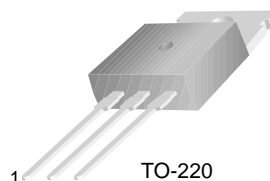# FAIRCHILD

SEMICONDUCTOR ™

BDX54/A/B/C

Hammer Drivers, Audio Amplifiers Applications
Power Liner and Switching Applications

• Power Darlington TR
• Complement to BDX53, BDX53A, BDX53B and BDX53C respectively

TO-220

1.Base   2.Collector   3.Emitter

PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter		Value	Units
V_{CBO}	Collector-Base Voltage	: BDX54	- 45	V
		: BDX54A	- 60	V
		: BDX54B	- 80	V
		: BDX54C	- 100	V
V_{CEO}	Collector-Emitter Voltage	: BDX54	- 45	V
		: BDX54A	- 60	V
		: BDX54B	- 80	V
		: BDX54C	- 100	V
V_{EBO}	Emitter-Base Voltage		- 5	V
I_C	Collector Current (DC)		- 8	A
I_{CP}	*Collector Current (Pulse)		- 12	A
I_B	Base Current		- 0.2	A
P_C	Collector Dissipation (T_C=25°C)		60	W
T_J	Junction Temperature		150	°C
T_{STG}	Storage Temperature		- 65 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
V_{CEO}(sus)	* Collector-Emitter Sustaining Voltage	I_C = - 100mA, I_B = 0				
	: BDX54		- 45			V
	: BDX54A		- 60			V
	: BDX54B		- 80			V
	: BDX54C		- 100			V
I_{CBO}	Collector Cut-off Current : BDX54	V_{CB} = - 45V, I_E = 0			- 200	μA
	: BDX54A	V_{CB} = - 60V, I_E = 0			- 200	μA
	: BDX54B	V_{CB} = - 80V, I_E = 0			- 200	μA
	: BDX54C	V_{CB} = - 100V, I_E = 0			- 200	μA
I_{CEO}	Collector Cut-off Current : BDX54	V_{CE} = - 22V, I_B = 0			- 500	μA
	: BDX54A	V_{CE} = - 30V, I_B = 0			- 500	μA
	: BDX54B	V_{CE} = - 40V, I_B = 0			- 500	μA
	: BDX54C	V_{CE} = - 50V, I_B = 0			- 500	μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = - 5V, I_C = 0			- 2	mA
h_{FE}	* DC Current Gain	V_{CE} = - 3V, I_C = - 3A	750			
V_{CE}(sat)	* Collector-Emitter Saturation Voltage	I_C = - 3A, I_B = - 12mA			- 2	V
V_{BE}(sat)	* Base-Emitter Saturation Voltage	I_C = - 3A, I_B = - 12mA			- 2.5	V
V_F	* Parallel Diode Forward Voltage	I_F = - 3A		- 1.8	- 2.5	V
		I_F = - 8A		- 2.5		V

* Pulse Test: PW=300μs, duty Cycle =1.5% Pulsed
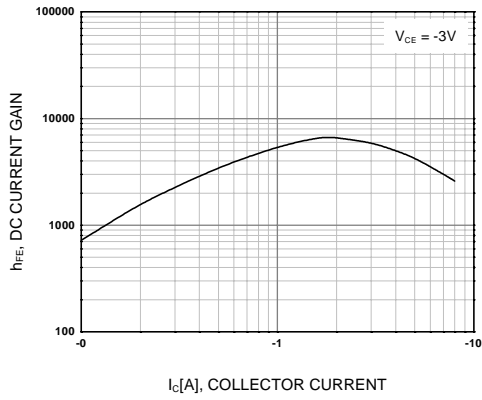
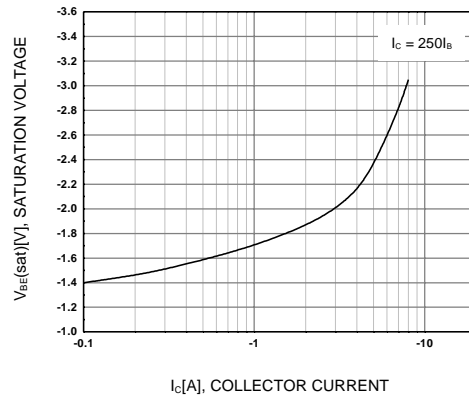# Typical Characteristics

