

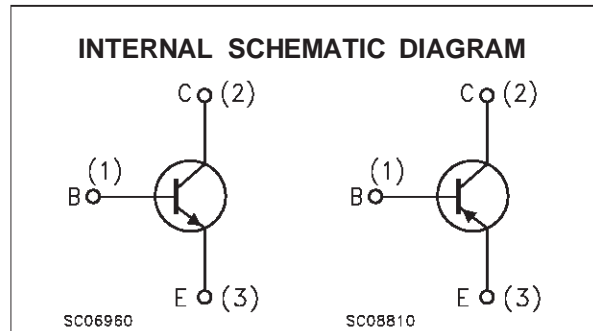
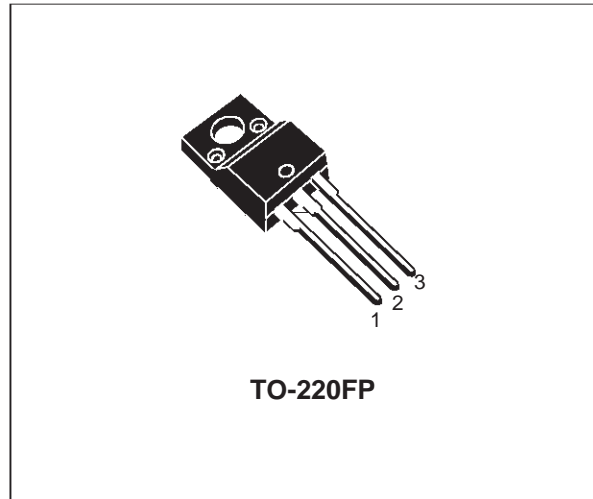
## COMPLEMENTARY SILICON POWER TRANSISTORS

- 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.



### 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.

# BD533FP / BD534FP

## THERMAL DATA

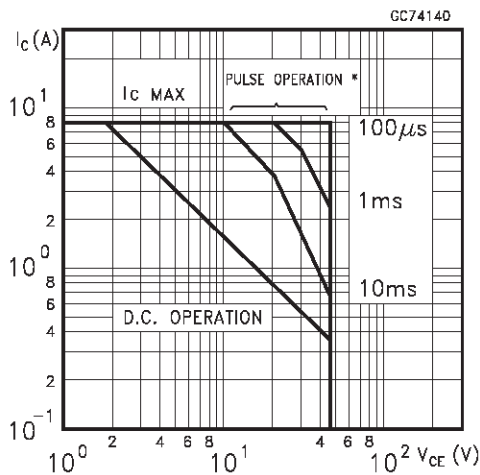
R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	5.1	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-ambient	Max	70	°C/W

## ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = 45 V				100	μA
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0)	V <sub>CE</sub> = 45 V				100	μA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V				1	mA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 100 mA		45			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2 A I <sub>C</sub> = 6 A	I <sub>B</sub> = 0.2 A I <sub>B</sub> = 0.6 A		0.8	0.8	V V
V <sub>BE*</sub>	Base-Emitter Voltage	I <sub>C</sub> = 2 A	V <sub>CE</sub> = 2 V			1.5	V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 10 mA I <sub>C</sub> = 500 mA I <sub>C</sub> = 2 A	V <sub>CE</sub> = 5 V V <sub>CE</sub> = 2 V V <sub>CE</sub> = 2 V	20 40 25			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> = 500 mA	V <sub>CE</sub> = 1 V	3	12		MHz

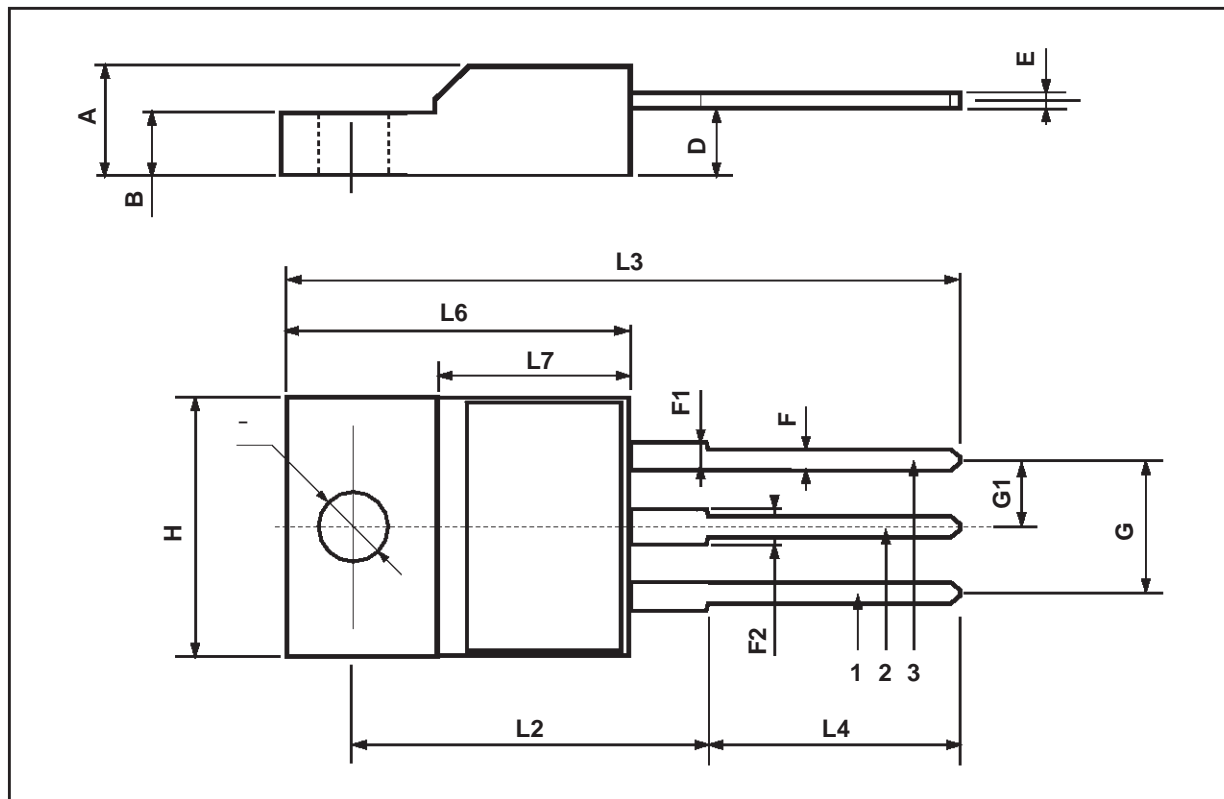
\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %  
For PNP types voltage and current values are negative.

## 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



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