



**BDX53BFP**

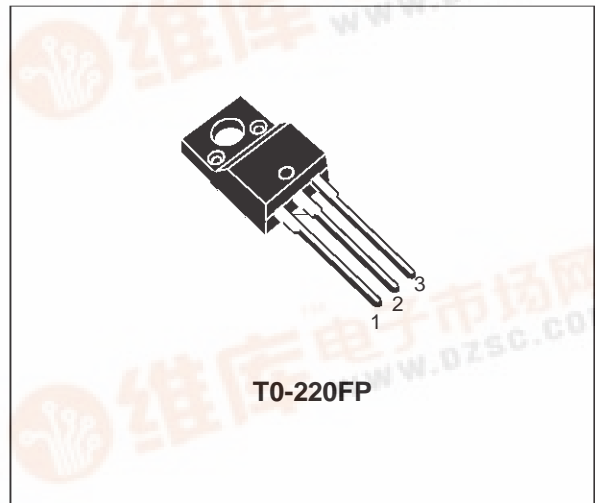
**SILICON POWER DARLINGTON TRANSISTOR**

**APPLICATIONS:**

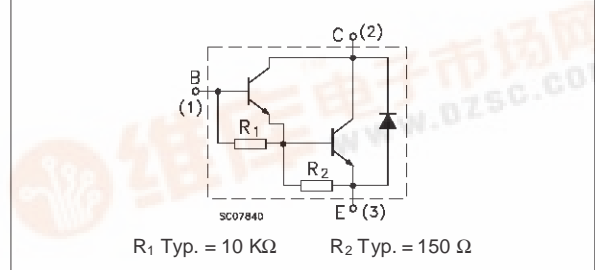
- GENERAL PURPOSE SWITCHING AND AMPLIFIER
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT
- FULLY MOLDED ISOLATED PACKAGE
- 2000 V DC ISOLATION (U.L. COMPLIANT)

**DESCRIPTION**

The BDX53BFP is a silicon epitaxial-base NPN power transistor in monolithic Darlington configuration and are mounted in T0-220FP fully molded isolated package. It is intended for use in hammer drivers, audio amplifiers and other medium power linear and switching applications.



**INTERNAL SCHEMATIC DIAGRAM**



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage (I <sub>E</sub> = 0)	80	V
V <sub>CEO</sub>	Collector-Emitter Voltage (I <sub>B</sub> = 0)	80	V
V <sub>EBO</sub>	Emitter-base Voltage (I <sub>C</sub> = 0)	5	V
I <sub>C</sub>	Collector Current	8	A
I <sub>CM</sub>	Collector Peak Current (repetitive)	12	A
I <sub>B</sub>	Base Current	0.2	A
P <sub>tot</sub>	Total Dissipation at T <sub>c</sub> ≤ 25 °C	29	W
T <sub>stg</sub>	Storage Temperature	-65 to 150	°C
T <sub>j</sub>	Max. Operating Junction Temperature	150	°C

# BDX53BFP

## THERMAL DATA

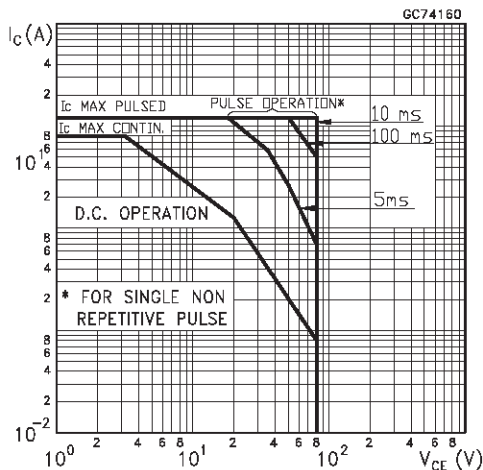
$R_{thj-case}$	Thermal Resistance Junction-case	Max	4.3	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	70	$^{\circ}C/W$

## ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cut-off Current ( $I_E = 0$ )	$V_{CB} = 80 V$			0.2	mA
$I_{CEO}$	Collector Cut-off Current ( $I_B = 0$ )	$V_{CB} = 40 V$			0.5	mA
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5 V$			2	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 100 mA$	80			V
$V_{CE(sat)*}$	Collector-emitter Saturation Voltage	$I_C = 3 A$ $I_B = 12 mA$			2	V
$V_{BE(sat)*}$	Base-emitter Saturation Voltage	$I_C = 3 A$ $I_B = 12 mA$			2.5	V
$h_{FE*}$	DC Current Gain	$I_C = 3 A$ $V_{CE} = 3 V$	750			
$V_F*$	Parallel-diode Forward Voltage	$I_F = 3 A$ $I_F = 8 A$		1.8 2.5	2.5	V V