Figure 1. DC current Gain

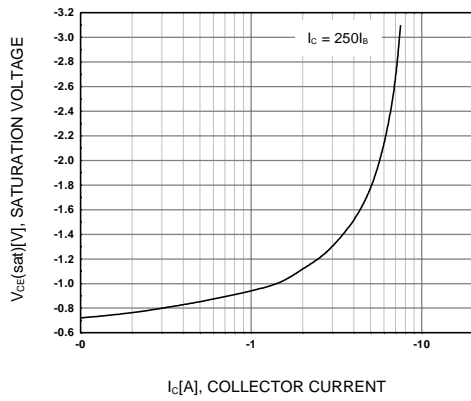Figure 2. Base-Emitter Saturation Voltage
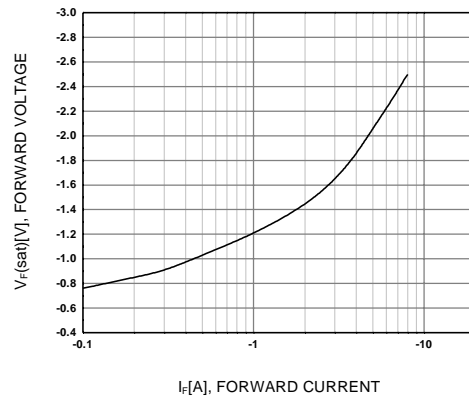

Figure 3. Collector-Emitter Saturation Voltage
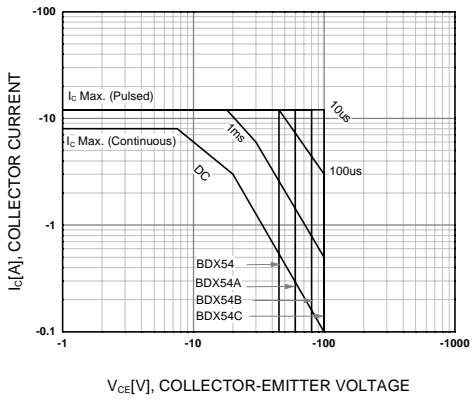

Figure 4. Damper Diode Forward Voltage

Figure 5. Safe Operating Area

Figure 6. Power Derating
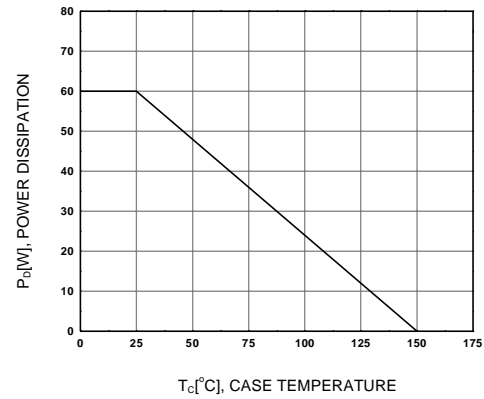
Package Demensions

TO-220

9.90 ±0.20

(8.70)

ø3.60 ±0.10

(1.70)

1.30 ±0.10

2.80 ±0.10

(3.70)

15.90 ±0.20

18.95MAX.

9.20 ±0.20

(1.46)

(3.00)

(45°)

13.08 ±0.20

(1.00)

1.27 ±0.10

1.52 ±0.10

10.08 ±0.30

0.80 ±0.10

2.54TYP
[2.54 ±0.20]

2.54TYP
[2.54 ±0.20]

10.00 ±0.20

4.50 ±0.20

1.30 $^{+0.10}_{-0.05}$

0.50 $^{+0.10}_{-0.05}$

2.40 ±0.20

Dimensions in Millimeters

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BDX54B
NPN Epitaxial Silicon Transistor

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Product	Product status	Pricing*	Package type	Leads	Packing method
BDX54BTU	Full Production	$0.366	TO-220	3	RAIL

* 1,000 piece Budgetary Pricing

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BDX54ATU	Full Production	$0.366	TO-220	3	RAIL

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Product	Product status	Pricing*	Package type	Leads	Packing method
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BDX54C	Full Production	$0.366	TO-220	3	BULK

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