

Silicon NPN Power Transistors

BDX77

DESCRIPTION

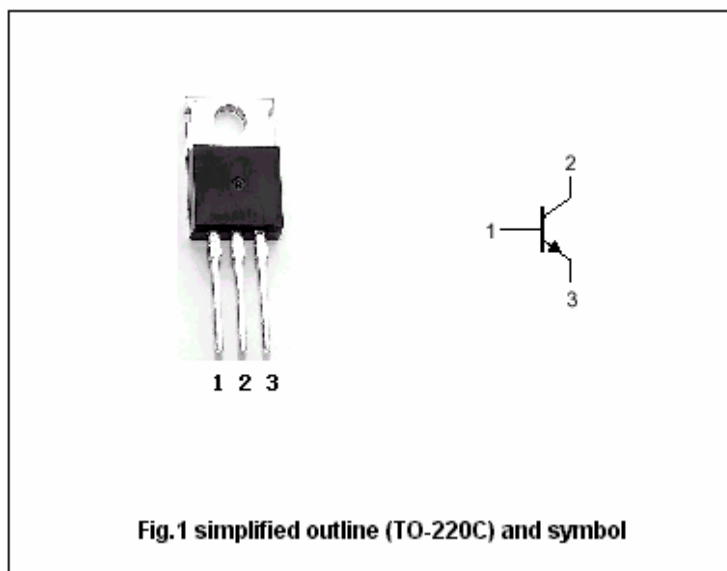
- With TO-220C package
- Low saturation voltage
- Complement to type BDX78
- Wide area of safe operation

APPLICATIONS

- For medium power switching and amplifier applications

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	Open emitter	100	V
V_{CEO}	Collector-emitter voltage	Open base	80	V
V_{EBO}	Emitter -base voltage	Open collector	5	V
I_C	Collector current (DC)		8	A
I_{CM}	Collector current-Peak		12	A
I_B	Base current		3	A
P_T	Total power dissipation	$T_C=25^\circ\text{C}$	60	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	2.08	$^\circ\text{C}/\text{W}$

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CHARACTERISTICS

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 $T_j = 25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C = 0.2\text{A}$; $I_B = 0$	80			V
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C = 1\text{mA}$; $I_E = 0$	100			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E = 1\text{mA}$; $I_C = 0$	5			V
$V_{CEsat-1}$	Collector-emitter saturation voltage	$I_C = 3\text{A}$; $I_B = 0.3\text{A}$			1.0	V
$V_{CEsat-2}$	Collector-emitter saturation voltage	$I_C = 6\text{A}$; $I_B = 0.6\text{A}$			1.5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C = 6\text{A}$; $I_B = 0.6\text{A}$			2.0	V
I_{CEO}	Collector cut-off current	$V_{CE} = 30\text{V}$; $I_B = 0$;			0.2	mA
I_{CBO}	Collector cut-off current	$V_{CB} = 40\text{V}$; $I_E = 0$; $T_j = 150^\circ\text{C}$			1.0	mA
I_{EBO}	Emitter cut-off current	$V_{EB} = 5\text{V}$; $I_C = 0$			0.5	mA
h_{FE}	DC current gain	$I_C = 1\text{A}$; $V_{CE} = 2\text{V}$	30			
f_T	Transition frequency	$I_C = 0.3\text{A}$; $V_{CE} = 3\text{V}$	7.0			MHz
V_{BE}	Base-emitter on voltage	$I_C = 3\text{A}$; $V_{CE} = 2\text{V}$			1.5	V

Switching times

t_{on}	Turn-on time	$I_C = 2\text{A}$ $I_{B1} = -I_{B2} = 0.2\text{A}$;			1.0	μs
t_{off}	Turn-off time				4.0	μs

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PACKAGE OUTLINE

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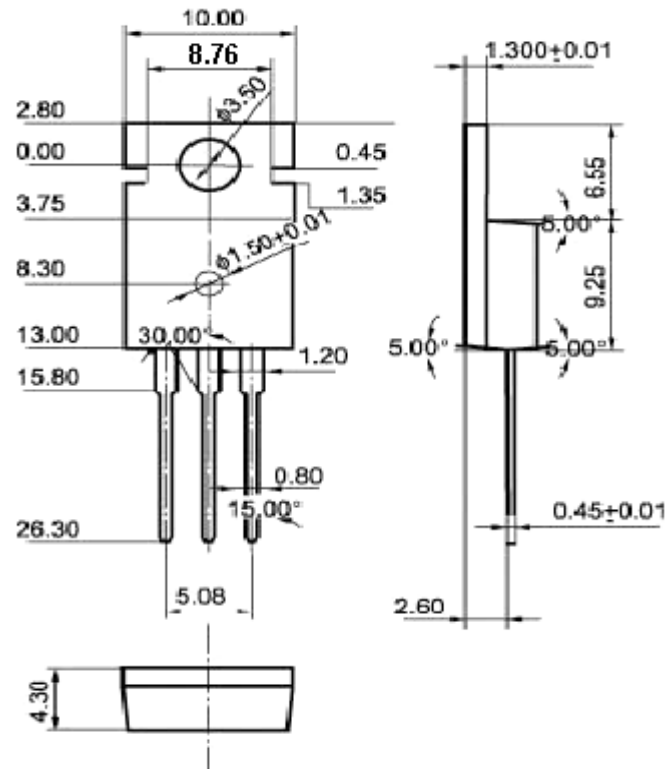


Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)