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 intented 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°		60	W
T_J	Junction Temperature			150	℃
T_S	Storage Temperature			-65 to +150	

THERMAL CHARACTERISTICS

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

NPN BDX53 – BDX53A – BDX53B – BDX53C

ELECTRICAL CHARACTERISTICS

TC=25℃ unless otherwise noted

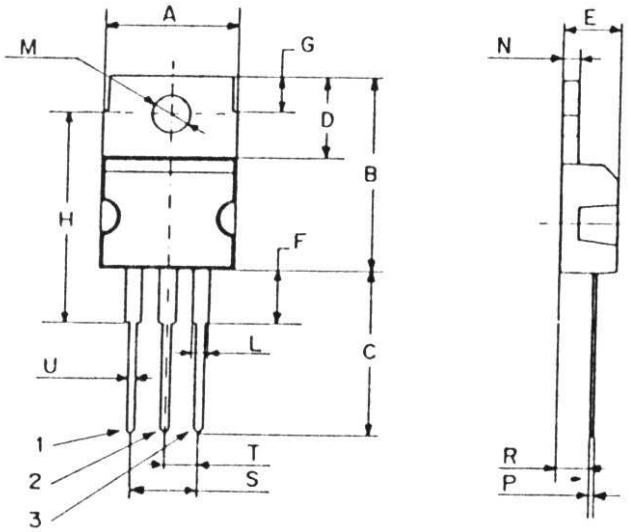
Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
$V_{CEO(SUS)}$	Collector-Emitter Breakdown Voltage (*)	I_C=100 mA I_B = 0	BDX53	45	-	-	V
			BDX53A	60	-	-	
			BDX53B	80	-	-	
			BDX53C	100	-	-	
I_{CEO}	Collector Cutoff Current	V_{CB}=22V, I_B = 0	BDX53	-	-	0.5	mA
		V_{CB}=30V, I_B = 0	BDX53A	-	-		
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

(*) Pulse Width ≈ 300 μs, Duty Cycle ∠ 1.5%

NPN BDX53 – BDX53A – BDX53B – BDX53C

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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