

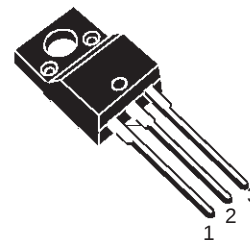
COMPLEMENTARY SILICON POWER TRANSISTORS

- BD534FP IS SGS-THOMSON PREFERRED SALESTYPE
- FULLY MOLDED ISOLATED PACKAGE
- 2000 V DC ISOLATION (U.L. COMPLIANT)

DESCRIPTION

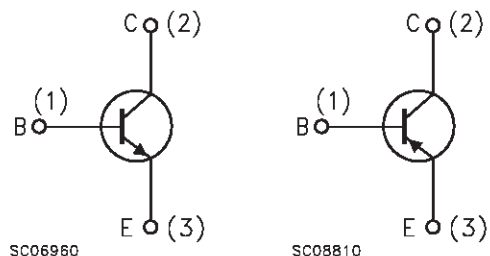
The BD533FP is silicon epitaxial-base NPN power transistor in Jedec TO-220FP fully molded isolated package, intended for use in medium power linear and switching applications.

The complementary PNP type is BD534FP.



TO-220FP

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		NPN	BD533FP	
		PNP	BD534FP	
V_{CBO}	Collector-Base Voltage ($I_E = 0$)		45	V
V_{CES}	Collector-Emitter Voltage ($V_{BE} = 0$)		45	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)		45	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)		5	V
I_C, I_E	Collector and Emitter Current		8	A
I_B	Base Current		1	A
P_{tot}	Total Dissipation at $T_C \leq 25^\circ\text{C}$		25	W
T_{stg}	Storage Temperature		-65 to 150	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature		150	$^\circ\text{C}$

For PNP types voltage and current values are negative.

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	5.1	°C/W
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	70	°C/W

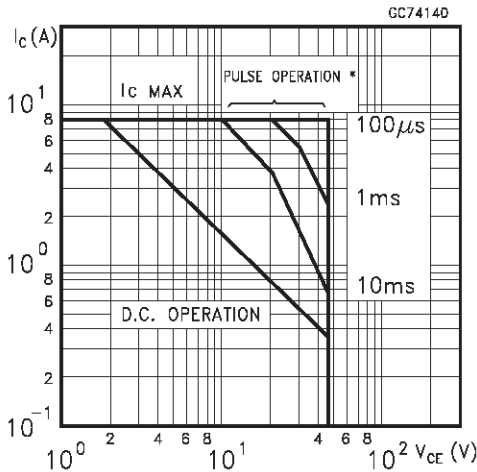
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 45 V			100	μA
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	V _{CE} = 45 V			100	μA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			1	mA
V _{CEO(sus)} *	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 100 mA	45			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 2 A I _C = 6 A		0.8	0.8	V V
V _{BE} *	Base-Emitter Voltage	I _C = 2 A V _{CE} = 2 V			1.5	V
h _{FE} *	DC Current Gain	I _C = 10 mA I _C = 500 mA I _C = 2 A	20 40 25			
f _T	Transition frequency	I _C = 500 mA V _{CE} = 1 V	3	12		MHz

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

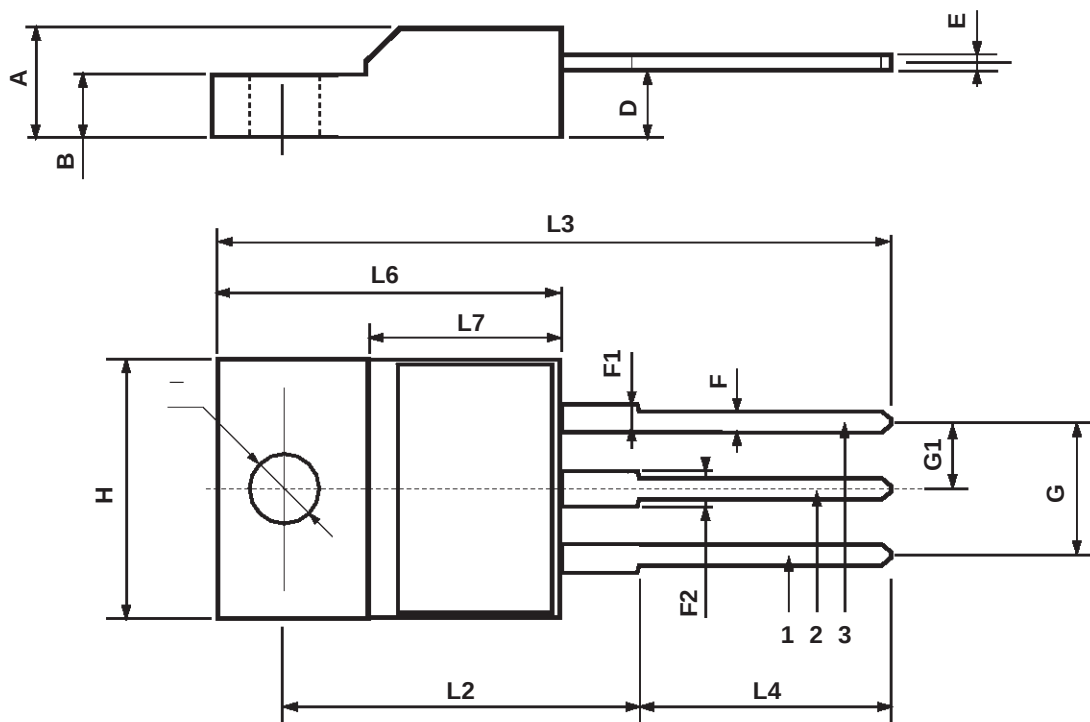
For PNP types voltage and current values are negative.

Safe Operating Areas



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



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1998 SGS-THOMSON Microelectronics - Printed in Italy - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A