

## BD909 – BD911

### SILICON POWER TRANSISTORS

The BD909 and DB911, are silicon epitaxial-base NPN power transistors in a TO-220 envelope. They are intended for use in power linear and switching applications. Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value		Unit
			BD909	BD911	
$V_{CBO}$	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
$I_C$	Collector Current		15		A
$I_E$	Emitter Current		15		A
$I_B$	Base Current		5		A
$P_t$	Power Dissipation		90		W
$T_j$	Junction Temperature		150		°C
$T_{stg}$	Storage Temperature range		-65 to 150		

Limiting values in accordance with the Absolute Maximum System (IEC 134)

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJ-mb}$	From junction to mounting base	1.4	°C/W

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### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

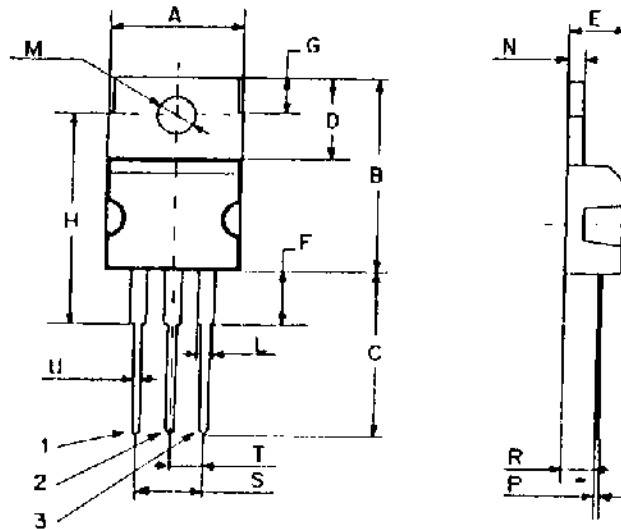
Symbol	Ratings	Test Condition(s)		Value			Unit	
				Min	Typ	Max		
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 80\text{ V}$	$T_J = 25^\circ\text{C}$	BD909	-	-	0.5	mA
		$V_{CB} = 100\text{ V}$		BD911				
		$V_{CB} = 80\text{ V}$	$T_J = 150^\circ\text{C}$	BD909	-	-	5	
		$V_{CB} = 100\text{ V}$		BD911				
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = 40\text{ V}$		BD909	-	-	1	mA
		$V_{CE} = 50\text{ V}$		BD911				
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 5\text{ V}, I_C = 0$		BD909	-	-	1	mA
				BD911				
$V_{CE0sust}$	Collector-Emitter Sustaining Voltage (*)	$I_B = 0, I_C = 0.1\text{ A}$		BD909	80	-	-	V
				BD911	100	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = 5\text{ A}, I_B = 500\text{ mA}$		BD909	-	-	1	V
				BD911				
		$I_C = 10\text{ A}, I_B = 2.5\text{ A}$		BD909	-	-	3	
				BD911				
$V_{BE(SAT)}$	Base-Emitter Saturation Voltage (*)	$I_C = 10\text{ A}, I_B = 2.5\text{ A}$		BD909	-	-	2.5	V
				BD911				
$V_{BE}$	Base-Emitter Voltage (*)	$I_C = 5\text{ A}, V_{CE} = 4\text{ V}$		BD909	-	-	1.5	V
				BD911				
$h_{FE}$	DC Current Gain (*)	$I_C = 0.5\text{ A}, V_{CE} = 4\text{ V}$		BD909	40	-	250	-
				BD911				
$h_{FE}$	DC Current Gain (*)	$I_C = 5\text{ A}, V_{CE} = 4\text{ V}$		BD909	15	-	150	
				BD911				
$h_{FE}$	DC Current Gain (*)	$I_C = 10\text{ A}, V_{CE} = 4\text{ V}$		BD909	5	-	-	
				BD911				
$f_T$	Transition Frequency	$I_C = 0.5\text{ A}, V_{CE} = 4\text{ V}$		BD909	3	-	-	MHz
				BD911				

(\*) Pulse Width  $\approx 300\ \mu\text{s}$ , Duty Cycle  $\angle 1.5\%$

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### MECHANICAL DATA CASE TO-220

DIMENSIONS (mm)		
	Min.	Max.
A	9,90	10,30
B	15,65	15,90
C	13,20	13,40
D	6,45	6,65
E	4,30	4,50
F	2,70	3,15
G	2,60	3,00
H	15,75	17,15
L	1,15	1,40
M	3,50	3,70
N	-	1,37
P	0,46	0,55
R	2,50	2,70
S	4,98	5,08
T	2.49	2.54
U	0,70	0,90



Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter
Package	Collector

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