

Silicon NPN Power Transistors

BDX33/A/B/C

DESCRIPTION

- With TO-220C package
- High DC current gain
- DARLINGTON
- Complement to type BDX34/A/B/C

APPLICATIONS

- For power linear and switching applications

PINNING

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

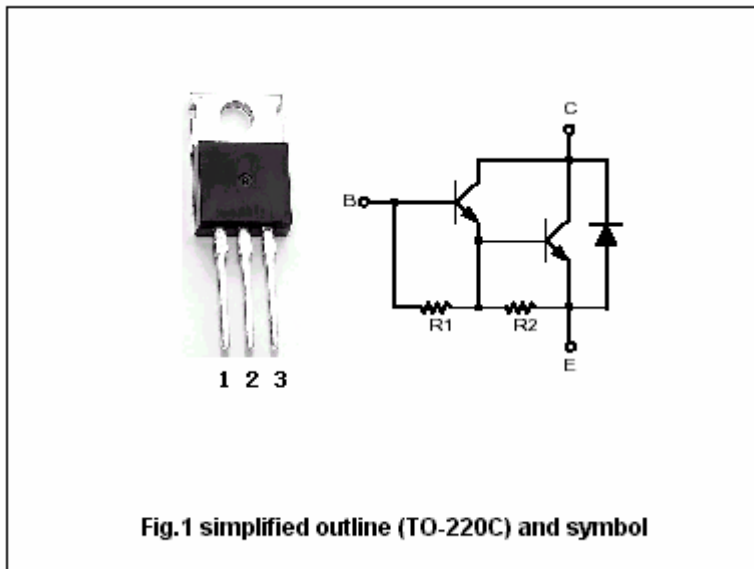


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings(Ta=25 )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT	
V <sub>CBO</sub>	Collector-base voltage	Open emitter	BDX33	45	V
			BDX33A	60	
			BDX33B	80	
			BDX33C	100	
V <sub>CEO</sub>	Collector-emitter voltage	Open base	BDX33	45	V
			BDX33A	60	
			BDX33B	80	
			BDX33C	100	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V	
I <sub>C</sub>	Collector current-DC		10	A	
I <sub>CM</sub>	Collector current-Pulse		15	A	
I <sub>B</sub>	Base current		0.25	A	
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25	70	W	
T <sub>j</sub>	Junction temperature		150		
T <sub>stg</sub>	Storage temperature		-65~150		

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	1.78	/W

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## BDX33/A/B/C

## CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	BDX33	I <sub>C</sub> =0.1A, I <sub>B</sub> =0	45			V
		BDX33A		60			
		BDX33B		80			
		BDX33C		100			
V <sub>CEsat</sub>	Collector-emitter saturation voltage	BDX33/33A	I <sub>C</sub> =4A, I <sub>B</sub> =8mA			2.5	V
		BDX33B/33C	I <sub>C</sub> =3A, I <sub>B</sub> =6mA				
V <sub>BE</sub>	Base-emitter on voltage	BDX33/33A	I <sub>C</sub> =4A; V <sub>CE</sub> =3V			2.5	V
		BDX33B/33C	I <sub>C</sub> =3A; V <sub>CE</sub> =3V				
I <sub>CBO</sub>	Collector cut-off current	BDX33	V <sub>CB</sub> =45V, I <sub>E</sub> =0			0.2	mA
		BDX33A	V <sub>CB</sub> =60V, I <sub>E</sub> =0				
		BDX33B	V <sub>CB</sub> =80V, I <sub>E</sub> =0				
		BDX33C	V <sub>CB</sub> =100V, I <sub>E</sub> =0				
I <sub>CEO</sub>	Collector cut-off current	BDX33	V <sub>CE</sub> =22V, I <sub>B</sub> =0			0.5	mA
		BDX33A	V <sub>CE</sub> =30V, I <sub>B</sub> =0				
		BDX33B	V <sub>CE</sub> =40V, I <sub>B</sub> =0				
		BDX33C	V <sub>CE</sub> =50V, I <sub>B</sub> =0				
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =5V; I <sub>C</sub> =0			5	mA
h <sub>FE</sub>	DC current gain	BDX33/33A	I <sub>C</sub> =4A; V <sub>CE</sub> =3V	750			
		BDX33B/33C	I <sub>C</sub> =3A; V <sub>CE</sub> =3V				
V <sub>F</sub>	Forward diode voltage		I <sub>F</sub> =8A			4.0	V

PACKAGE OUTLINE

