

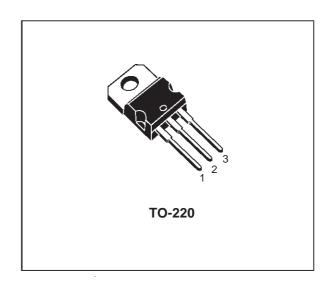
COMPLEMENTARY SILICON POWER TRANSISTORS

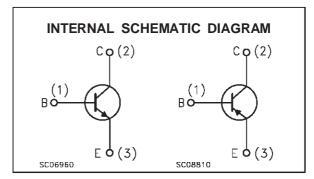
 STMicroelectronics PREFERRED SALESTYPES

DESCRIPTION

The BD909 and BD911 are silicon Epitaxial-Base NPN power transistors mounted in Jedec TO-220 plastic package. They are intented for use in power linear and switching applications.

The complementary PNP types are BD910 and BD912 respectively.





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value		Unit
		NPN	BD909	BD911	
		PNP	BD910	BD912	
V _{CBO}	Collector-Base Voltage (I _E = 0)		80	100	V
V _{CEO}	Collector-Emitter Voltage (I _B = 0)		80	100	V
V _{EBO}	Emitter-Base Voltage (I _C = 0)		5		V
I _E ,I _C	Collector Current		15		А
Ι _Β	Base Current		5		А
P _{tot}	Total Dissipation at T _c ≤ 25 °C		90		W
T _{stg}	Storage Temperature		-65 to 150		°C
Tj	Max. Operating Junction Temperature		150		°C

For PNP types voltage and current values are negative.

October 1999 1/6

BD909 / BD910 / BD911 / BD912

THERMAL DATA

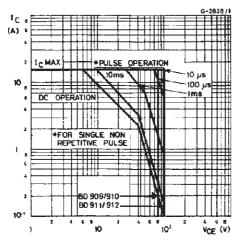
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Тур.	Max.	Unit
Ісво	Collector Cut-off Current (I _E = 0)	for BD909/910 for BD911/912 T _{case} = 150 °C for BD909/910 for BD911/912	$V_{CB} = 80 \text{ V}$ $V_{CB} = 100 \text{ V}$ $V_{CB} = 80 \text{ V}$ $V_{CB} = 100 \text{ V}$			500 500 5	μΑ μΑ mA mA
I _{CEO}	Collector Cut-off Current (I _B = 0)	for BD909/910 for BD911/912	V _{CE} = 40 V V _{CE} = 50 V			1	mA 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	for BD909/910 for BD911/912	80 100			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

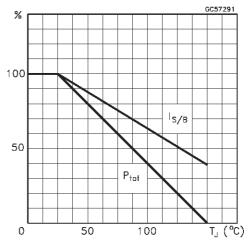
^{*} Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

Safe Operating Area

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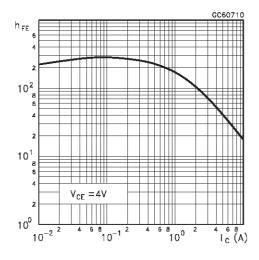
Derating Curves



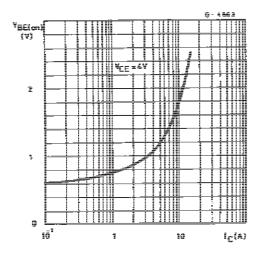
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For PNP types voltage and current values are negative.

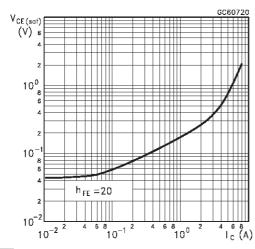
DC Current Gain (NPN type)



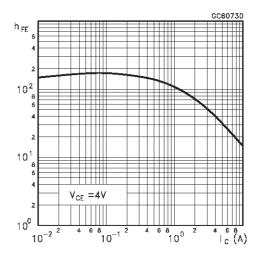
DC Transconductance (NPN type)



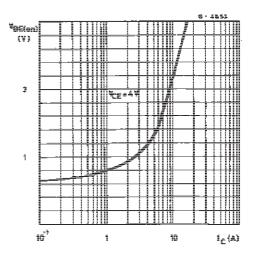
Collector-Emitter Saturation Voltage (NPN type)



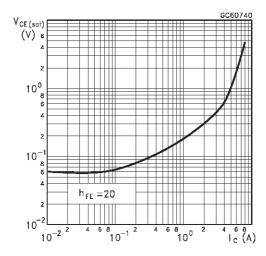
DC Current Gain (PNP type)



DC Transconductance (PNP type)

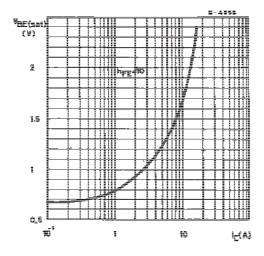


Collector-Emitter Saturation Voltage (PNP type)

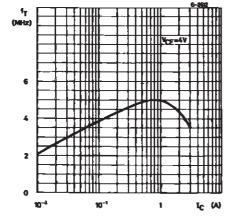


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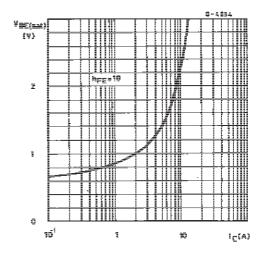
Base-Emitter Saturation Voltage (NPN type)



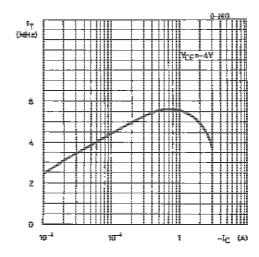
Transition Frequency (NPN type)



Base-Emitter Saturation Voltage (PNP type)



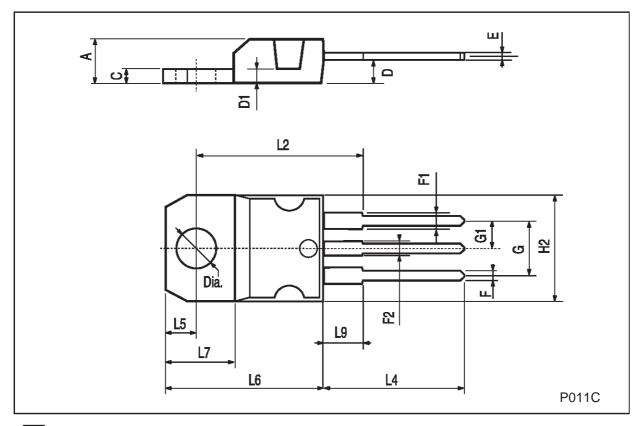
Transition Frequency (PNP type)



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TO-220 MECHANICAL DATA

DIM.	mm			inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
А	4.40		4.60	0.173		0.181	
С	1.23		1.32	0.048		0.051	
D	2.40		2.72	0.094		0.107	
D1		1.27			0.050		
Е	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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