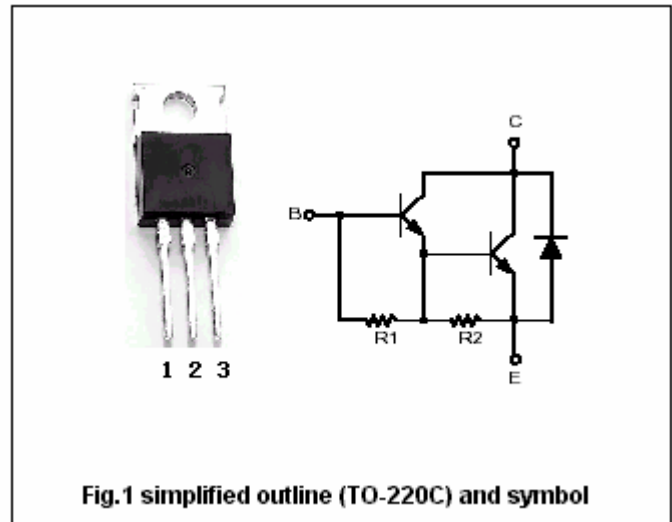
- With TO-220C package
- Complement to type 2SB673/675
- DARLINGTON
- High DC current gain
- Low saturation voltage

**APPLICATIONS**

- High power switching
- Hammer drive,pulse motor drive

**PINNING**

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

**Absolute maximum ratings(Ta=25□)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	2SD633	100	V
		2SD635	60	
V <sub>CEO</sub>	Collector-emitter voltage	2SD633	100	V
		2SD635	60	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>C</sub>	Collector current		7	A
I <sub>B</sub>	Base current		0.7	A
P <sub>C</sub>	Collector dissipation	T <sub>C</sub> =25□	40	W
T <sub>j</sub>	Junction temperature		150	□
T <sub>stg</sub>	Storage temperature		-50~150	□

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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	2SD633	I <sub>C</sub> =50mA; I <sub>B</sub> =0	100			V
		2SD635		60			
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =3A; I <sub>B</sub> =6mA			1.5	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =7A; I <sub>B</sub> =14mA			2.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage		I <sub>C</sub> =3A; I <sub>B</sub> =6mA			2.5	V
I <sub>CBO</sub>	Collector cut-off current	2SD633	V <sub>CB</sub> =100V; I <sub>E</sub> =0			100	μA
		2SD635	V <sub>CB</sub> =60V; I <sub>E</sub> =0				
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =5V; I <sub>C</sub> =0			3.0	mA
h <sub>FE-1</sub>	DC current gain		I <sub>C</sub> =3A; V <sub>CE</sub> =3V	2000		15000	
h <sub>FE-2</sub>	DC current gain		I <sub>C</sub> =7A; V <sub>CE</sub> =3V	1000			

## Switching times

t <sub>on</sub>	Turn-on time		I <sub>B1</sub> =-I <sub>B2</sub> =6mA V <sub>CC</sub> =45V; R <sub>L</sub> =15Ω		0.8		μs
t <sub>s</sub>	Storage time				3.0		μs
t <sub>f</sub>	Fall time				2.5		μs

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PACKAGE OUTLINE

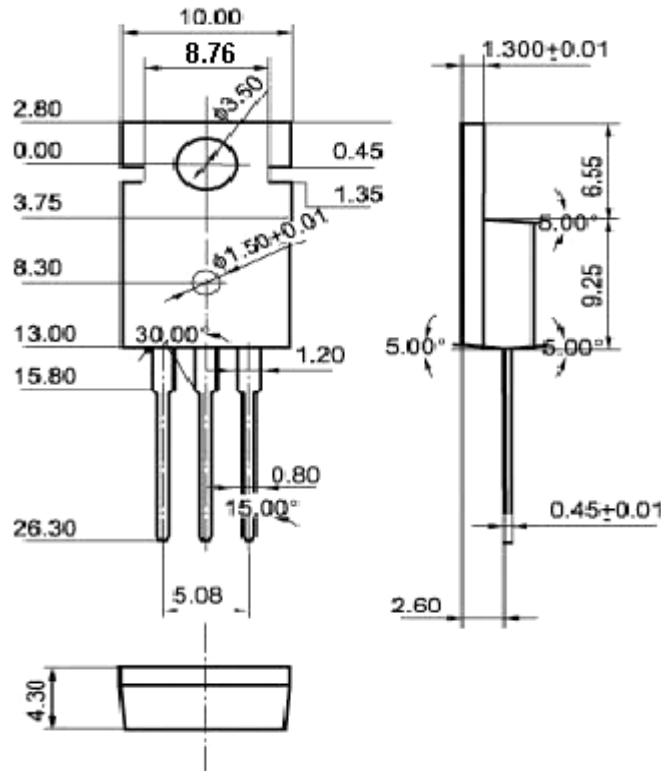


Fig.2 Outline dimensions (unindicated tolerance:±0.10mm)