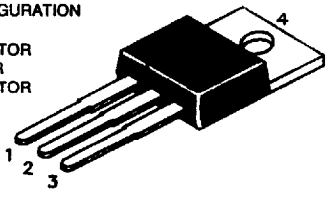
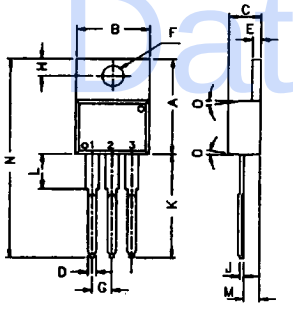
BDX53, 53A, 53B, 53C NPN PLASTIC POWER TRANSISTORS
BDX54, 54A, 54B, 54C PNP PLASTIC POWER TRANSISTORS

Power **Darlingtons** for Linear and Switching Applications

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





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	–	6,35
M	2,03	2,92
N	–	31,24
O	7 DEG	

ALL DIMENSIONS ARE IN M.M.

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%