

New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

DARLINGTON COMPLEMENTARY SILICON POWER TRANSISTORS

...designed for general-purpose amplifier and low speed switching applications

FEATURES:

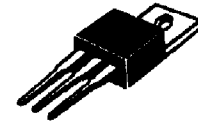
- * Collector-Emitter Sustaining Voltage-
 $V_{CE(sus)}$ = 45 V (Min) - BDX53, BDX54
 = 60 V (Min) - BDX53A, BDX54A
 = 80 V (Min) - BDX53B, BDX54B
 = 100 V (Min) - BDX53C, BDX54C
- * Monolithic Construction with Built-in Base-Emitter Shunt Resistor

NPN	PNP
BDX53	BDX54
BDX53A	BDX54A
BDX53B	BDX54B
BDX53C	BDX54C

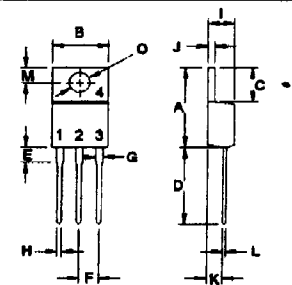
8 AMPERE
DARLINGTON
COMPLEMENTARY SILICON
POWER TRANSISTORS
45-100 VOLTS
60 WATTS

MAXIMUM RATINGS

Characteristic	Symbol	BDX53 BDX54	BDX53A BDX54A	BDX53B BDX54B	BDX53C BDX54C	Unit
Collector-Emitter Voltage	V_{CEO}	45	60	80	100	V
Collector-Base Voltage	V_{CBO}	45	60	80	100	V
Emitter-Base Voltage	V_{EBO}	5.0				V
Collector Current - Continuous	I_C	8.0				A
Peak	I_{CM}	12				
Base Current	I_B	0.2				A
Total Power Dissipation @ $T_C = 25^\circ C$ Derate above $25^\circ C$	P_D	60				W
		0.48				W/ $^\circ C$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +150				$^\circ C$



TO-220

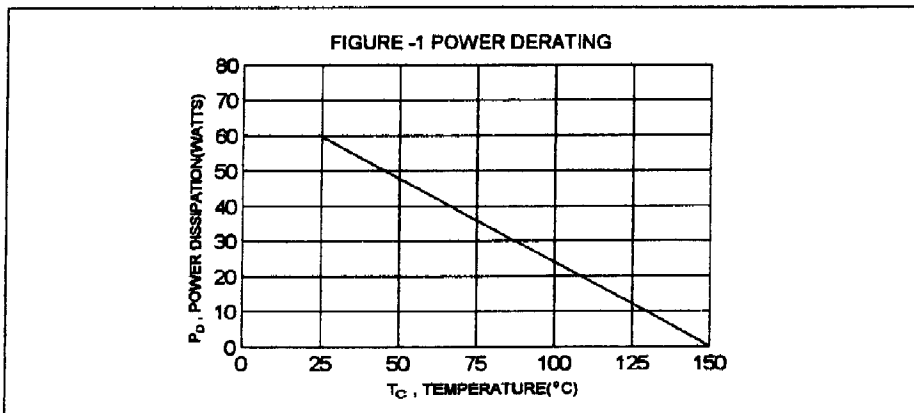


PIN 1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR (CASE)

DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.31
B	9.78	10.42
C	5.01	6.52
D	13.06	14.62
E	3.57	4.07
F	2.42	3.68
G	1.12	1.38
H	0.72	0.96
I	4.22	4.98
J	1.14	1.38
K	2.20	2.97
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	2.08	$^\circ C/W$



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

BDX53,A,B,C NPN / BDX54,A,B,C PNP

ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
----------------	--------	-----	-----	------

OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage(1) ($I_c = 100\text{ mA}$, $I_B = 0$)	BDX53, BDX54 BDX53A, BDX54A BDX53B, BDX54B BDX53C, BDX54C	$V_{CE(sus)}$	45 60 80 100	V
Collector Cutoff Current ($V_{CE} = 22\text{ V}$, $I_B = 0$) ($V_{CE} = 30\text{ V}$, $I_B = 0$) ($V_{CE} = 40\text{ V}$, $I_B = 0$) ($V_{CE} = 50\text{ V}$, $I_B = 0$)	BDX53, BDX54 BDX53A, BDX54A BDX53B, BDX54B BDX53C, BDX54C	I_{CEO}		0.5 0.5 0.5 0.5 mA
Collector-Base Cutoff Current ($V_{CB} = \text{Rated } V_{CB}$, $I_E = 0$)		I_{CBO}		200 μA
Emitter-Base Cutoff Current ($V_{EB} = 5.0\text{ V}$, $I_C = 0$)		I_{EBO}		2.0 mA

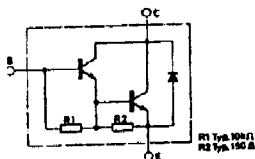
ON CHARACTERISTICS (1)

DC Current Gain ($I_C = 3.0\text{ A}$, $V_{CE} = 3.0\text{ V}$)	hFE	750		
Collector-Emitter Saturation Voltage ($I_C = 3.0\text{ A}$, $I_B = 12\text{ mA}$)	$V_{CE(sat)}$		2.0	V
Base-Emitter Saturation Voltage ($I_C = 3.0\text{ A}$, $I_B = 12\text{ mA}$)	$V_{BE(sat)}$		2.5	V
Diode Forward-Voltage ($I_F = 3.0\text{ A}$)	V_F		2.5	V

(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$

INTERNAL SCHEMATIC DIAGRAM

BDX53 Series NPN



BDX54 Series PNP