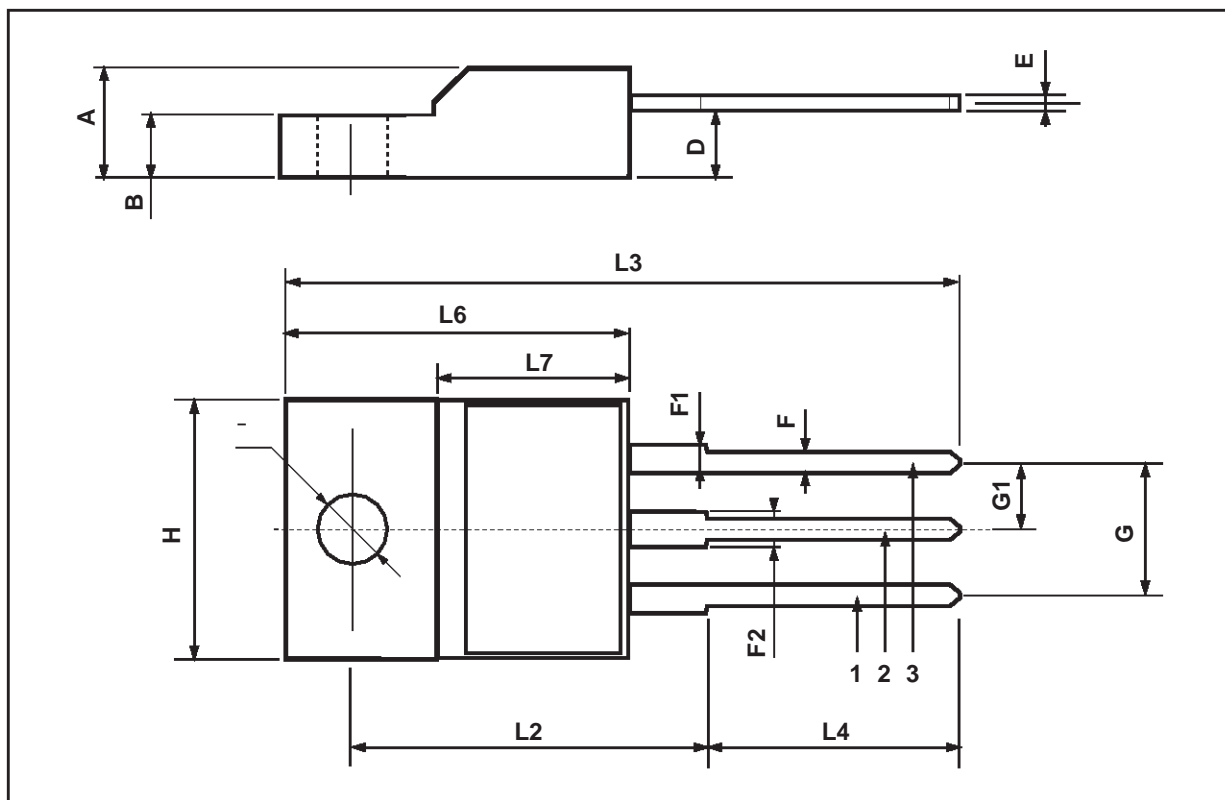
\* Pulsed: Pulse duration = 300  $\mu s$ , duty cycle 1.5 %

## Safe Operating Area



## TO-220FP MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.4		4.6	0.173		0.181
B	2.5		2.7	0.098		0.106
D	2.5		2.75	0.098		0.108
E	0.45		0.7	0.017		0.027
F	0.75		1	0.030		0.039
F1	1.15		1.7	0.045		0.067
F2	1.15		1.7	0.045		0.067
G	4.95		5.2	0.195		0.204
G1	2.4		2.7	0.094		0.106
H	10		10.4	0.393		0.409
L2		16			0.630	
L3	28.6		30.6	1.126		1.204
L4	9.8		10.6	0.385		0.417
L6	15.9		16.4	0.626		0.645
L7	9		9.3	0.354		0.366
Ø	3		3.2	0.118		0.126



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