

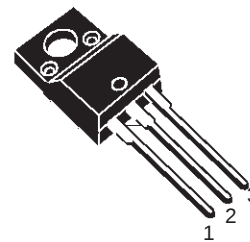
SILICON POWER DARLINGTON TRANSISTOR

APPLICATIONS:

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

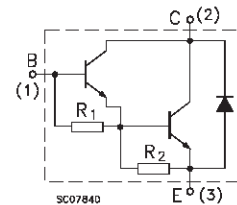
DESCRIPTION

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.



T0-220FP

INTERNAL SCHEMATIC DIAGRAM



R_1 Typ. = 10 K Ω

R_2 Typ. = 150 Ω

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	80	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	80	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	5	V
I_C	Collector Current	8	A
I_{CM}	Collector Peak Current (repetitive)	12	A
I_B	Base Current	0.2	A
P_{tot}	Total Dissipation at $T_c \leq 25^\circ\text{C}$	29	W
T_{stg}	Storage Temperature	-65 to 150	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	150	$^\circ\text{C}$

BDX53BFP

THERMAL DATA

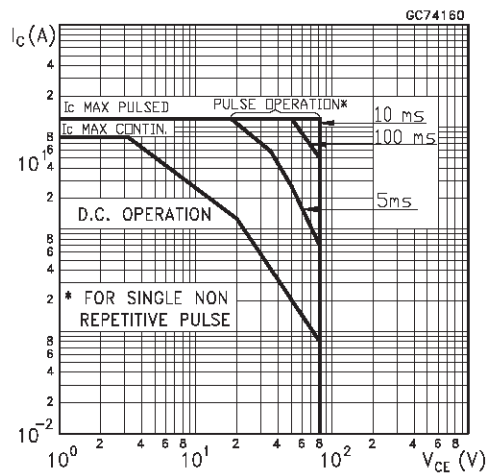
R _{thj-case}	Thermal Resistance Junction-case	Max	4.3	°C/W
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	70	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °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

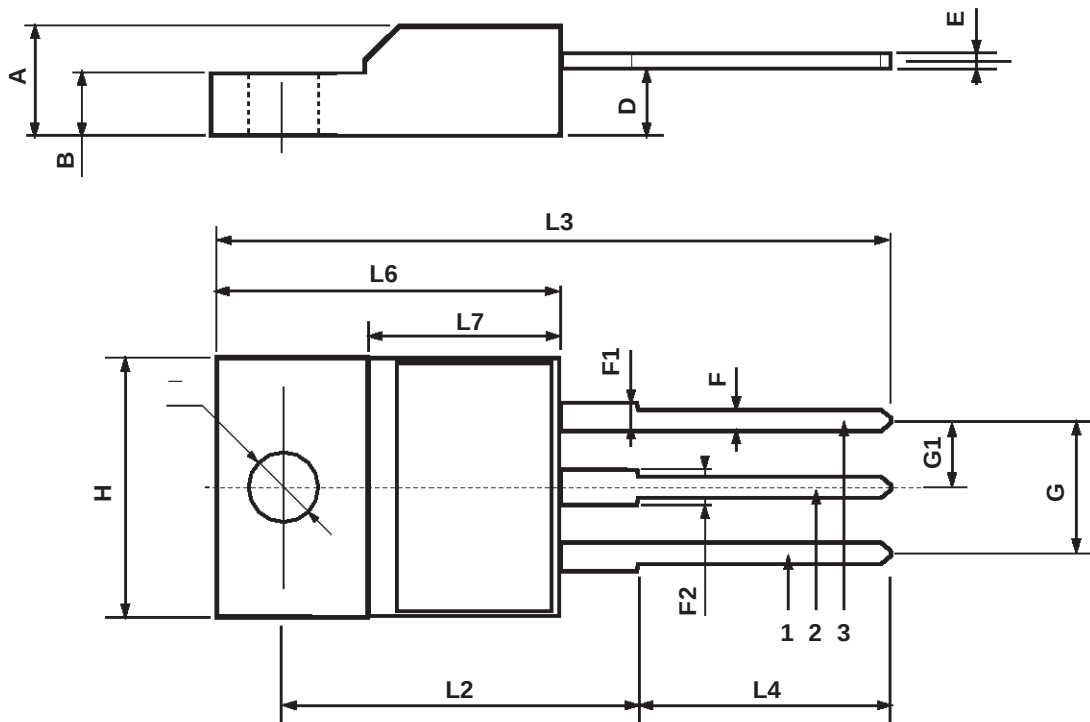
* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

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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