New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

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

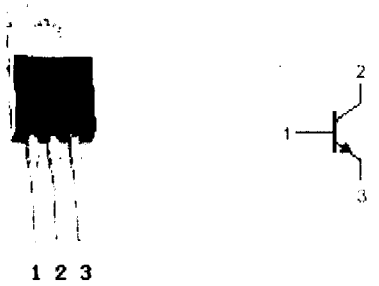

Fig.1 simplified outline (TO-220C) and symbol

PINNING

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

Absolute maximum ratings (Ta=25)

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	60	W
T_j	Junction temperature		150	
T_{stg}	Storage temperature		-65~150	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}C}$	Thermal resistance junction to case	2.08	/W

CHARACTERISTICS

Tj=25 unless otherwise specified

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

Switching times

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