BD909/911
BD910/912

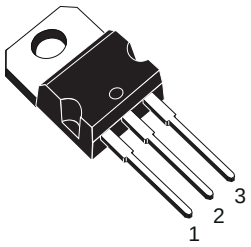
COMPLEMENTARY SILICON POWER TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES

DESCRIPTION

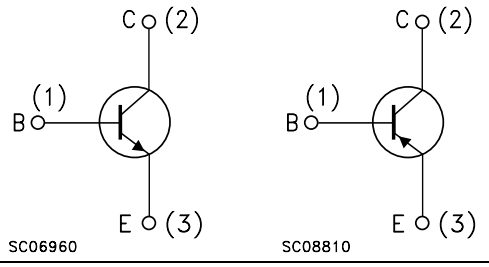
The BD909 and BD911 are silicon Epitaxial-Base NPN power transistors mounted in Jedec TO-220 plastic package. They are intented for use in power linear and switching applications.

The complementary PNP types are BD910 and BD912 respectively.



TO-220

INTERNAL SCHEMATIC DIAGRAM



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		A
I_B	Base Current		5		A
P_{tot}	Total Dissipation at $T_c \leq 25\ ^oC$		90		W
T_{stg}	Storage Temperature		-65 to 150		^oC
T_j	Max. Operating Junction Temperature		150		^oC

For PNP types voltage and current values are negative.

THERMAL DATA

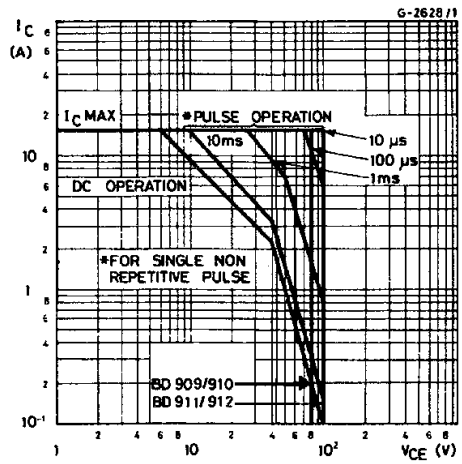
$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	1.4	°C/W

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)	for **BD909/910** for **BD911/912** T_{case} = 150 °C for **BD909/910** for **BD911/912**	V_{CB} = 80 V V_{CB} = 100 V V_{CB} = 80 V V_{CB} = 100 V			500 500 5 5	µA µA 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 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
$V_{CE(sat)}$*	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 %
For PNP types voltage and current values are negative.

Safe Operating Area



Derating Curves