

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

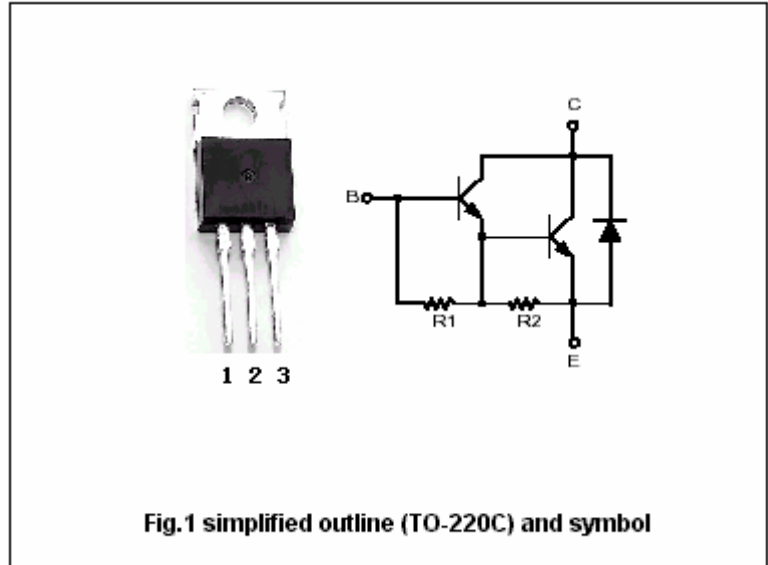


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	BDX33	45	V
		BDX33A	60	
		BDX33B	80	
		BDX33C	100	
V_{CEO}	Collector-emitter voltage	BDX33	45	V
		BDX33A	60	
		BDX33B	80	
		BDX33C	100	
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current-DC		10	A
I_{CM}	Collector current-Pulse		15	A
I_B	Base current		0.25	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	70	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal resistance junction to case	1.78	$^\circ\text{C}/\text{W}$

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CHARACTERISTICS

T_j=25 °C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE0(SUS)}	Collector-emitter sustaining voltage	BDX33	I _C =0.1A, I _B =0	45			V
		BDX33A		60			
		BDX33B		80			
		BDX33C		100			
V _{CEsat}	Collector-emitter saturation voltage	BDX33/33A	I _C =4A, I _B =8mA			2.5	V
		BDX33B/33C	I _C =3A, I _B =6mA				
V _{BE}	Base-emitter on voltage	BDX33/33A	I _C =4A; V _{CE} =3V			2.5	V
		BDX33B/33C	I _C =3A; V _{CE} =3V				
I _{CBO}	Collector cut-off current	BDX33	V _{CB} =45V, I _E =0			0.2	mA
		BDX33A	V _{CB} =60V, I _E =0				
		BDX33B	V _{CB} =80V, I _E =0				
		BDX33C	V _{CB} =100V, I _E =0				
I _{CEO}	Collector cut-off current	BDX33	V _{CE} =22V, I _B =0			0.5	mA
		BDX33A	V _{CE} =30V, I _B =0				
		BDX33B	V _{CE} =40V, I _B =0				
		BDX33C	V _{CE} =50V, I _B =0				
I _{EBO}	Emitter cut-off current		V _{EB} =5V; I _C =0			5	mA
h _{FE}	DC current gain	BDX33/33A	I _C =4A; V _{CE} =3V	750			
		BDX33B/33C	I _C =3A; V _{CE} =3V				
V _F	Forward diode voltage		I _F =8A			4.0	V

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PACKAGE OUTLINE

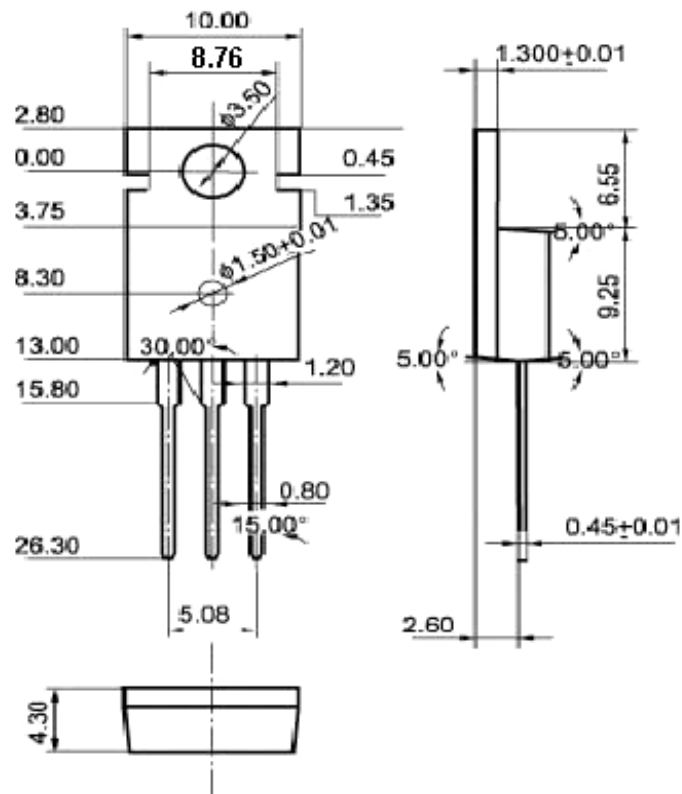


Fig.2 Outline dimensions