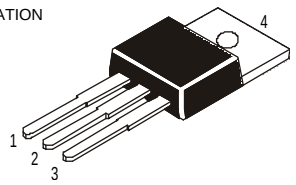
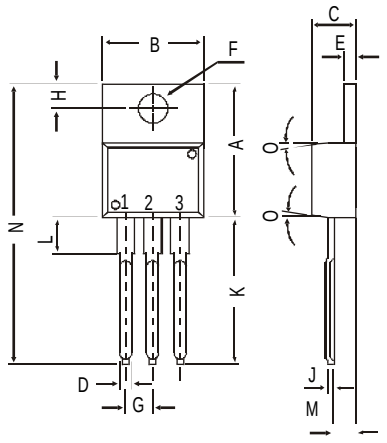
TO-220 Plastic Package

BDX53, BDX53A, BDX53B, BDX53C
BDX54, BDX54A, BDX54B, BDX54C

BDX53, 53A, 53B, 53C NPN PLASTIC POWER TRANSISTORS
BDX54, 54A, 54B, 54C PNP PLASTIC POWER TRANSISTORS
*Power **Darlingtons** for Linear and Switching Applications*

PIN CONFIGURATION
1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR





All diminsions in mm.

DIM	MIN.	MAX.
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D		0.90
E	1.15	1.40
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J		0.56
K	12.70	14.73
L	2.80	4.07
M	2.03	2.92
N		31.24
O	DEG 7	

ABSOLUTE MAXIMUM RATINGS

			53 54	***53A 54A***	***53B 54B***	***53C 54C***	
Collector-base voltage (open emitter)	V_{CBO}	*max.*	*45*	*60*	*80*	*100*	*V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*45*	*60*	*80*	*100*	*V*
Collector current	I_C	*max.*		*8.0*			*A*
Total power dissipation up to T_C = 25°C	P_{tot}	*max.*		*60*			*W*
Junction temperature	T_j	*max.*		*150*			*°C*
Collector-emitter saturation voltage							
I_C = 3 A; I_B = 12 mA	V_{CEsat}	*max.*		*2.0*			*V*
D.C. current gain							
I_C = 3 A; V_{CE} = 3 V	h_{FE}	*min.*		*750*			

RATINGS *(at T_A=25°C unless otherwise specified)*

Limiting values			***53 54***	***53A 54A***	***53B 54B***	***53C 54C***	
Collector-base voltage (open emitter)	V_{CBO}	*max.*	*45*	*60*	*80*	*100*	*V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*45*	*60*	*80*	*100*	*V*
Emitter-base voltage (open collector)	V_{EBO}	*max.*		*5.0*			*V*

Collector current	I_C	*max.*	*8.0*	*A*
Collector current (Peak value)	I_{CM}	*max.*	*12*	*A*
Base current	I_B	*max.*	*0.2*	*A*
Total power dissipation upto T_C=25°C	P_{tot}	*max.*	*60*	*W*
Derate above 25°C		*max.*	*0.48*	*W/°C*
Junction temperature	T_j	*max.*	*150*	*°C*
Storage temperature	T_{stg}		*–65 to +150*	*°C*

THERMAL RESISTANCE

From junction to case	$R_{th\ j-c}$	*2.08*	*°C/W*
From junction to ambient	$R_{th\ j-a}$	*7.0*	*°C/W*

CHARACTERISTICS

T_{amb} = 25°C unless otherwise specified

			53 54	***53A 54A***	***53B 54B***	***53C 54C***	
Collector cutoff current							
I_B = 0; V_{CB} = 45 V	I_{CBO}	*max.*	*0.2*	*–*	*–*	*–*	*mA*
I_B = 0; V_{CB} = 60 V	I_{CBO}	*max.*	*–*	*0.2*	*–*	*–*	*mA*
I_B = 0; V_{CB} = 80 V	I_{CBO}	*max.*	*–*	*–*	*0.2*	*–*	*mA*
I_B = 0; V_{CB} = 100 V	I_{CBO}	*max.*	*–*	*–*	*–*	*0.2*	*mA*
I_B = 0; V_{CE} = 22 V	I_{CEO}	*max.*	*0.5*	*–*	*–*	*–*	*mA*
I_B = 0; V_{CE} = 30 V	I_{CEO}	*max.*	*–*	*0.5*	*–*	*–*	*mA*
I_B = 0; V_{CE} = 40 V	I_{CEO}	*max.*	*–*	*–*	*0.5*	*–*	*mA*
I_B = 0; V_{CE} = 50 V	I_{CEO}	*max.*	*–*	*–*	*–*	*0.5*	*mA*
Emitter cut-off current							
I_C = 0; V_{EB} = 5 V	I_{EBO}	*max.*		*2.0*			*mA*
Breakdown voltages							
I_C = 100 mA; I_B = 0	$V_{CEO(sus)}$*	*min.*	*45*	*60*	*80*	*100*	*V*
I_C = 1 mA; I_E = 0	V_{CBO}	*min.*	*45*	*60*	*80*	*100*	*V*
I_E = 1 mA; I_C = 0	V_{EBO}	*min.*		*5.0*			*V*
Saturation voltages							
I_C = 3 A; I_B = 12 mA	V_{CEsat}*	*max.*		*2.0*			*V*
	V_{BEsat}*	*max.*		*2.5*			*V*
D.C. current gain							
I_C = 3 A; V_{CE} = 3 V	h_{FE}*	*min.*		*750*			
Small signal current gain							
I_C = 3 A; V_{CE} = 4 V; f = 1.0 MHz	$\|h_{fe}\|$	*min.*		*4.0*			
Output capacitance f = 1.0 MHz							
I_E = 0; V_{CB} = 10 V ***NPN***	C_o	*max.*		*300*			*pF*
PNP	C_o	*max.*		*200*			*pF*
Parallel-diode forward voltage							
I_F = 3 A	V_F	*max.*		*2.5*			*V*
I_F = 8 A	V_F	*typ.*		*2.5*			*V*

** Pulse test: pulse width ≤ 300 µs; duty cycle ≤ 2%*

Notes

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/ CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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