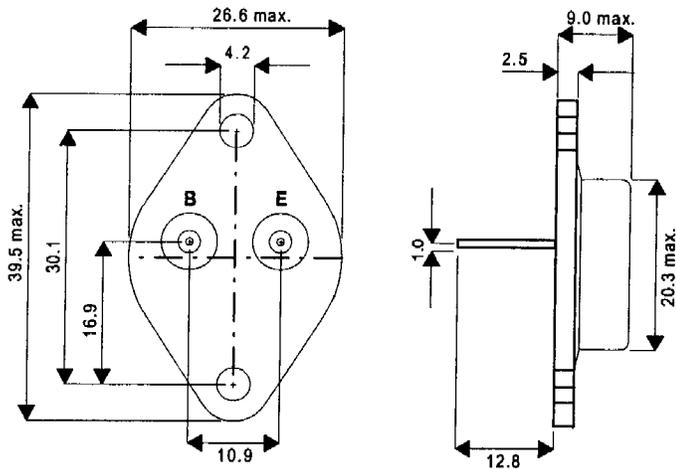*New Jersey Semi-Conductor Products, Inc.*

MECHANICAL DATA
Dimensions in mm

TO3 Package.
Case is collector.

PNP
DARLINGTON
POWER
TRANSISTOR
BDX68
BDX68A
BDX68B
BDX68C

PNP Darlington transistors for audio output stages and general amplifier and switching applications.

**NPN complements are:
BDX69, BDX69A, BDX69B, BDX69C.**

ABSOLUTE MAXIMUM RATINGS

	(T_{case} = 25°C unless otherwise stated)	BDX 68	BDX 68A	BDX 68B	BDX 68C
V_{CBO}	Collector – Base Voltage (Open Emitter)	–60V	–80V	–100V	–120V
V_{CEO}	Collector – Emitter Voltage (Open Base)	–60V	–80V	–100V	–120V
V_{EBO}	Emitter – Base Voltage (Open Collector)	–5V	–5V	–5V	–5V
I_C	Collector Current		–25A		
I_{CM}	Collector Current (Peak)		–40A		
I_B	Base Current		–500mA		
P_{tot}	Total Power Dissipation at T_{case}= 25°C		200W		
T_J	Maximum Junction Temperature		200°C		
T_{STG}	Storage Junction Temperature		–65 to 200°C		
$R_{\theta J\text{-}MB}$	Thermal Resistance, Junction to Mounting Base.		0.875°C / W		

ELECTRICAL CHARACTERISTICS ($T_J = 25°C$, unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	$I_E = 0$	$V_{CB} = V_{CBOmax}$			2	mA
		$I_E = 0$ $T_J = 200°C$	$V_{CB} = ½V_{CBOmax}$			10	
I_{CEO}	Collector Cut-off Current	$I_B = 0$	$V_{CE} = ½V_{CEOmax}$			6	mA
I_{EBO}	Emitter Cut-off Current	$I_C = 0$	$V_{EB} = -5V$			10	mA
h_{FE*}	D.C. Current Gain	$I_C = -5A$	$V_{CE} = -3V$		3000		—
		$I_C = -20A$	$V_{CE} = -3V$	1000			
		$I_C = -30A$	$V_{CE} = -3V$		1000		
V_{BE*}	Base – Emitter Voltage	$I_C = -20A$	$V_{CE} = -3V$			2.5	V
V_{CEsat*}	Collector - Emitter Saturation Voltage	$I_C = -20A$	$I_B = -80mA$			2	V
C_c	Collector Capacitance	$I_E = I_e = 0$ $f = 1MHz$	$V_{CB} = -10V$		600		pF
f_{hfe}	Cut-off Frequency	$I_C = -10A$	$V_{CE} = -3V$		60		kHz
$|h_{fe}|$	Small Signal Current Gain	$I_C = -10A$ $f = 1MHz$	$V_{CE} = -3V$		20		—
V_F	Diode, Forward Voltage	$I_F = 20A$			2		V
t_{on}	Turn–on Time	$I_{Con} = -20A$			1		µs
t_{off}	Turn–off Time	$I_{Bon} = -I_{Boff} = -80mA$			3.5		

* Pulse Test: $t_p < 300µs$, $\delta < 2\%$