

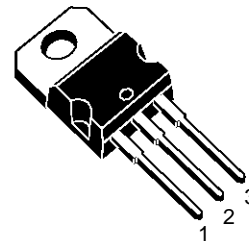
COMPLEMENTARY SILICON POWER TRANSISTORS

- BD908, BD909, BD910, BD911 AND BD912
SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

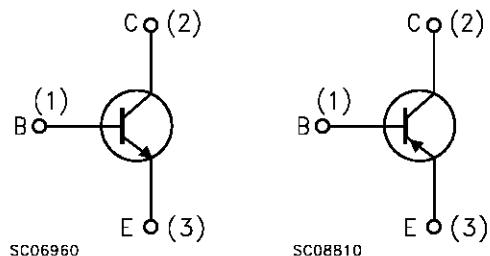
The BD707, BD709, and BD711 are silicon epitaxial-base NPN power transistors in Jedec TO-220 plastic package, intended for use in power linear and switching applications.

The complementary PNP types are BD908, BD910, and BD912 respectively.



TO-220

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value				Unit
		NPN	BD907	BD909	BD911	
		PNP	BD908	BD910	BD912	
V_{CBO}	Collector-Base Voltage ($I_E = 0$)		60	80	100	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)		60	80	100	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)		5			V
I_E, I_C	Collector Current		15			A
I_B	Base Current		5			A
P_{tot}	Total Dissipation at $T_c \leq 25^\circ\text{C}$		90			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.

BD907/BD908/BD909/BD910/BD911/BD912**THERMAL DATA**

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.67	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ °C}$ unless otherwise specified)

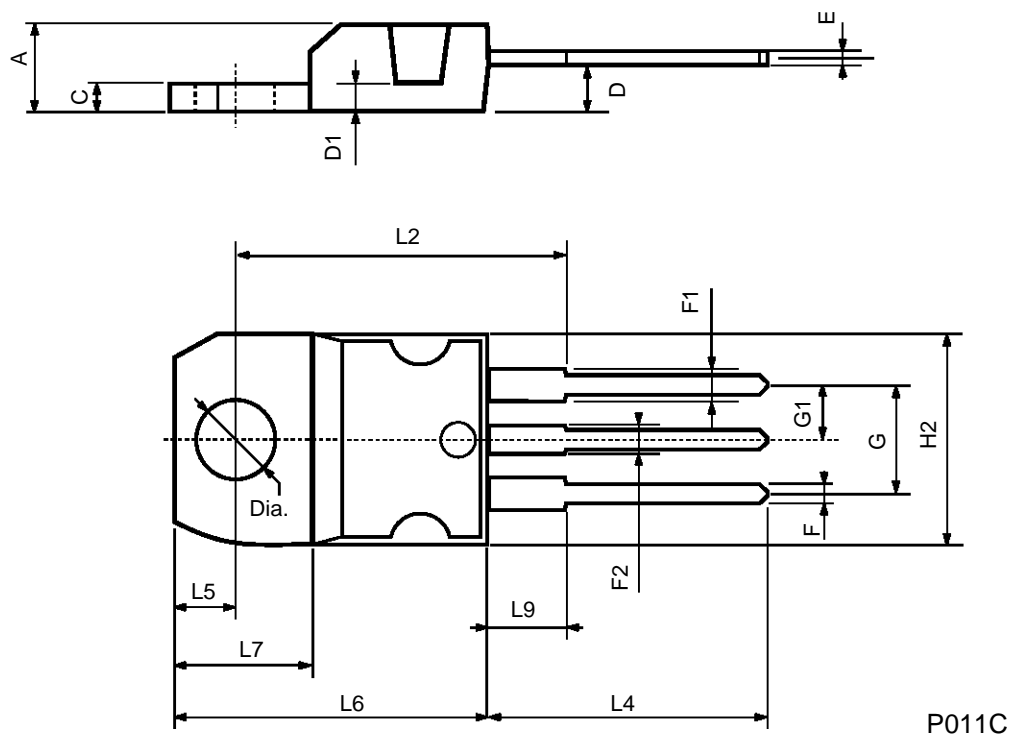
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	for BD907/908	$V_{CB} = 60\text{ V}$			500	μA
		for BD909/910	$V_{CB} = 80\text{ V}$			500	μA
		for BD911/912	$V_{CB} = 100\text{ V}$			500	μA
		$T_{case} = 150\text{ °C}$					
		for BD907/908	$V_{CB} = 60\text{ V}$			5	mA
		for BD909/910	$V_{CB} = 80\text{ V}$			5	mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	for BD907/908	$V_{CB} = 30\text{ V}$			1	mA
		for BD909/910	$V_{CB} = 40\text{ V}$			1	mA
		for BD911/912	$V_{CB} = 50\text{ V}$			1	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5\text{ V}$				1	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 100\text{ mA}$	for BD907/908 for BD909/910 for BD911/912	60 80 100			V V V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 5\text{ A}$	$I_B = 0.5\text{ A}$			1	V
		$I_C = 10\text{ A}$	$I_B = 2.5\text{ A}$			3	V
$V_{BE(sat)}^*$	Base-Emitter Saturation Voltage	$I_C = 10\text{ A}$	$I_B = 2.5\text{ A}$			2.5	V
V_{BE}^*	Base-Emitter Voltage	$I_C = 5\text{ A}$	$V_{CE} = 4\text{ V}$			1.5	V
h_{FE}^*	DC Current Gain	$I_C = 0.5\text{ A}$	$V_{CE} = 4\text{ V}$	40		250	
		$I_C = 5\text{ A}$	$V_{CE} = 4\text{ V}$	15		150	
		$I_C = 10\text{ A}$	$V_{CE} = 4\text{ V}$	5			
f_T	Transition frequency	$I_C = 0.5\text{ A}$	$V_{CE} = 4\text{ V}$	3			MHz

* Pulsed: Pulse duration = 300 μs , duty cycle 1.5 %** Value for which $I_C = 3.3\text{ A}$ at $V_{CE} = 2\text{ V}$.

For PNP types voltage and current values are negative.

TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151



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