



NPN BDX53 – BDX53A – BDX53B – BDX53C

SILICON POWER DARLINGTON TRANSISTORS

The BDX53, BDX53A, BDX53B and BDX53C are silicon epitaxial-base NPN transistors in monolithic Darlington configuration and are mounted in Jedec TO-220 plastic package. They are intended for use in audio amplifiers, medium power linear and switching applications. The complementary PNP types are the BDX54, BDX54A, BDX54B and BDX54C respectively. Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CEO}	Collector-Emitter Voltage	$I_B=0$	BDX53	45	V
			BDX53A	60	
			BDX53B	80	
			BDX53C	100	
V_{CBO}	Collector-Base Voltage	$I_E=0$	BDX53	45	V
			BDX53A	60	
			BDX53B	80	
			BDX53C	100	
V_{EBO}	Emitter-Base Voltage	$I_C=0$		5	V
I_C	Collector Current	$I_{C(RMS)}$		8	A
		I_{CM}		12	
I_B	Base Current			0.2	A
P_T	Power Dissipation	@ $T_C = 25^\circ$		60	W
T_J	Junction Temperature			150	$^\circ\text{C}$
T_S	Storage Temperature			-65 to +150	

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	2.08	$^\circ\text{C/W}$

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

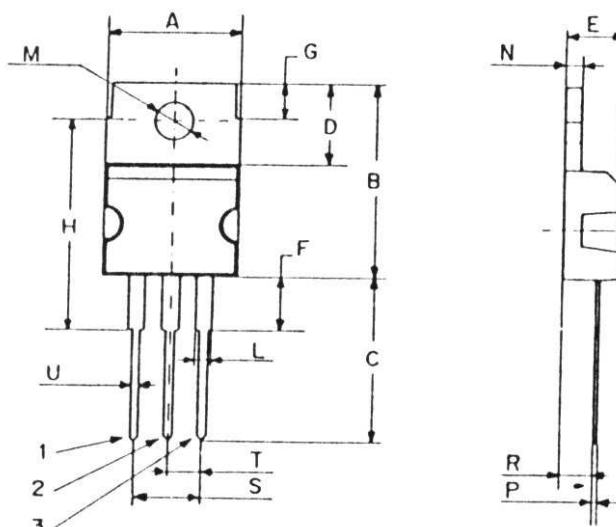
Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit	
$V_{CEO(SUS)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=100\text{ mA}$ $I_B = 0$	BDX53	45	-	-	V	
			BDX53A	60	-	-		
			BDX53B	80	-	-		
			BDX53C	100	-	-		
I_{CEO}	Collector Cutoff Current	$V_{CB}=22V, I_B = 0$	BDX53	-	-	0.5	mA	
		$V_{CB}=30V, I_B = 0$	BDX53A	-	-			
		$V_{CB}=40V, I_B = 0$	BDX53B	-	-			
		$V_{CB}=50V, I_B = 0$	BDX53C	-	-			
I_{EBO}	Emitter Cutoff Current	$V_{BE}=5\text{ V}$	BDX53	-	-	2	mA	
			BDX53A					
			BDX53B					
			BDX53C					
I_{CBO}	Collector-Base Cutoff Current	$V_{CBO}=45\text{ V}, I_E = 0$	BDX53	-	-	0.2	mA	
		$V_{CBO}=60\text{ V}, I_E = 0$	BDX53A	-	-			
		$V_{CBO}=80\text{ V}, I_E = 0$	BDX53B	-	-			
		$V_{CBO}=100\text{ V}, I_E = 0$	BDX53C	-	-			
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=3\text{ A}, I_B=12\text{ mA}$	BDX53	-	-	2	V	
			BDX53A					
			BDX53B					
			BDX53C					
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)	$I_C=3\text{ A}, I_B=12\text{ mA}$	BDX53	-	-	2.5	V	
			BDX53A					
			BDX53B					
			BDX53C					
V_F	Forward Voltage (pulse method)	$I_F=3\text{ A}$	BDX53	-	-	4.0	V	
			BDX53A					
			BDX53B					
			BDX53C					
		$I_F=8\text{ A}$	BDX53	-	1.8	2.5	V	
			BDX53A					
			BDX53B	-	2.5	-		
			BDX53C					
h_{FE}	DC Current Gain (*)	$V_{CE}=3\text{ V}, I_C=3\text{ A}$	BDX53	750	-	-	-	
			BDX53A					
			BDX53B					
			BDX53C					

(*) Pulse Width $\approx 300\text{ }\mu\text{s}$, Duty Cycle $\angle 1.5\%$

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MECHANICAL DATA CASE TO-220

DIMENSIONS (mm)		
	Min.	Max.
A	9,90	10,30
B	15,65	15,90
C	13,20	13,40
D	6,45	6,65
E	4,30	4,50
F	2,70	3,15
G	2,60	3,00
H	15,75	17,15
L	1,15	1,40
M	3,50	3,70
N	-	1,37
P	0,46	0,55
R	2,50	2,70
S	4,98	5,08
T	2,49	2,54
U	0,70	0,90



Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter
Case :	Collector

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