

## Silicon NPN Power Transistors

## 2SD633 2SD635

## DESCRIPTION

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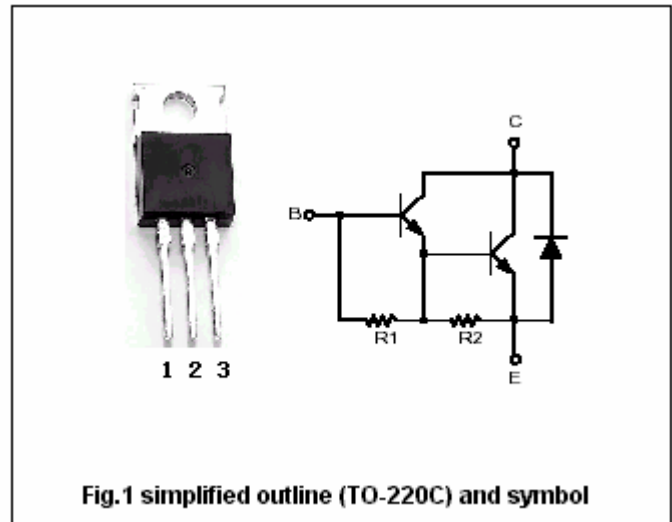
- With TO-220C package
- Complement to type 2SB673/675
- DARLINGTON
- High DC current gain
- Low saturation voltage

## 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( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	2SD633	100	V
		2SD635	60	
$V_{CEO}$	Collector-emitter voltage	2SD633	100	V
		2SD635	60	
$V_{EBO}$	Emitter-base voltage	Open collector	5	V
$I_C$	Collector current		7	A
$I_B$	Base current		0.7	A
$P_C$	Collector dissipation	$T_C=25^\circ\text{C}$	40	W
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-50~150	$^\circ\text{C}$

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## CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

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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

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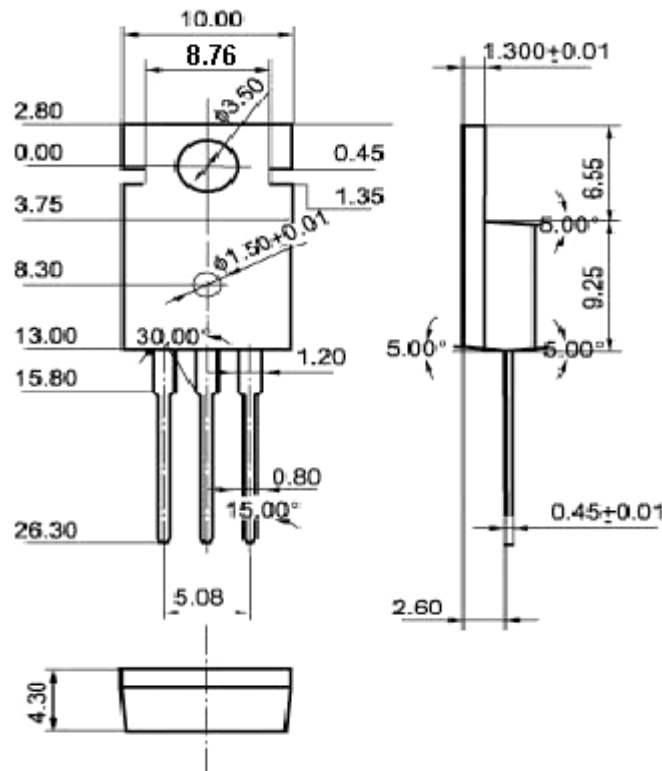


Fig.2 Outline dimensions (unindicated tolerance:±0.10mm)