



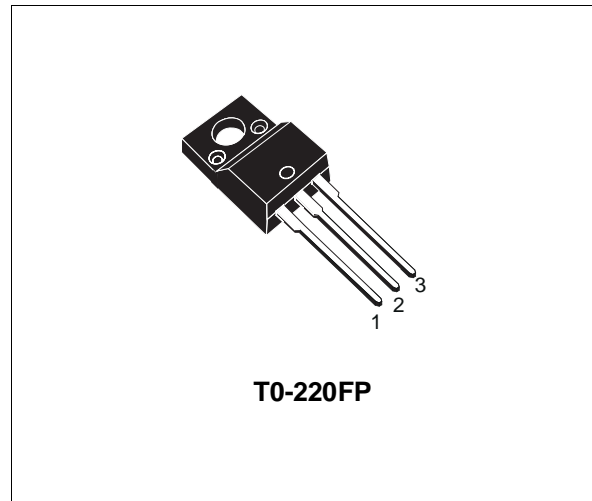
SILICON POWER DARLINGTON TRANSISTOR

APPLICATIONS:

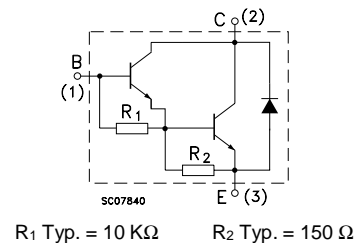
- GENERAL PURPOSE SWITCHING AND AMPLIFIER
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT
- FULLY INSULATED PACKAGE (U.L. COMPLIANT) FOR EASY MOUNTING

DESCRIPTION

The BDX53BFP is a silicon Epitaxial-Base NPN power transistor in monolithic Darlington configuration 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_{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 $T_c \leq 25^\circ C$	29	W
V_{isol}	Insulation Withstand Voltage (RMS) from All Three Leads to External Heatsink	1500	V
T_{stg}	Storage Temperature	-65 to 150	$^\circ C$
T_j	Max. Operating Junction Temperature	150	$^\circ C$

BDX53BFP

THERMAL DATA

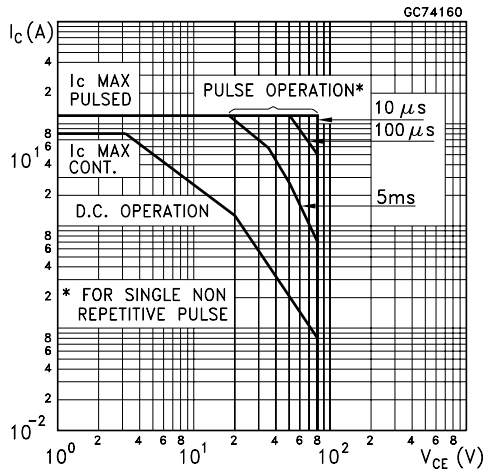
R _{thj-case}	Thermal Resistance Junction-case	Max	4.3	°C/W
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	70	°C/W

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 _{CE} = 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

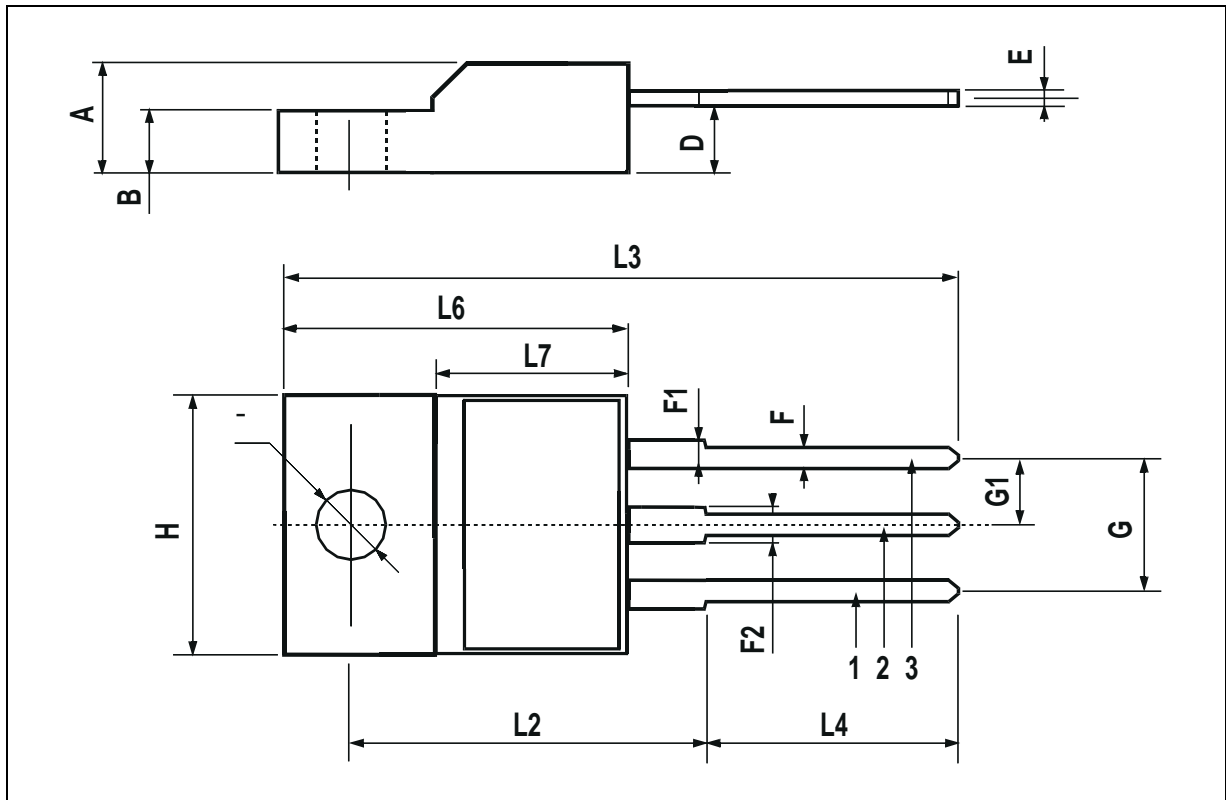
* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

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
∅	3		3.2	0.118		0.126



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