

## COMPLEMENTARY SILICON POWER TRANSISTORS

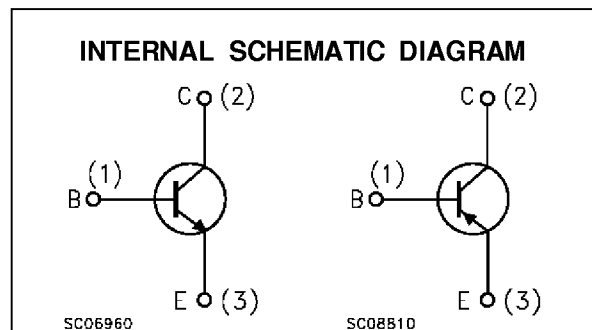
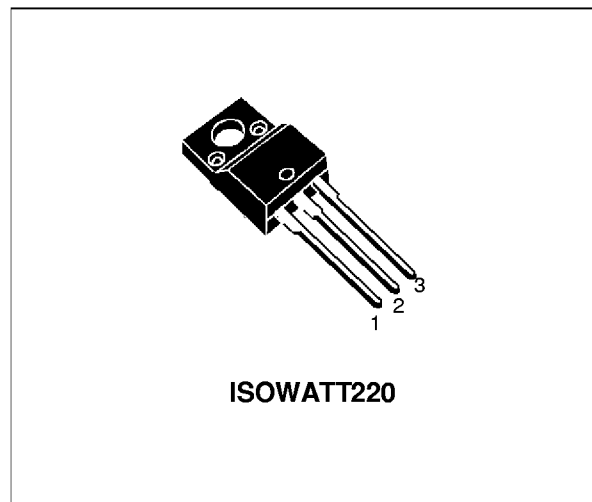
■ SGS-THOMSON PREFERRED SALESTYPES

**DESCRIPTION**

The BD533FI, is a silicon epitaxial-base NPN transistor mounted in ISOWATT220 plastic package.

They are intended for use in medium power linear and switching applications.

The complementary PNP type is the BD534FI.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value		Unit
		NPN	BD533FI	
		PNP	BD534FI	
V <sub>CBO</sub>	Collector-Base Voltage (I <sub>E</sub> = 0)		45	V
V <sub>CES</sub>	Collector-Emitter Voltage (V <sub>BE</sub> = 0)		45	V
V <sub>CEO</sub>	Collector-Emitter Voltage (I <sub>B</sub> = 0)		45	V
V <sub>EBO</sub>	Emitter-Base Voltage (I <sub>C</sub> = 0)		5	V
I <sub>C</sub> , I <sub>E</sub>	Collector and Emitter Current		8	A
I <sub>B</sub>	Base Current		1	A
P <sub>tot</sub>	Total Dissipation at T <sub>c</sub> ≤ 25 °C		25	W
T <sub>stg</sub>	Storage Temperature		-65 to 150	°C
T <sub>j</sub>	Max. Operating Junction Temperature		150	°C

For PNP types voltage and current values are negative.

## BD533FI/BD534FI

### THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	5	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	62.5	$^{\circ}C/W$

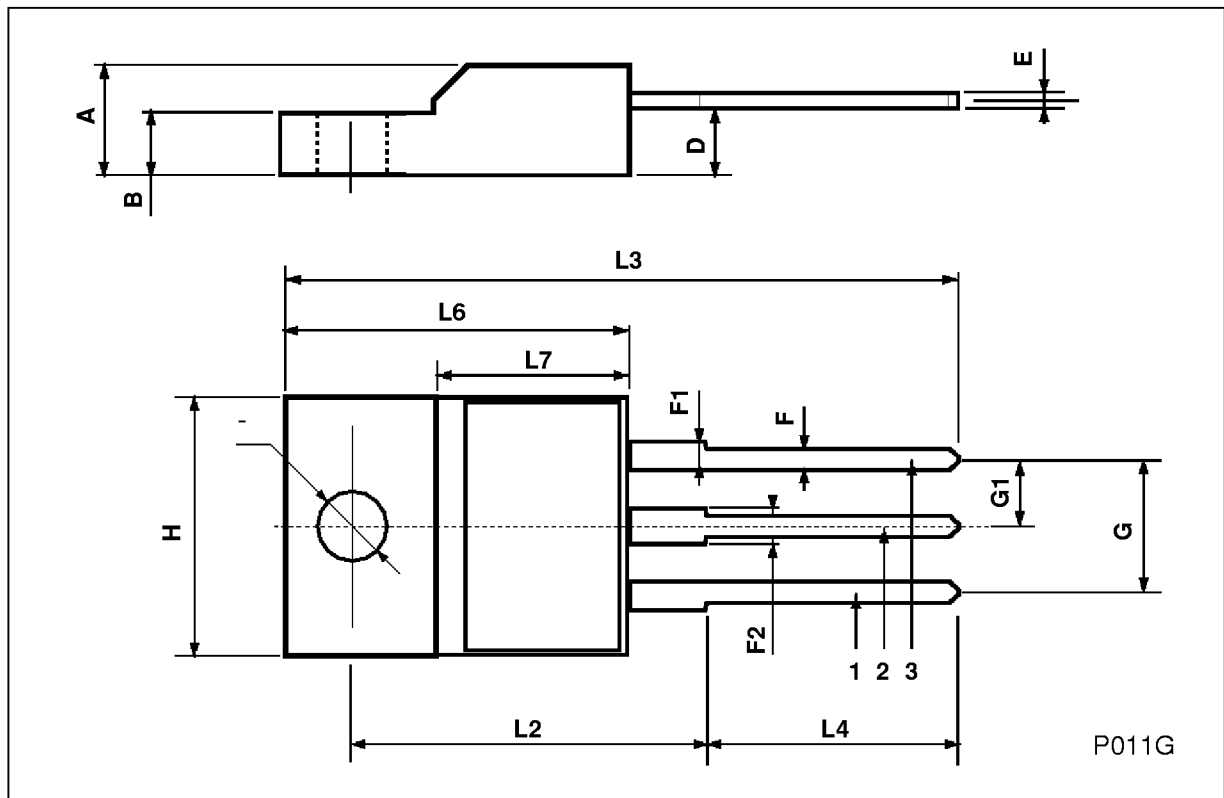
### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CES}$	Collector Cut-off Current ( $V_{BE} = 0$ )	$V_{CE} = 45 V$			0.1	mA
$I_{CBO}$	Collector Cut-off Current ( $I_E = 0$ )	$V_{CB} = 45 V$			0.1	mA
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5 V$			1	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage	$I_C = 100 mA$	45			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 2 A$ $I_B = 0.2 A$ $I_C = 6 A$ $I_B = 0.6 A$		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	$I_C = 10 mA$ $V_{CE} = 5 V$ $I_C = 500 mA$ $V_{CE} = 2 V$ $I_C = 2 A$ $V_{CE} = 2 V$	20 40 25			
$f_T$	Transition Frequency	$I_C = 500 mA$ $V_{CE} = 1 V$	3	12		MHz

\* Pulsed: Pulse duration = 300  $\mu s$ , duty cycle  $\leq 2\%$   
For PNP types voltage and current values are negative.

**ISOWATT220 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	0.4		0.7	0.015		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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