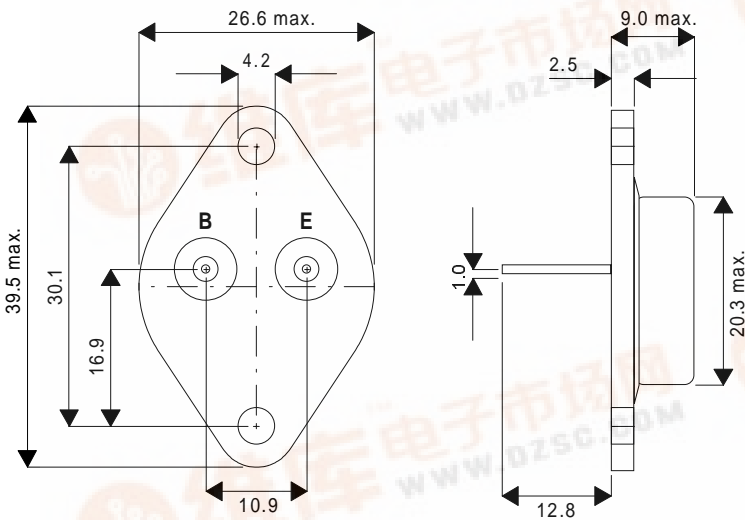




BDX69
BDX69A
BDX69B
BDX69C

MECHANICAL DATA
 Dimensions in mm



TO3 Package.
 Case is collector.

NPN
DARLINGTON
POWER
TRANSISTOR

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

PNP complements are:
BDX68, BDX68A, BDX68B, BDX68C.

ABSOLUTE MAXIMUM RATINGS

($T_{case} = 25^{\circ}C$ unless otherwise stated)

	BDX 69	BDX 69A	BDX 69B	BDX 69C
V_{CBO} Collector – Base Voltage (Open Emitter)	80V	100V	120V	140V
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 $T_{MB} = 25^{\circ}C$	200W			
T_J Maximum Junction Temperature	200°C			
T_{STG} Storage Junction Temperature	-65 to 200°C			
θ_{JM} Thermal Resistance, Junction to Mounting Base.	0.875°C / W			



ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, 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
	$I_E = 0$ $V_{CB} = \frac{1}{2}V_{CBOmax}$ $T_J = 200^\circ\text{C}$			10	
I_{CEO} Collector Cut-off Current	$I_B = 0$ $V_{CE} = \frac{1}{2}V_{CEOmax}$			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			
	$I_C = 30A$ $V_{CE} = 3V$		4000		
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	$I_E = I_e = 0$ $V_{CB} = 10V$ $f = 1MHz$		600		pF
f_{hfe} Cut-off Frequency	$I_C = 10A$ $V_{CE} = 3V$		50		kHz
$ h_{fe} $ Small Signal Current Gain	$I_C = 10A$ $V_{CE} = 3V$ $f = 1MHz$		20		—
V_F Diode, Forward Voltage	$I_F = 20A$		2.5		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: $t_p < 300\mu s$, $\delta < 2\%$