

POWER LINEAR AND SWITCHING APPLICATIONS

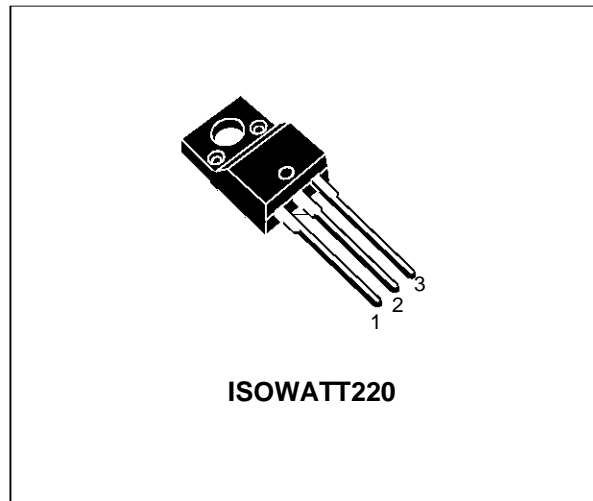
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

APPLICATION

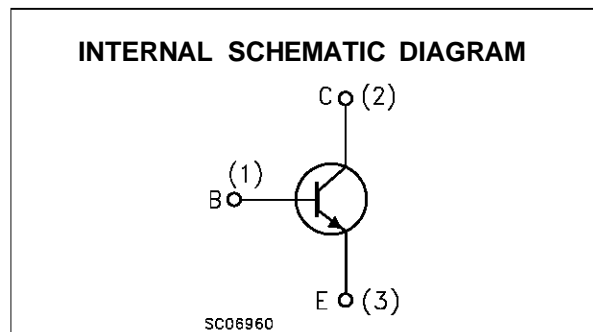
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

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.



INTERNAL SCHEMATIC DIAGRAM



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	$^\circ\text{C}$

BD905FI

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	3.57	$^{\circ}C/W$
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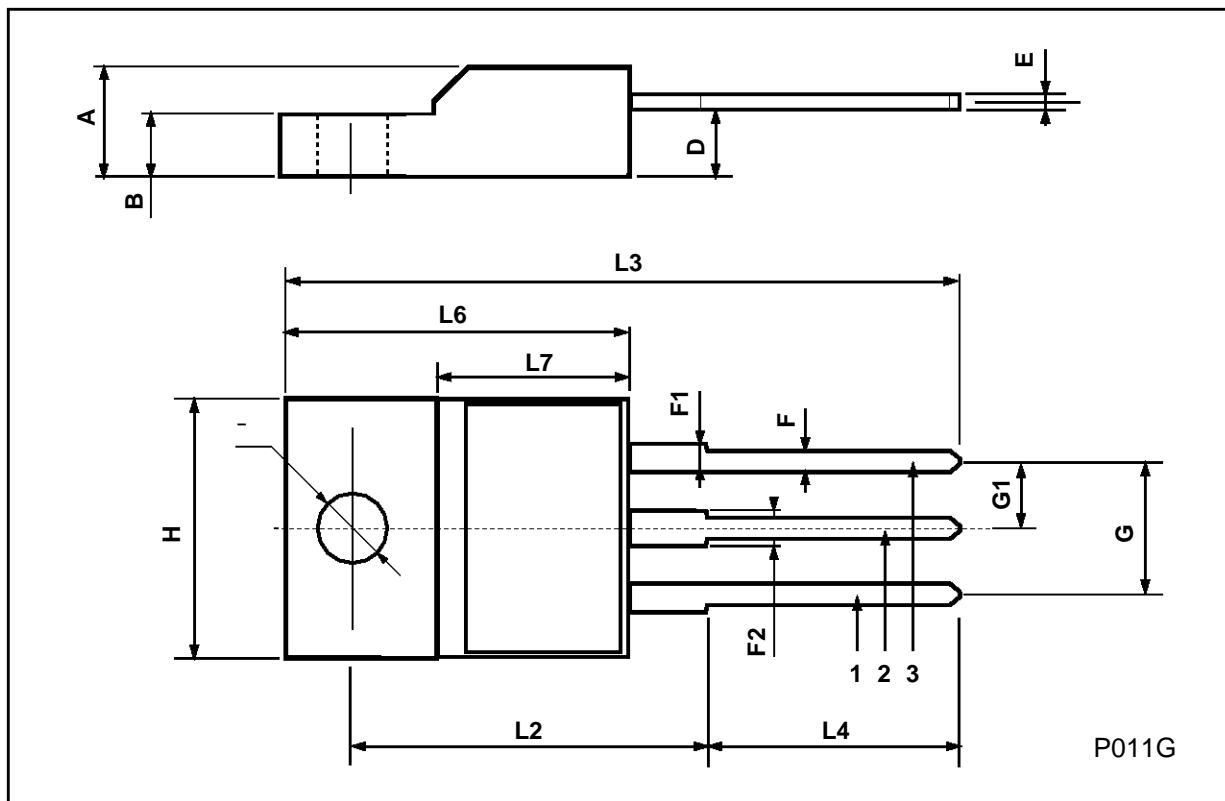
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 45 V$ $T_{case} = 150^{\circ}C$			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	$I_C = 5 A$ $I_C = 10 A$	$I_B = 0.5 A$ $I_B = 2.5 A$		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	$I_C = 0.5 A$ $I_C = 5 A$ $I_C = 10 A$	$V_{CE} = 4 V$ $V_{CE} = 4 V$ $V_{CE} = 4 V$	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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