

POWER LINEAR AND SWITCHING APPLICATIONS

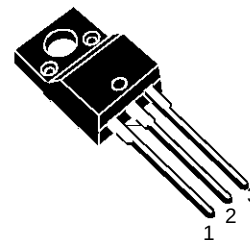
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

APPLICATION

- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

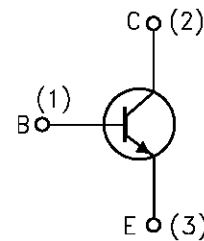
DESCRIPTION

The BD905FI is silicon epitaxial-base NPN power transistor in ISOWATT220 plastic package. It is intended for use in power linear and switching applications.



ISOWATT220

INTERNAL SCHEMATIC DIAGRAM



SC06960

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	45	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	45	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	5	V
I_E, I_C	Emitter and Collector Current	15	A
I_B	Base Current	5	A
P_{tot}	Total Dissipation at $T_c = 25^\circ\text{C}$	35	W
T_{stg}	Storage Temperature	-65 to 150	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	150	$^\circ\text{C}$

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	3.57	°C/W
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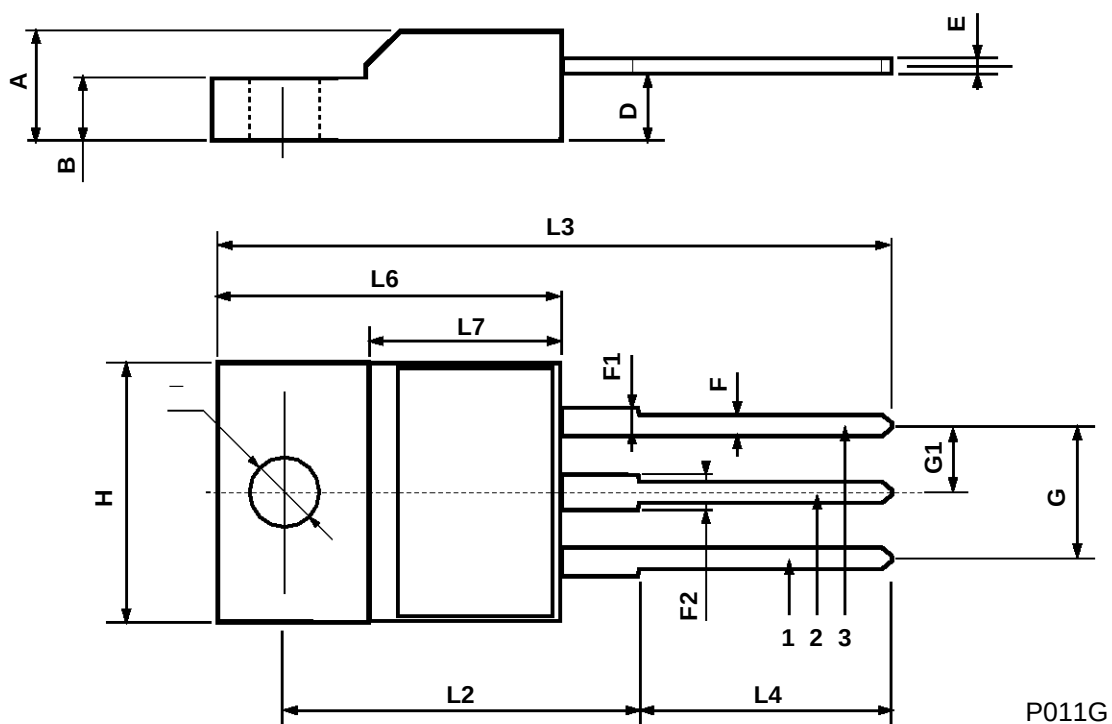
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 45 V T _{case} = 150 °C			500	μA
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CB} = 30 V			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 _B = 0)	I _C = 100 mA	45			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 5 A I _B = 0.5 A I _C = 10 A I _B = 2.5 A			1 3	V V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 10 A I _B = 2.5 A			2.5	V
V _{BE*}	Base-Emitter Voltage	I _C = 5 A V _{CE} = 4 V			1.5	V
h _{FE*}	DC Current Gain	I _C = 0.5 A V _{CE} = 4 V I _C = 5 A V _{CE} = 4 V I _C = 10 A V _{CE} = 4 V	40 15 5		250 150	
f _T	Transition frequency	I _C = 0.5 A V _{CE} = 4 V	3			MHz

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

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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